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END OF THE FIRST VOLUME FOR 1905.

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ABSTRACT OF

The Oliver-Sharpey Lecture

ON

THE INFLUENCE OF ATMOSPHERIC PRESSURE ON MAN.[1]

Delivered before the Royal College of Physicians of London on April 6th, 1905,

By LEONARD ERSKINE HILL,
M.B. Lond., F.R.S.,
LECTURER ON PHYSIOLOGY AT THE LONDON HOSPITAL MEDICAL SCHOOL.

Mr. President and Gentlemen,—I must first of all acknowledge the honour which the council has done me in inviting me to give this lecture and at the same time express my appreciation of the energy and invention with which Dr. George Oliver has pursued the pathway of research and the valuable stimulus which he has given to future inquirers by founding this lectureship.

My subject naturally divides itself into two parts—the influence of lessened and of increased atmospheric pressure. The one derives its practical importance from mountain sickness and mountain air therapeutics, the other from the sickness of compressed-air workers and the therapeutics of oxygen inhalation. Dr. Theodore Williams as Lumleian lecturer in 1893 set before you the climatic influences of mountain resorts. I shall confine myself to the results of physiological inquiry.

The Effect of Lessening the Atmospheric Pressure; Mountain Sickness.

Analysing the blood gases Bert (1870–80) found the oxygen in the blood was diminished by one-half when the barometric pressure was lowered two-thirds. Several years later Hufner worked out the oxygen dissociation curve of the blood, using purified solutions of hæmoglobin. He concluded that the hæmoglobin remains more than 90 per cent. saturated with oxygen when the barometric pressure is lowered to one-fifth. This dissociation curve of Hufner rendered difficult the acceptance of Bert's explanation of mountain sickness—to wit, oxygen hunger. Hufner himself explained the oxygen hunger by the supposition that a marked difference in oxygen tension between the alveolar air and the blood is required to drive the oxygen through the alveolar wall. Löwy and Zuntz have recently re-investigated the whole matter and have proved that the methods used by Hufner in the preparation of hæmoglobin modify very greatly the oxygen dissociation curve. They found that hæmoglobin solutions hold oxygen much faster than fresh blood and, confirming the results of Bert, have determined that fresh blood shaken with air is only 88 per cent. saturated with oxygen, while the blood in the body exposed to alveolar air (in which the oxygen tension equals 13·5 per cent. of an atmosphere) is only 79 per cent. saturated. Zuntz and Durig have also disproved the above-mentioned supposition of Hufner. Experimenting with frog's lungs they found that a very small difference of oxygen tension (six millimetres) between alveolar air and venous blood is sufficient to maintain diffusion, enough even to satisfy our needs in times of strenuous exertion such as climbing. Mosso and Zuntz and their co-workers have in the last few years carried out a series of exact investigations on themselves while dwelling on the top of Monte Rosa, 4560 metres (nearly 15,000 feet above sea level). They utilised the Regina Margherita hut as a laboratory. In the last expedition of Zuntz and Durig the oxygen tension in Durig's alveolar air fell on the first day as low as 6·3 per cent. of an atmosphere. This makes the oxygen saturation of his blood 65·9 per cent. He suffered from severe migraine and other symptoms of mountain sickness.

It is not so much the quantity as the tension of oxygen in the blood which is of importance under such conditions. This is shown by the fact that an animal whose hæmoglobin has been one-third saturated with CO or from which one-third of the blood has been removed suffers at the same partial pressure of oxygen as a normal animal (Haldane an Lorrain Smith).

Increased pulmonary ventilation is the mechanism by which the alveolar oxygen tension is kept up in high altitudes. The greater the volume of the tidal air the more does the composition of the alveolar air approximate to that of the external air. A deep breather can thus attain to far higher altitudes than a superficial breather (Löwy). Shallow breathing animals such as rabbits die if kept for more than three days at 350 mm. Hg. (6000 metres altitude) and their organs show marked signs of fatty degeneration (Lewinstein, Schrötter). The mountain climber needs a powerful heart rapidly to circulate blood through his lungs and requires to be a deep breather, otherwise he suffers from oxygen hunger. Hence the varying altitudes at which different men are affected. Climbing enormously increases the oxygen use. Resting in Berlin Zuntz used 232 cubic centimetres oxygen per minute; while climbing a glacier on Monte Rosa he used 1329 cubic centimetres. His pulmonary ventilation increased from 4·755 litres per minute resting at Berlin to 7·613 litres resting on Monte Rosa, and to 46·74 litres while climbing the glacier. Hence the aggravation of mountain sickness by exertion.

Training makes an enormous difference. The heart and respiratory mechanism become adjusted to the enormous demands made upon them. The surplus body weight is reduced and the load to be lifted thus lightened. New movement complexes are established and carried out with the maximum of economy. A trained athlete can turn 30 per cent. of his total energy into external work, an untrained man only 10 or 15 per cent. The untrained man becomes over-heated. Owing to the diathermancy of the upper regions of the air due to its freedom from dust and vapour the radiant heat of the sun is very great. This and the muscular work of climbing together may raise the body temperature of the town dweller to 103° F. (Pembrey, Arkle)—a temperature which by itself will lead to breathlessness. It is well known to climbers that windless sun-heated valleys and gullies produce more sickness than exposed ridges. Conway recommends climbing by night or cloudy days. On the other hand, an Alpine soldier of splendid physique and trained to mountaineering carried 40 kilogrammes up the glacier of the Gnifetti peak with a rise of temperature not greater than a few points of a degree (Mosso). Manca, after 70 days' training with dumb-bells, found he could do five times the work he could do on the first day. The CO_2 output produced by climbing Berne cathedral was increased fourfold at first and only threefold after training (Kronecker). A debauch makes a great difference in the capacity of a man to climb or endure high altitudes. A soldier who could lift 5 kilogramme dumb-bells 104 times on Monte Rosa, after a drinking bout could only lift them 67 times and his pulse accelerated much more than when in good condition.

The observations of Zuntz and his co-workers show that the respiratory metabolism is increased from 15 to 30 per cent. in town dwellers while dwelling on the top of Monte Rosa. This increase is not due to cold, insolation, or light of the snowfields, for it persisted while the members of the expedition rested within the warm Alpine hut. Not only the resting metabolism but that during muscular exertion is increased. The metabolism in walking on the level snow-covered ground was contrasted with walking under similar conditions in Vienna.

The increased metabolism did not come on until the second day after reaching the Monte Rosa hut. This delay explains why a similar increase has not been observed in pneumatic chamber experiments (Löwy) or balloon expeditions (Zuntz and Schrötter). Part of this increased metabolism may be attributed to the increased respiratory work and the greater rapidity of the circulation. Part is probably due to nervous exaltation produced by the strange surroundings and bracing air. The high electrical potential of the air on mountain peaks has been considered as a possible cause but without the production of definite evidence. Alpine soldiers showed no increased CO_2 output on Monte Rosa (Mosso).

By lower oxygen tension than 6 to 7 per cent. of an atmosphere the metabolism becomes deranged as evidenced by rise of respiratory quotient, appearance of lactic and oxalic acids in the urine (Terray), increased nitrogen output (Fraenkel and Geppert), and fatty degeneration of organs. Death quickly occurs when the oxygen tension falls to 3 to 4 per cent. of an atmosphere. Diminution of the barometric pressure has no mechanical effect on the circulation (Fraenkel and Geppert). The pulse is always accelerated in high altitudes and irregular rhythm of respiration or Cheyne Stokes respiration often occurs on resting or sleeping. The latter is probably due to the diminished alveolar tension of CO_2, which is the prime regulator of the rhythm of respiration (Haldane). Pembrey has found that Cheyne Stokes respiration can be abolished by increasing the percentage of CO_2 in the respired air. The blood counts are increased by short exposures to low barometric pressures owing to congestion of the blood in the peripheral parts and increased concentration produced by transudation of plasma. The increase is not found in blood taken from the arteries. Exposure for many days causes increased formation of hæmoglobin; the percentage of iron in the liver diminishes and that in the blood rises. The inhabitants of the lofty Peruvian plateaux are stated to have a million or two more corpuscles per cubic millimetre than dwellers on the plains (Viault). The therapeutic effect of mountain climate depends on the purity of the air, its freedom from dust and bacteria; on the bracing cold and intense insolation, on the strengthening of the heart and respiratory mechanism; on the increased formation of hæmoglobin; and on increased respiratory metabolism.

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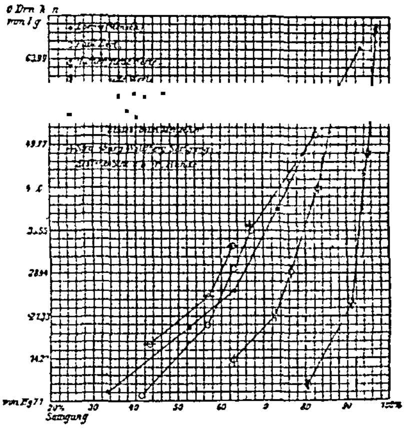
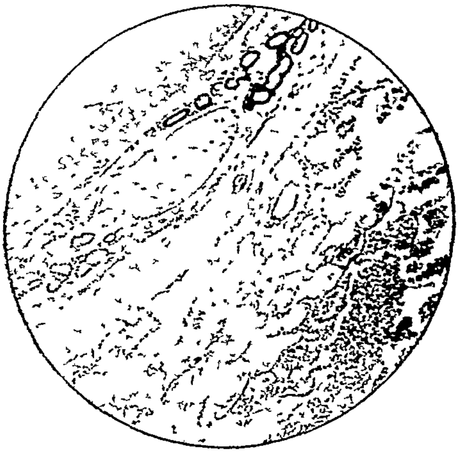
[1] The lecture will appear in extenso in a book entitled "Recent Advances in Physiology." By various authors. Publisher, Edward Arnold.

Fig. 1.



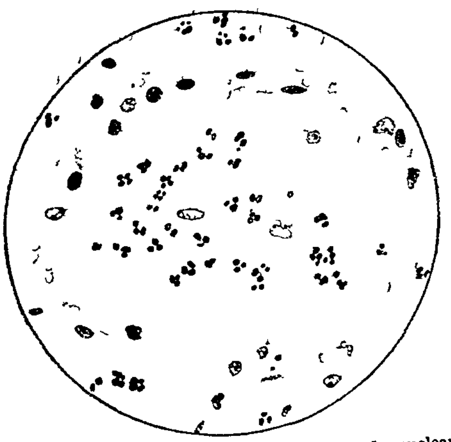
The curves of dissociation of oxygen. Contrast Lowy's curve with that of Hufner.

Fig. 2.



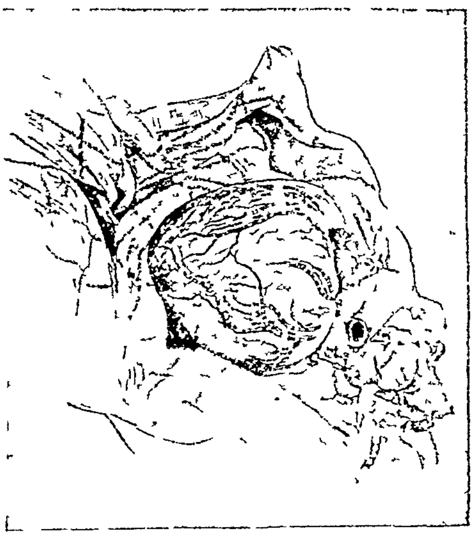
Wall of bronchial tube and alveoli showing inflammatory exudation following exposure to two atmospheres O_2

Fig. 3.



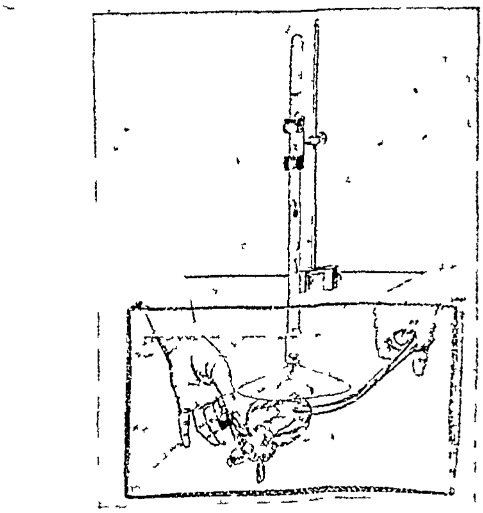
Alveolus under high power showing polymorpho-nuclear leucocytes and shed alveolar cells

Fig. 4.



The heart from a dog rapidly decompressed showing its distension with gas and bubbles in the coronary vessels (Schrötter).

Fig. 5.

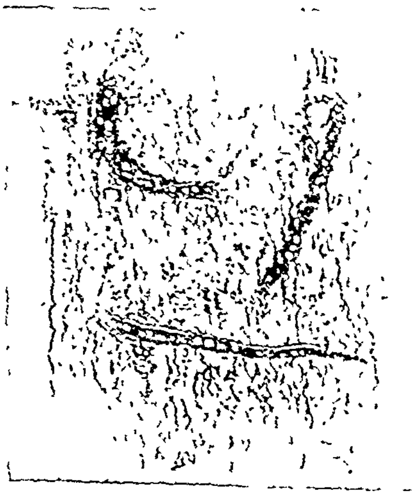


The method of extracting the gas from the heart for analysis (Schrötter)

The Effect of Compressed Air. Caisson Sickness and Divers' Palsy

The rate of metabolism of an animal cannot, like a fire, accelerated by increasing the supply of oxygen (Pflüger). The researches of Regnault, Hermann and Lehmann, Terray, and Löwy have recently been confirmed by Durig who has used the most exact methods of experiment. He finds that oxygen tensions varying between 11 per cent. and 94 per cent. of an atmosphere have not the slightest effect on the respiratory exchange of man. The inhalation of oxygen or exposure to compressed air cannot, therefore, be used as a *therapeutic agent to increase the normal rate of metabolism.* Cases of dyspnœa where the oxygen in the blood is deficient and the tissues are suffering from oxygen hunger may, of course, be benefited.

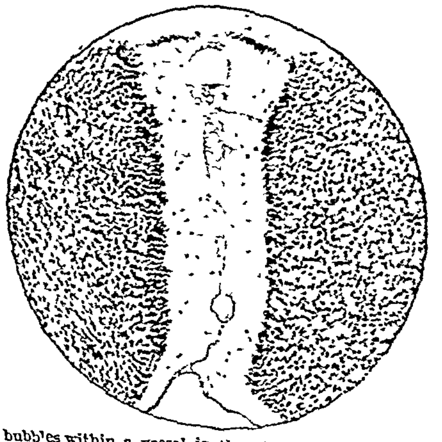
FIG. 6.



Gas bubbles in the capillaries of the spinal cord (Schrötter).

The continued action of oxygen above 100 per cent. of an atmosphere acts as a protoplasmic poison. It produces *inflammation* of the lungs (Lorrain Smith, Hill, and Macleod), depresses the CO_2 output, and lowers the body temperature. Haldane and Lorrain Smith, from experiments on the comparative absorption of O_2 and CO (mixed in known proportions) by shed blood and blood in the living animal have concluded that the lung has the power of actively absorbing oxygen and of forcing it into the blood at a tension higher than that in the alveolar air. This power Lorrain Smith finds is abrogated by exposure to oxygen tensions of 170 to 180 per cent. of an atmosphere.

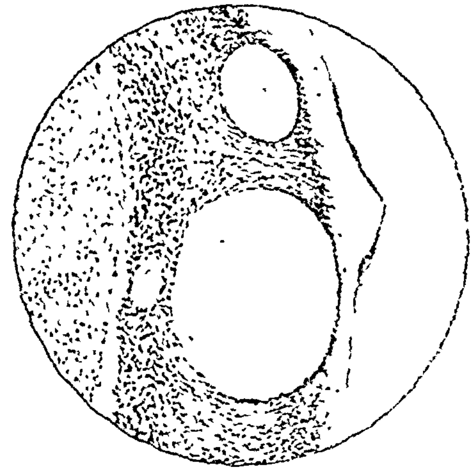
FIG. 7.



Gas bubbles within a vessel in the pia mater of the brain. The corpuscles are driven within the middle part of this vessel and a bubble appears at either end.

The lungs after exposure to high pressure oxygen show congestion of the alveolar capillaries, hæmorrhagic exudation, and consolidation. The pneumonia is patchy if quickly and universal if slowly developed. It requires about 24 hours at eight atmospheres of air (= oxygen 168 per cent. of an atmosphere) to produce marked pulmonary congestion. In animals that survived three days the alveoli and bronchioles showed an exudation containing numberless polymorphonuclear leucocytes, cocci in abundance, and shed alveolar cells (Bulloch and Hill). The use of oxygen inhalations in pneumonia thus finds little scientific evidence in its favour. The epithelium of the swim-bladder of deep sea fish is immune to high pressures of oxygen. The "red body" of the bladder secretes oxygen and in a fish caught at 4500 feet depth the tension of oxygen must have equalled 127 atmospheres. This shows that protoplasm can adapt itself to withstand an enormously high pressure of oxygen, just as it can be evolved to withstand a temperature of 70° C. or the high percentage of salts in the Dead Sea.

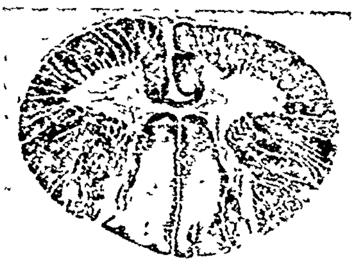
FIG. 8.



Gas bubbles within the cortex of the cerebrum compressing and flattening the surrounding nerve cells.

The muscle and heart and nerves of the frog survive exposure to from 50 to 60 atmospheres O_2 for an hour or even longer. The heart beats become gradually weaker and the muscle curve resembles that of fatigue. All terrestrial animals are instantly thrown into convulsions resembling those of acute asphyxia by exposure to from 50 to 60 atmospheres O_2. Exposure of mammals to from three to five atmospheres O_2 produces in from 10 to 20 minutes tetanic convulsions of great severity and, finally, a dyspnœic type of respiration, coma, and death (Bert, L. Smith, Hill and Macleod).

FIG. 9.

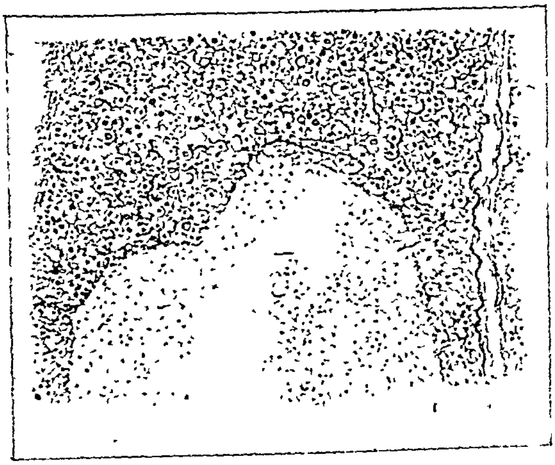


Lesion produced by gas bubbles in the spinal cord of a diver who was stricken with paraplegia after ascending from a depth of 40 metres (130 feet; five atmospheres) (Schrötter).

Analyses of the blood gases show that nitrogen is absorbed by the blood of an animal exposed to compressed air according to the law of partial pressures (Bert, Schrötter, Hill and Macleod). Under one atmosphere 100 cubic centimetres of blood dissolve 1·23 cubic centimetres of N_2; under four atmospheres 4·92 cubic centimetres of N_2. The same blood gives up 3·69 cubic centimetres of N_2 when decompressed from four atmospheres to one atmosphere. The whole blood in the body of a man weighing 70 kilogrammes would give up about 130 cubic centimetres of N_2. His tissue fluids would yield ten times as much.

The study of the circulation has been carried out by recording manometers placed within the pressure chamber or by microscopical examination of the web of the frog's foot stretched over the window of the chamber. The observations so made show that the compressed air has no mechanical effect on the circulation. The pressure is instantly and equally transmitted to all parts of the body by the fluids of the body. All mechanical congestion theories of the cause of caisson sickness are therefore erroneous (Hill and Macleod). In the case of divers and caisson workers every ten metres of water depth equal one atmosphere. A man working at a depth of 100 feet is exposed to about four atmospheres of air pressure. The study of the effects of rapid decompression shows that the cause of caisson sickness and divers' palsy is the setting free of the air which has dissolved in the blood and tissue fluids under the influence of the pressure. This forms bubbles and produces air embolism. The symptoms only occur after the men have returned to the surface. The gas so set free is chiefly nitrogen, for the oxygen is quickly absorbed by the blood and tissues. Analysis of the gas obtained from the right heart of a dog yielded 15·2 per cent. CO_2, 82·8 per cent. N_2, and 2·0 per cent. O_2. This animal was instantaneously decompressed by the bursting of the chamber. Enormous subcutaneous emphysema was found with gas in the stomach, omentum, anterior chamber of eye, spinal cord, cerebrospinal fluid, &c. (Bert, Schrötter, Hill and Macleod). The formation of the air bubbles can be observed in the capillary circulation of the web of the frog's feet. To watch the bubbles of air scurrying through the capillaries first one or two and then many until the vessel is filled with air is one of the most interesting sights I have ever witnessed.

FIG. 10.



The lesion seen under a high power showing the necrosis of the nervous tissue (Schrotter).

Recompression drives the gas bubbles again into solution and allows the circulation to recommence. Similarly recompression can be applied in cases of caisson sickness and divers' palsy but it must obviously be applied very rapidly or the effects of the ischæmia will persist. Post-mortem examination of the spinal cord in cases of divers' palsy shows the existence of necrotic patches surrounding the spaces in which air-bubbles collected after decompression (Catsaras, Schrötter). Recompression chambers have been used with advantage in some caisson works (Moir, Schrötter). Gradual decompression allows the dissolved gas to escape from the lungs and prevents the formation of bubbles in the blood. By making, therefore, the period of decompression last one hour, or for very deep work two hours, all caisson workers and divers can be entirely relieved from the risks of paralysis or death.

I have, with Messrs. Siebe and Gorman's coöperation, designed a diving-bell into which divers can enter and inclose themselves after completion of their work. Hoisted on to deck in this bell they can be slowly decompressed. The use of this bell will allow divers safely to reach greater depths than at present. Caisson works must necessarily possess an air-lock in which the men are compressed or decompressed on entering or leaving the works. The times of decompression used by engineers are at present far too short. Five, or at most ten minutes, is the period commonly used. Knowing as we now do the cause of caisson sickness the responsibility of preventing such sickness should be thrown upon the contractors of caisson works.

Oxygen gas might be used to replace the air in the airlock so as to wash the nitrogen out of the tissue fluids and blood. This would allow the period of decompression to be greatly accelerated, for owing to the oxygen-carrying power of the blood there is little danger of oxygen bubbles producing embolism (Schrötter, Hill and Ham). Against this practice, however, is to be put the toxic action of high pressure oxygen on the lungs and central nervous system. It would not be safe to expose a man to three atmospheres of oxygen for more than a few minutes.

Stress has been laid by Snell on the importance of the CO_2 tension in the air breathed by caisson workers. He says that in the caissons of the Blackwall Tunnel an increase of CO_2 tension of 0·1 per cent. of an atmosphere produced caisson sickness and that thorough ventilation proved effectual as a preventive means. C. Ham and I have recently investigated this matter. A tension of CO_2 of 4 per cent. of an atmosphere, as is well known, produces marked dyspnœa. This, we find, is so whether an animal be exposed to one or to several atmospheres of air. We enclosed a cat in the chamber without supplying any ventilation and allowed the percentage of CO_2 to reach 4 per cent. We then raised the air pressure in the chamber to four atmospheres; the CO_2 percentage (obtained by analysis of the air drawn from the chamber) fell to 1 but the tension (1×4) remained the same and so did the signs of dyspnœa. We then allowed three atmospheres of air to escape; three-quarters of the CO_2 thus escaped, the tension of CO_2 fell to 1, and the dyspnœa ceased. Such high tensions of CO_2 as from 1 to 4 per cent. seemed to have no influence on the danger of decompression. The effect of bad ventilation in caissons may possibly be due to CO arising from flare lights or to H_2S arising from the soil. Any factor which leads to exhaustion of the worker, such as overheated air saturated with moisture, must increase the danger of rapid decompression by lowering the efficiency of the pulmonary ventilation.

In carrying out our researches Professor Macleod and myself have been greatly indebted to Messrs. Siebe and Gorman, who have given us the use of air pumps and chambers and the benefit of their unequalled experience as submarine engineers.

Lectures
ON
CARBOHYDRATE METABOLISM.

A Course of Advanced Lectures in Physiology, delivered at the University of London,

BY F. W. PAVY, M.D. LOND., LL.D. GLASG., F.R.S.,

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LECTURE II.[1]

GENTLEMEN,—The deduction to be drawn from what has preceded is that saccharose, lactose, and maltose, reaching the circulatory system as such, remain untouched and simply filter off with the urine. Their molecules, it may be considered, are not of a nature to possess attraction for, and to be taken on by, the bioplastic molecules with which in the circumstances they are brought into contact. Galactose, lævulose, and dextrose, on the other hand, must be regarded as possessing an affinity for bioplasm which renders them susceptible when similarly placed of being to a greater or less extent assimilated or taken on by it instead of being wholly rejected. Although thus much is permitted to be said, yet the experimental evidence which has been adduced shows that the conditions existing only lead to a more or less tardy and incomplete assimilation, whence it arises that even in the case of dextrose, the most assimilable of the three sugars, a certain amount of escape occurs with the urine.

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[1] Lecture I. was published in THE LANCET of June 24th, 1905, p. 1704.

The experiments with the injection of a quarter of a gramme of dextrose per kilogramme are instructive upon this point. The blood from the instantly killed animal gave the figures 2·400 per 1000 before and 2·660 per 1000 after hydrolysis; that from the animal killed five minutes after, 2·333 and 2·910 per 1000; and from the animal killed at the end of 15 minutes, 1·430 and 2·040 per 1000. With the introduction of even so small an amount as $\frac{1}{4000}$th of the body weight, after the lapse of a quarter of an hour the blood had not returned to its normal condition but the sugar present in it had a lower cupric oxide reducing power than it had at first. In the case of the animals that were allowed to live for 60 minutes after the injection the blood also showed in an unmistakeable manner the existence of a larger amount of sugar than is normally present. From this it follows that when sugar reaches the circulation instead of being at once appropriated it only makes a tardy disappearance and during this time its presence is being revealed by the state of the urine. Looking at the table showing the condition of the urine secreted during the 60 minutes the amount of sugar is seen to stand definitely higher than in normal circumstances. In one instance the figures stood at 12·56 per 1000 before and 18·20 per 1000 after hydrolysis. There was an instance in which the figures stood at 2·28 and 5·67 per 1000, which is in conformity with the normal, but here there was quite an exceptional flow of urine, and reckoning for outflow and proportionate amount present the quantity of sugar found constituted 11·3 per cent. of that injected. Some of this would be naturally due to normal sugar elimination.

Instructive results were likewise given by the one gramme per kilogramme subcutaneous injections. Here the dextrose would only be gradually absorbed and even at the end of two hours, when the animals were killed, examination of the subcutaneous tissue at the seat of injection showed that marked sugar impregnation still existed. The blood at the time named gave a distinctly higher indication of sugar than is normally found. The urine varied considerably, which is not surprising, as there are many factors that influence the secreting activity of the kidney. Where large quantities of sugar are eliminated the diuresis evoked forces elimination, but in contrary circumstances through inactivity of the kidney only a restricted outflow may occur. To quote the highest sets of figures obtained before and after hydrolysis they ran as follows: 11·20 and 22·40 per 1000, 16·30 and 22·80, 13·60 and 24·00, and 12·38 and 25·60.

I consider that the evidence supplied by the line of research to which I have just been referring unequivocally shows that sugar reaching the circulation cannot escape filtering off with the urine on passing through the kidney, and yet it is contended that the carbohydrate of our food finds its way through the circulatory system in the form of sugar to the tissues for consumption. If this really occurred it could not fail to be attended with glycosuria. Undoubtedly the carbohydrate must in some way or other reach the tissues for it is here where utilisation of it occurs. The information supplied by the respiratory quotient affords evidence of the carbohydrate of the food actually reaching the seat of utilisation in the tissues. With carbohydrate matter consisting of carbon and of hydrogen and oxygen in the proportion to form water there is only the carbon free for oxidation and the oxygen utilised gives rise to an equal volume of carbon dioxide. Thus, if carbohydrate were the only material oxidised the intake of oxygen and the output of carbon dioxide would stand equivalent. In the case of fat and proteid there are other elements to undergo oxidation and thus a portion of the intake of oxygen will be applied to this purpose and render the output of carbon dioxide proportionately less. Now, observation shows that the larger the amount of carbohydrate entering into the constitution of the food the nearer, in accordance with the principle expounded, does the respiratory quotient approximate to the unity point.

From these considerations the difficulty has to be faced that the carbohydrate of the food has to reach the tissues and that if it passed, as has hitherto been taught, through the circulatory system in the form of sugar it would flow off with the urine as it does in diabetes. Let us suppose for a moment that the food carbohydrate really took the course that has been mentioned. Could this possibly occur without any indication of it being afforded by the state of the blood and the urine? We have seen that no definite relationship is to be traced in the healthy animal between the food and the state of the blood and urine. It is true that the amount of blood sugar came out rather higher for the rabbit than for the cat, the mean of the observations recorded being 1·089 per 1000 before hydrolysis and 1·495 per 1000 after for the one against 0·880 and 1·140 per 1000 for the other; but in the case of both animals the figures stood decidedly higher for the thoroughly fasting than for the fed state, being 1·21 per 1000 before hydrolysis and 1·64 per 1000 after for the rabbit and 1·10 and 1·15 per 1000 for the cat. As regards the urine the same order occurred in the fed state as was noticeable for the blood, the figures being 3·69 per 1000 before and 7·03 per 1000 after hydrolysis for the rabbit and 2·75 and 5·67 per 1000 for the cat. In the fasting state the urinary figures were 2·23 per 1000 before and 4·80 per 1000 after hydrolysis for the rabbit and 4·19 and 8·65 per 1000 for the cat.

Without any food, then, to supply sugar for transit through the circulation the amount of sugar in the blood is seen to be higher than when food was being taken. There is much variation in our own food at different times, but the urine reveals nothing to show it. Voit gives as a normal daily diet for man 118 grammes of proteid, 56 grammes of fat, and 500 grammes of carbohydrate. The urine with this diet gives no further evidence of the presence of sugar than after animal food or no food at all. Can the 500 grammes of carbohydrate pass through the circulatory system to the tissues in the form of free sugar without affording evidence of its doing so through the medium of the urine? We have seen from the experiments with the intravenous injection of a quarter of a gramme of dextrose per kilogramme how sensitive the urine is to the presence of sugar in the blood, and surely the transit of 500 grammes per diem in the human subject from the food ought not to leave the urine in the same state as when there is no food carbohydrate passing, as would happen in a day of fasting. I am not oblivious of the alleged glycogenic function of the liver, but if the liver detained the carbohydrate and subsequently gave it out as sugar this would not prevent the system from being, at some time or other, traversed by the sugar, with the result of a proportionate appearance of sugar in the urine.

It is necessary for service in the economy that the food carbohydrate should reach the tissues, but the transport must be in some other way than as free sugar in the blood, seeing that sugar passing to the tissues would at the same time pass to the kidney and filter off with the urine as it does in diabetes. If sugar entered the blood nothing short of immediate assimilation by it would suffice to prevent the kidney being reached, but assimilation is looked upon as taking place in the tissues and this involves passage of sugar through the circulation.

I do not think the distinction between assimilation and utilisation is kept as clear as it should be. Often it seems as if from the manner in which the word assimilation is used that it implied utilisation. In reality it only implies a taking into, and incorporation with, the material that performs the assimilative duty. Utilisation is a subsequent process and it need not necessarily take place immediately. The one is a process of synthesis which has come to be regarded as dominated by enzyme action, for to enzyme action is now assigned the office of governing factor of building up as well as of breaking down; the other is a process of breaking down with which oxidation is associated. Both the material to be oxidised and the oxidising agent enter the molecular complex within which the oxidation occurs, not presumably in a direct manner by one step but by successive steps of degradation with the formation of various intermediate products before carbon dioxide, water, and ammonia are reached.

It may be said, therefore, that both oxygen and the material to be oxidised are assimilated by the bioplastic molecule within which they constitute the basis for metabolic action. Evidence is afforded of oxygen being taken and stored up by the molecule, in a form to be ready for use when required, by the increase of weight that has been observed to occur in a marmot during profound hibernation and by the discharge of carbon dioxide that has been noticed to persist for some time from a frog placed in an atmosphere of nitrogen and therefore cut off from obtaining an intake of oxygen. Without the storage to some extent of both foodstuff and oxygen by assimilation or incorporation into the molecule there would be no provision for stability of molecular action.

Seeing that the requirement exists for the carbohydrate of the food to reach the tissues where utilisation occurs and that it is incompatible with the circumstances that present themselves for it to pass through the circulatory system as free sugar we are faced with the problem of how the transport is in reality made. This is the matter to which I will now proceed to direct attention and I think it will be found that an explanation can be given which satisfactorily meets all the circumstances.

It has long been known in connexion with the vegetable kingdom that a class of bodies exists into which carbohydrate enters as a component part. The bodies are called glucosides and with the advance of chemical knowledge they have been found to constitute a very numerous and widely distributed group. By chemical means the carbohydrate can be recovered from them, but in the characters they possess there is nothing for a moment suggestive of its presence, so completely does the carbohydrate lose its identity. Until recently it has not been surmised that a similar state of things holds good in connexion with products from the animal kingdom. Landwehr at the commencement of the 1880-90 decade obtained a carbohydrate from mucin which he styled "animal gum." He invested the product with a variety of visionary attributes but did not concern himself about it as a constituent of the parent substance. In the early part of the following decade, whilst engaged in the pursuit of my investigations upon the relations of sugar in the animal system, I came across evidence pointing to proteid matter in connexion both with the animal and vegetable kingdoms being of a glucoside nature. The matter was dealt with in my "Physiology of the Carbohydrates," published in 1894, having previously formed the subject of a communication entitled, "On the Glucoside Constitution of Proteid Matter,' presented to the Royal Society in the preceding year.

By the research conducted it was shown that carbohydrate was susceptible of being obtained from proteid by the breaking-down action of both potash and sulphuric acid, the product in the former case presenting itself in the amylose form and in the latter as sugar. A demonstration was afforded through the medium of the several distinguishing properties observed that the product obtained was in reality of a carbohydrate nature. The albumin and vitellin of the egg, the proteids of the blood serum, and fibrin from the animal kingdom; and from the vegetable kingdom, gluten from wheat flour, and the proteid of the haricot bean were found to yield cleavage carbohydrate. None was obtainable from gelatin and only an insignificant amount from casein. To begin with, as is not unusual in like circumstances, dissent was raised to the proposition I had put forward but I think it may be taken to be now generally accepted. Indeed, gluco-proteid is a term that is found to have fallen into general use.

It was not the mere chemical fact of carbohydrate being a component of proteid that constituted the point of interest to me. I saw in it a bearing of deep physiological importance in connexion with the application of carbohydrate within the animal economy and it was this that riveted my attention to the matter. I knew that carbohydrate underwent utilisation in the tissues and that a means of transport for it from the alimentary canal must exist that would not permit of its filtering off with the urine. The entry of carbohydrate into the construction of the proteid molecule I could see provided what was wanted and gave the clue to the solution of the difficult problem that had hitherto faced us. Locked up in proteid, carbohydrate is in a safe position for escape from being discharged with the urine, on account of the proteid molecule being too large to pass off by filtration.

The importance of the subject has prompted me to return to it and to conduct further work in connexion with it. This I have been lately carrying out in the physiological laboratory of the University of London, where I have found every facility provided to aid its prosecution. The work has branched out into collateral channels and has called for a considerable amount of steady labour in which I have received the able and zealous help of my assistant, Mr. H. W. Bywaters. The first point to be dealt with is the presence of carbohydrate as a component part of different animal proteids. I will afterwards give attention to the physiological bearings belonging to the information that has been experimentally obtained. It will be understood that we shall be now looking at carbohydrate matter from an opposite point of view to that from which it has hitherto been commonly regarded—namely, as proceeding in the building up or anabolic instead of the breaking down or katabolic direction.

It is the locked-up carbohydrate that has to be searched for and the combination has to be broken down before any information can be obtained. After the carbohydrate has been set free the next step is to place it in a position to be susceptible not merely of recognition but of quantitative determination. It is brought to the state of sugar for the attainment of the object in view and in order that the sugar may be satisfactorily estimated there must be nothing finally present to interfere with the application of the ammoniated cupric test. I have now had much experience in connexion with this matter and consider that with careful manipulation trustworthy results are obtainable. For years past I have been in the habit in blood examinations of estimating the amylose (proteid) carbohydrate as well as the sugar, and in my "Physiology of the Carbohydrates" I made special allusion to the fact of an increase being observable as an accompaniment of the presence of an excess of sugar, looking as though a portion of the sugar had passed into an assimilated state whilst in the blood.

The proteid carbohydrate may be separated by the breaking-down agency of potash and by that of hydrochloric acid. With the ordinary proteids the results given by the two processes on subsequent estimation fairly agree. In the case of the mucoids, however, there is great disparity and the information supplied points suggestively to the existence of a certain constitution of the molecule. Something requires to be said regarding the method of procedure for estimating the amount of proteid carbohydrate present in different circumstances, as the matter is related to a line of investigation which seems to me to have a promising character and which as yet has not been touched by others and is therefore not to be found referred to in books.

Estimation of Proteid Carbohydrate by the Potash Process.

When liquid blood is the material to be analysed about 30 grammes is a convenient quantity to employ. After being weighed out into a 400-cubic centimetre flask, it is treated with a potash solution so as to give to the mixture a 10 per cent. strength. In the case of the solid proteids from one and a half to two grammes and of dried blood three grammes may be taken. After thorough drying the material requires to be brought to a minutely divided state in order to secure full action of the chemical agent, which is an essential point. The reduction is effected by rubbing down in a mortar and passing through a fine metallic gauze sieve (90 to the linear inch). The weighed product is next treated with about 35 cubic centimetres of a 10 per cent. potash solution and subjected to boiling for half an hour under a reflux condenser in a flask of about 400 cubic centimetres capacity which provides against the inconvenience arising from the foaming that occurs. The contents of the flask are now poured into ten volumes of methylated spirit (95 per cent.) contained in a tall beaker and the flask is rinsed out with more spirit. The beaker is allowed to stand till the following day for the precipitate to settle. Filtration is next performed through asbestos arranged in a Gooch's perforated porcelain crucible adapted to an exhausting filter pump. Much time is saved by decanting the clear liquid and filtering this first, as the precipitate, on being poured on to the filter, clogs it and impedes filtration. After washing with spirit the next step is to subject the precipitate, which contains the proteid carbohydrate in the amylose form, to the hydrolysing influence of a boiling mineral acid. Hydrochloric acid of 5 per cent. strength is used for this purpose. The precipitate is washed with the hot acid, which dissolves it, from the asbestos plug in the crucible into the beaker originally used for precipitation, the last traces being removed by repeatedly pressing out the liquid from the asbestos by squeezing it with a glass rod against the side of the crucible. After heating the acid solution in the beaker to the boiling point to get rid of the adhering traces of spirit the liquid is transferred to a small flask (about 150 cubic centimetres) into which the washings of the beaker are also poured. The contents of the flask, measuring about 50 cubic centimetres, are next boiled for one and a half hours under a reflux condenser. When cold the liquid is nearly neutralised with potash, clarified by boiling with hydrated alumina[2] made to 75 cubic centimetres and thrown on to a dry filter. The filtrate is rendered faintly alkaline by the addition of a drop or two of strong alkali, filtered from any slight precipitate, and titrated with the ammoniated cupric test. The liquid for titration should be of a pale sherry colour and should give no biuret reaction on being titrated. Summarily stated the process consists of breaking down the proteid with potash, precipitating the liberated amylose carbohydrate by means of spirit, converting into sugar, and estimating this in the usual way.

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[2] Vide Pavy: The Quantitative Estimation of Sugar in Blood,' Journal of Physiology, vol. xx., 1896.

Estimation of Proteid Carbohydrate by the Hydrochloric Acid Process.

In the potash process when blood is taken it is not essential that it should be first of all treated with spirit to remove the sugar as the potash exerts a destructive action upon it and in this way gets rid of it. Such is not the case with the acid process and before treatment with the acid the removal of the sugar present must be effected. The blood (say 30 grammes) should be extracted and washed with methylated spirit with the use of a press as in the process adopted for the quantitative determination of sugar in blood. The coagulated mass obtained is treated with strong hydrochloric acid and allowed to stand overnight to become thoroughly liquefied, then diluted down to a 10 per cent. strength, having reckoned for 100 cubic centimetres volume as the quantity to work with, and afterwards boiled under a reflux condenser for one and a half hours. A dark-coloured liquid is obtained containing the nitrogenous products of disintegration as well as the sugar. The point now to be attained is to remove the nitrogenous products and to leave the sugar. Here a certain amount of difficulty is encountered on account of the soluble nature of the principles to be dealt with. Phosphotungstic acid is the best precipitant. A 20 per cent. solution is added till it no longer gives a precipitate. The resulting admixture is heated to boiling for the purpose of facilitating subsequent filtration by causing the precipitate to assume a more granular form. What is next wanted is to remove the phosphotungstate compound but as this is not completely insoluble, and particularly when hot, the process is more lengthy than it would otherwise be and at the same time steps must be taken to provide as far as possible against loss of sugar by its remaining attached to the precipitate. Hence filtrations (best on what is known as a glass filter plate), rubbing down in a mortar, and adequate washing are required to be performed. Subsequently the liquid obtained after being nearly neutralised with sodium hydrate is evaporated down over a water bath to a small bulk and allowed to stand overnight for settlement out to occur. Filtration is now conducted with asbestos, a Gooch crucible, and an exhausting pump, the washing being effected with a saturated solution of sodium chloride to prevent any phosphotungstate precipitate being taken up. The filtrate has now to be made slightly alkaline with sodium hydrate and as this is done a deep blue colour is developed. The colour that is developed might perhaps, without the employment of litmus or other such-like agent, suffice to indicate that alkalinity has been reached but in my own work it has not been relied upon for this purpose. On exposure to air the colour disappears and the disappearance is accelerated by passing air through the liquid. All that remains to be effected now is to bring to a known volume, as, for instance, 75 cubic centimetres, throw on to a dry filter, and titrate. When properly prepared the liquid is colourless and gives no biuret reaction on titration.

Having described the processes for quantitatively determining the proteid carbohydrate obtainable by the breaking-down action of potash and hydrochloric acid I will now proceed to deal with various products and to show how they stand under subjection to the treatment in question:—

Proteid Carbohydrate obtained by Cleavage with Potash and Hydrochloric Acid. (The figures in each case represent parts per 1000 with the carbohydrate expressed as glucose.)

Dried defibrinated blood (serum and corpuscles) from the horse.—The blood was defibrinated, poured into methylated spirit, the coagulum collected, pressed, washed with boiling spirit, dried, and powdered.

Cleavage by potash.		Cleavage by hydrochloric acid.
21·9	... ...	19·7
20·4	... ...	20·6
21·2	... ...	20·7

Dried plasma of horse's blood.—The blood on collection was treated with 1 per cent. strength of citrate of potash to prevent coagulation and centrifugalised. The plasma was afterwards dealt with in the manner described for the defibrinated blood.

Cleavage by potash.		Cleavage by hydrochloric acid.
25·8	... ...	25·6

Dried blood corpuscles.—The corpuscles were obtained by centrifugalising the citrated blood and washing with normal saline solution. They were then treated with spirit and subsequently prepared in the usual way. The first two sets of figures refer to horse's blood and the last two to cat's blood.

Cleavage by potash.		Cleavage by hydrochloric acid.
4·5	... ...	3·2
3·3	... ...	2·9
4·5	... ...	1·9
5·2	... ...	2·5

It is noticeable that the yield of proteid carbohydrate by the corpuscles is in striking contrast with that yielded by the other portions of the blood, the amount being quite of an insignificant character. It may be remarked with regard to the lower figures obtained after cleavage by hydrochloric acid in comparison with those after cleavage by potash that the bulky phosphotungstate precipitate, from the difficulty offered in thoroughly washing out the sugar, may have had something to answer for in connexion with the result. Looking at the relative yield from the defibrinated blood and plasma it is in accordance with what might be looked for in view of the presence of the corpuscles in the former and not in the latter case.

Serum globulin.—The colourless serum from horse's blood was treated with an equal volume of saturated ammonium sulphate solution. The precipitate was collected, treated with water to dissolve, and the globulin reprecipitated with ammonium sulphate. Water was again added to dissolve, and the globulin was now precipitated from the liquid by boiling. The coagulated globulin was afterwards washed with boiling water to remove the saline matter and then treated with boiling spirit. It was finally dried and powdered.

Cleavage by potash.		Cleavage by hydrochloric acid.
25·1	... ...	25·1
30·5	... ...	30·2

Serum albumin.—The filtrate from the serum globulin just dealt with was diluted with water and, after acidifying with acetic acid, heated to boiling. The coagulated albumin was collected, pressed, and adherent ammonium sulphate washed out with boiling water. After treatment with boiling spirit it was dried and powdered.

Cleavage by potash.		Cleavage by hydrochloric acid.
18·4	... ...	17·7
20·8	... ...	19·3

Globulin, it is thus seen, gives a higher yield of proteid carbohydrate than albumin, but this is all that can be said. Contrary therefore to a statement opposed to my original results, which I find is obtaining currency in print, albumin gives a notable yield.

Blood fibrin.—The clot from horse's blood was washed with water till practically colourless. It was then dehydrated with boiling spirit and afterwards dried and powdered:—

Cleavage by potash.		Cleavage by hydrochloric acid.
25·8	... ...	23·1

Egg Proteids.

The egg proteids, alike from the yelk and the white, do not materially differ as regards their yield of carbohydrate except in one instance—viz., ovomucoid, in which a very different state of things exists from that met with ordinarily. Not only in this instance is the yield of carbohydrate signally large but apparently it is derived from a double source—viz., from carbohydrate in the form of sugar as well as from carbohydrate in the amylose form. The matter will be subsequently discussed under the head of ovomucoid but I refer to it now as it probably affords the explanation of the difference in the results obtained from the crude material of the egg and the isolated proteid principles.

Crude egg yelk.—The egg yelk was treated with methylated spirit and the precipitate repeatedly boiled with fresh quantities of spirit with the view of getting rid of the major portion of the fat. The yelks were not completely freed from adhering white which may possibly account for the higher figures after the acid cleavage.

Cleavage by potash.	Cleavage by hydrochloric acid.
27·0	32·7
25·3	29·9
26·7	31·9
27·9	30·7

Egg vitellin.—Egg yelk was treated with an equal volume of saturated ammonium sulphate solution so as to bring to a state of half saturation. After being allowed to stand for some hours to settle out the precipitate was collected and boiled up with spirit and this process again gone through. Finally, the precipitate was washed with boiling water and subsequently dealt with in the usual way.

Cleavage by potash.	Cleavage by hydrochloric acid.
32·1	30·7

A second specimen was prepared by extracting [illegible] the egg yelk with ether to remove the [illegible] 10 per cent. sodium chl [illegible] esidue in [illegible] cipitating the [illegible] and precipitate was co [illegible] The pre- [illegible] then with boilin [illegible] water, finally again w [illegible] ter, and powdered. [illegible] ied and

Cleavage by potash.	Cleavage by hydrochloric acid.
29·0	25·6
30·0	27·7

Crude egg white.—Dry commercial egg albu [illegible] solved in a small quantity of water an [illegible] ethylated s [illegible] spirit and [illegible]

Cleavage by potash.	Cleavage by hydrochloric acid.
29·1	42·3
28·4	45·8

A second portion of the dry commercial egg albumin was dissolved in water, slightly acidified, and then boiled. The precipitate was collected, washed with boiling water, and afterwards dehydrated with spirit, dried, and powdered.

Cleavage by potash.	Cleavage by hydrochloric acid.	
27·9	44·6 42·6	Duplicates.
28·0	44·6 43·6	Duplicates.

A third product was obtained from the whites of fresh eggs treated in the same way as the last.

Cleavage by potash.	Cleavage by hydrochloric acid.	
27·2	44·0 48·7	Duplicates.

It will be noted in all these instances that the yield from the acid cleavage is considerably higher than that from the potash. The presumable explanation is contamination with ovomucoid which, as will be subsequently seen, yields much higher figures with the acid than with the potash cleavage. In the first set of instances given ovomucoid would be evidently carried down, as it is precipitable, like albumin, with spirit.

Crystallised ovalbumin.—The whites of fresh eggs were beaten up and mixed with an equal bulk of saturated neutral ammonium sulphate solution. After standing about 12 hours the slight precipitate (globulin) produced was separated by filtration and saturated ammonium sulphate solution was added to the filtrate until a slight permanent precipitate was produced. This was dissolved by the addition of a few drops of water and then one-fifth normal sulphuric acid was pipetted in drop by drop until the solution was just opaque. After 24 hours the crystalline precipitate was filtered off and recrystallised by solution in water and treatment with ammonium sulphate and sulphuric acid. The recrystallised product was dissolved in a large quantity of water, acidified with acetic acid, and coagulated by boiling. The coagulated albumin was collected, washed with boiling water, then with boiling spirit, and afterwards dried and powdered. Two preparations were made and analysed.

	Cleavage by potash.		Cleavage by hydrochloric acid.	
(i.)	26·2		25·0	
(ii.)	23·5 22·5	Duplicates	25·7 24·8	Duplicates.

Conalbumin.—This name has been applied[3] to a form of albumin found in the mother liquid after the separation of the crystallised ovalbumin. It is present in conjunction with ovomucoid. From the filtrate obtained after the removal of the crystallised ovalbumin, the conalbumin and ovomucoid were salted out by the addition of solid ammonium sulphate. On redissolving in water, acidifying, and boiling, the conalbumin was coagulated, whilst the ovomucoid remained in solution. The conalbumin was collected, washed with boiling water, and subsequently with boiling spirit.

Cleavage by potash.		Cleavage by hydrochloric acid.	
26·1 22·1	Duplicates.	34·1 36·9	Duplicates.

Ovomucoid.—The liquid from which the conalbumin had been separated by filtration was evaporated to dryness, whereby the ovomucoid was rendered gelatinous and insoluble in cold water. After repeatedly washing with cold water and boiling with spirit it was collected, dried, and powdered.

Cleavage by potash.	Cleavage by hydrochloric acid.
107·9	215·9

Ovomucoid obtained by another mode of preparation was also dealt with. Dry commercial egg albumin was dissolved in about 15 times its weight of water, acidified, and boiled in order to coagulate the albumin which was removed by filtration. From the clear filtrate [illegible] on the water-bath to a small bulk the [illegible] pitated by the addition of two volumes [illegible] After washing repeatedly with boiling [illegible] ed, dried, an[illegible] powdered.

	Cleavage by potash.	Cleavage by hydrochloric acid.
(i.)	59·1	150·9
	61·1	149·2
(ii.)	73·6	210·0
(iii.	43·9	133·0
	42·6	134·7
	33·4	119·0

Other specimens of ovomucoid were prepared from the whites of fresh eggs instead of commercial egg albumin. Five different samples were obtained and submitted to examination.

	Cleavage by potash.	Cleavage by hydrochloric acid.
(i.)	79·8	186·0
	76·9	215·0
(ii.)	110·0	220·3
	140·4	227·0
(iii.)	125·0	265·0
	141·5	260·0
(iv.)	123·3	217·0
(v.)	144·9	255·8
	145·5	220·9
	188·3	231·0

Osseo- and tendo-mucoid.—In order to ascertain if other mucoids correspond with ovomucoid in the relative results given after cleavage by potash and by acid steps were taken to obtain specimens of osseomucoid and tendomucoid. The process is a tedious and lengthy one but specific directions have been given by Hawk and Gies[4] for osseomucoid and by Cutter and Gies[5] for tendomucoid and these were strictly followed. At first it appeared as if there would be a want of success in obtaining the products but by perseverance in adjusting the acid to the requisite point to produce their precipitation from the half-saturated lime-water extracts that had been previously made and allowing time for the gelatinous form of precipitate produced to settle out the difficulty disappeared. These were the results obtained on subjecting them to the potash and the acid processes of treatment.

Osseomucoid.

Cleavage by potash.	Cleavage by hydrochloric acid.
46·1	107·6

Tendomucoid.

Cleavage by potash.	Cleavage by hydrochloric acid.
32·9	116·2

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[3] Osborne and Campbell. Journal of the American Chemical Society, vol. xxii., 1900

[4] American Journal of Physiology, vol. v., 1901.

[5] Ibid., vol. vi., 1901-02.

The same order of figures, it is seen, are observable as for the ovomucoid but the proportionate amounts are less. It may be that this arises from the presence of incidental impurity.

Have we not something in these results which speaks suggestively upon the point of the molecular constitution existing? With ordinary proteids the figures, except in the instances where ovomucoid is liable to be present as an impurity, are practically about the same after the potash and the acid cleavage. This may be expected to be the case if the carbohydrate is present in the proteid molecule in the amylose form. In this form it is simply liberated without being destroyed by the boiling potash and after being hydrolysed by the acid treatment it is estimated as sugar. With the acid cleavage the amylose carbohydrate would at the time of cleavage be hydrolysed into sugar and thus present itself at once in the form of sugar. In the case of the mucoids the figures after the potash cleavage are seen to be conspicuously less than those obtained after cleavage by the acid. The proteid molecule is regarded as consisting of a central intrinsic part with side-chain attachments; and sugar side chains, I think, have been hinted at if they have not been shown to exist. The facts before us seem to me to be suggestive of sugar side chains being present in the case of mucoids. Should they be so they would be acted upon and destroyed by the potash and not by the acid on being cleaved off and thus the smaller potash yield becomes intelligible. After boiling with 2 instead of 10 per cent. potash a much larger yield of carbohydrate is obtained. This appears to arise from some of the mucoid escaping being broken down. Whatever does so would fall like amylose carbohydrate when poured into spirit and on subsequent boiling with the acid cleavage would occur with attendant appearance of sugar.

I have been speaking of the proof afforded, by the agency of chemical breaking down action, of the presence of carbohydrate as a constituent of proteid matter. I will now speak of the information supplied in connexion with this point through quite a different channel and one which bears on action occurring within the living system. Phloridzin, a crystalline principle obtainable from the bark of the stem and root of the cherry and some other allied trees, is known to produce a strongly glycosuric effect when introduced into the system either by the alimentary canal or by intravenous or subcutaneous injection. The glycosuria produced by it differs from the glycosuria arising from other causes in not being due to antecedent hyperglycæmia. In ordinary glycosuric conditions the sugar of the urine is derived from sugar existing in the blood and filtering off with the urine. They are thus associated with hyperglycæmia and this bears a proportionate relation to the sugar elimination. In phloridzin glycosuria, however, no such relationship exists. Indeed, it was said at one time that there was less sugar than normal to be found in the blood. This, as a matter of fact, is not true and the statement depended upon the defective mode of analysis adopted. Some years ago I gave careful attention to the matter and published my results in a communication "On Phloridzin Diabetes" contained in the *Journal of Physiology*.[6] It was there shown that the sugar almost invariably stood somewhat above the normal. I shall revert to this subject in speaking of the mechanism of phloridzin glycosuria and give an explanation of the condition observed.

After intravenous and subcutaneous injections the glycosuria follows very speedily and may be very intense. In one of my experiments the urine contained 112 per 1000 of sugar 2 hours and 25 minutes after a subcutaneous injection. The blood in this case only contained a trifling excess of sugar—a state that could not possibly account for the elimination that occurred. The effect only lasts whilst there is phloridzin present to exert an action, but it may be renewed by a fresh administration. The result occurs in the absence of food. Even after prolonged fasting glycosuria has been found to have been produced. Everything points to the kidney as being the seat not merely of elimination as in other forms of glycosuria but of the production of the sugar and from the work that has been undertaken a relation has been noticed to exist between the nitrogen and sugar discharged. In the fed animal with a store of glycogen in the liver and other parts of the body the sugar is in high and irregular proportion to the nitrogen but by starvation it becomes reduced and is ultimately brought to a constant ratio. At first there is a discharge of the loosely combined carbohydrate existing in the system and whilst this is going on the sugar elimination bears an uncertain relation to that of the nitrogen, but subsequently, when the carbohydrate referred to has been swept away, the two become drawn from proteid disintegration and now the period of fixed relationship is reached. Assuming that this point has been arrived at and that the source of both the sugar and the nitrogen is the disintegrating proteid molecule the relationship between the two ought to afford a basis for calculating the proportionate yield of sugar by it. The nitrogen eliminated corresponds with a given amount of proteid disintegrated. In the dog when the condition is brought to proteid as the only source of the sugar and nitrogen eliminated the relation has been stated to stand at 3·8 of the former to 1 of the latter and upon this relationship the amount of sugar yielded works out at about 60 per cent. of the proteid disintegrated. The ratio of 2·8 to 1 has been more recently asserted[7] to constitute the correct D : N value. Calculating upon this basis the percentage of carbohydrate in proteid stands at about 44 instead of 60. Such is the proposition that has been advanced and it gives a vastly greater carbohydrate component part in the proteid molecule than is given by chemical destructive action. It is evident, however, that the conditions under which cleavage occurs are essentially different in the two cases, seeing that in the one the carbohydrate simply comes straight off, whilst in the other the opportunity exists for the occurrence of intra-molecular action. When carbohydrate enters a molecule rearrangements ensue and it may temporarily assume another grouping. There is abundant evidence to show that carbohydrate may enter a molecule and through re-groupings within may come out in the form of fat, and conversely fat may enter and carbohydrate be split off.

Up to the present I have been looking at the evidence in support of carbohydrate entering into the constitution of proteid from the side of cleavage action. There is another aspect, however, from which the matter may be regarded and this is from the side of construction.

A single instance may be taken to suffice for showing that carbohydrate is susceptible of being built into proteid. Yeast cells may be regarded as little masses of bioplasm and we only know of bioplasm in connexion with proteid as a basis. Placed in a nutrient medium the bioplasm grows and forms fresh bioplasm by incorporating into itself the molecules with which it is adapted to unite. Pasteur showed that yeast cells would grow, which means would form proteid, in a medium consisting of sugar, ammonium tartrate, the ash of yeast, and water. It may reasonably be here inferred that the sugar contributes to the formation of the proteid but no absolute proof of it is afforded seeing that the elements of the sugar—carbon, hydrogen, and oxygen—are also present in the ammonium tartrate. Ammonium nitrate, it has been found, may be substituted for the ammonium tartrate and when this is done the only source for the carbon entering into the constitution of the proteid is from the carbon existing in the sugar. Thus proof is furnished of sugar being turned to account in connexion with the construction of proteid. The other line of evidence adduced showed that carbohydrate, actually as such, enters as a component part into the proteid molecule. In my next lecture I shall deal with the conclusions to be drawn from a review of the knowledge that is now before us.

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[6] Journal of Physiology, vol. xx., 1896.

[7] Stiles and Lusk: American Journal of Physiology, vol. x., 1903.

The Vegetarian Congress.—From June 22nd to 24th the International Vegetarian Congress, convened by the Vegetarian Federal Union, was held at the Memorial Hall, Farringdon-street, London, when delegates were present from many parts of the world. Among the matters discussed were diet and physical deterioration, the selection and cooking of vegetables, and the ethical aspect of the movement. On the evening of the opening day a dinner consisting of 15 courses was held at the Holborn Restaurant, the object, apart from its social bearing, being to show the wide scope which vegetables offer for a variety of tasteful and nourishing dishes when combined with eggs, milk, butter, and cheese. On the whole, the tone of many of the speakers during the congress was less aggressive than is usual, but the spirit of antagonism to those who did not hold the same views as themselves was very obvious in some speakers.

The Cavendish Lecture
ON
DISEASE OF THE HEART.

Delivered before the West London Medico-Chirurgical Society on June 23rd, 1905,

By JAMES F. GOODHART, M.D., LL.D. ABERD., F.R.C P. LOND.,
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MR. PRESIDENT AND GENTLEMEN,—Destitute as I was when I received the invitation of your council of any idea of a subject in which to interest you for an hour to-night I turned to the titles of some of the former lectures and from them I gathered that all had been strictly clinical in their material and scope and so I determined that mine should be. The one that I have selected, "Disease of the Heart," seems rather a large order, as your secretary remarked, for a short hour but I may at once relieve your minds by saying that this is entirely due to a struggle with my title in which I was mastered and my purpose would, I think, be better expressed if without prejudice I might be allowed to put it in conundrum fashion, When is disease *not* disease? With this aim I shall have to speak of such commonplace subjects as the meaning of what are called functional murmurs, the position of the impulse and its indications, præcordial dulness, such departures from the normal action as intermission, palpitation, tachycardia, and bradycardia, and the bearing of some of these on the diagnosis and treatment of actual disease.

My subject having based itself upon my desire to be on common ground with every one of you I have confined myself almost exclusively to my own observations. I suppose I can hardly be accused of egotism if I assume that I should not have been asked to address a body of experienced men such as are here to-night if it had not been thought that the decades that bring me in sight of artificial teeth and gout waters, face massage, and other devices for postponing age, bring also a right to an opinion of my own, and that this opinion you want to hear. I am but re-telling a well-worn story that others have better told before, but from time to time it needs re-telling, particularly if the opinions are independently your own.

And, first, those murmurs with which I shall concern myself are all systolic. Many are basal, and of these some are over the aortic valves but more over the pulmonary and extending over the right ventricle and towards the apex. Some are loudest in the mitral area and when so they have a tendency, like the basal murmurs, to diffuse themselves in this case upwards round the nipple, to join the basal one, and the two often existing together the one merges into the other and it is difficult indeed to say if there be one murmur or two. Very often, however, there is a purely apical murmur which is heard in a series of separate whiffs or is intensified in whiffs. And these are clearly associated with inspiration. Two or three come in each inspiration as it rises to its acme and then cease again and these may be quite well heard at the angle of the scapula. They are most marked when the patient is nervous under examination and the heart more or less quickened. The murmur most probably *disappears* as the heart quiets down and in all cases it is then much diminished. In similar circumstances there often occur impurities of sound rather than definite murmurs; the first sound loses its cleanness and is converted into a murmurous or humming, or groaning or grunting prolongation, this being confined almost exclusively to the position of the impulse.

Lastly, and perhaps most common of all, there is another murmur, or the same murmur under a different aspect, again systolic and apical, but curving round it upwards towards the base and which has this peculiarity, that it is only brought out by making the patient lie down. The heart sounds, when examined with the patient standing or even sitting, are absolutely healthy, but put the patient on a couch and a more or less well-marked, often quite loud, systolic souffle, in character like that of mitral regurgitation, is developed round the apex. If a somewhat prolonged observation is made it will be found that the murmur varies considerably in intensity at different beats and tends on the whole to disappear after the position assumed has been maintained for some few seconds, or perhaps as much as a minute or two. Much more rarely I have heard a bruit develop when the patient rises, though there has been none when the body was recumbent. Foxwell speaks of this murmur as "the pulmonary murmur" and considers its position to be over the second and third left intercostal spaces. He alludes fully to this characteristic feature of production in the recumbent posture and explains it by stretching of the pulmonary artery under conditions of debility, and he has even known it to develop after the occurrence of heart strain.

If you make a practice of examining the heart of everyone that you see for the first time—no matter what the complaint—both standing up and lying down, I am quite sure that the frequency with which you will find this systolic or these systolic murmurs will surprise you; they are as common as moveable kidneys. These are the chief varieties of what are called "functional" murmurs. I would not say that they are all that occur. They are well known to anyone who has any sufficient opportunities for observation. What, however, is I think not even yet so well known as it ought to be, or allowed for in daily practice, is the *frequency* with which they occur even in healthy subjects, unless mere temporary nervous excitement be judged to be ill-health, and this *variability* in *form* both between one case and another and in the one case also between one moment and another. Their genesis has been discussed repeatedly and still forms a tempting bait in this respect.

Functional murmurs have ever been supposed to convey the indication that at any rate there is something wrong and mostly a blood change to be removed by the administration of iron. At one time or another the site of production has been supposed to be now the aorta; now the pulmonary artery; now the mitral or tricuspid valve; now outside the heart altogether. And he would be a bold man and a very beater of the air who would waste your time by attempting to combat any one of these assertions. At any rate I feel sure that each is true for appropriate cases, but I am concerned to insist that a proportion of them are produced at the mitral orifice; that any one of them may occur in man, woman, boy, or girl, examined, it may be, casually and in whom there need be no sign of any disease or even of disturbance of the action of the heart. I would add as not unimportant to my position that no one of them disappears in any permanent fashion by any means so readily as is perhaps tacitly implied rather than positively asserted.

Now it seems fair to argue that, being so often discovered haphazard, and associated, as they often are, with no symptoms, and being often called into being by a simple change of position of the body, they cannot be, at any rate in many cases, of first-rate importance, and I would venture to change the name of many of them from the old one of "functional" to that of "postural" murmurs. Yet such cases are often rejected at life offices; they are refused for the public services; they come from all quarters committed to the existence of organic heart disease. So common, indeed, are such cases that it is impossible to give even a summary of them, but I will single out a few that have specially interested me or have come across my path while I have been preparing this lecture. A common case is such as this. A tall overgrown nervous youth with a pulse of 104 is under examination. The dulness is decidedly ample over the left side of the chest inside the nipple and there is a diffused forcible impulse spread all over the second, third, fourth, and fifth spaces between the sternum and the left nipple. On auscultation there are a loud systolic murmur over the pulmonary valves, a thick second sound, and at the apex a loud systolic murmur that comes in whiffs as the inspiration rises and disappears absolutely as it wanes. What could sound worse than this description and the case can easily look grave to the examiner, but the signs need all to be seen with the individual as a background and then they are clearly of much less importance. Deduct the nervous excitement and the long narrow chest that cramps the lung and brings the boy's heart unusually to the fore, and then the character of the murmur points to the reasonable probability that the heart is a sound one.

Another case that interested me much at the time was that of a young man, aged 22 years, who, having passed into the Woods and Forests department three years before, was rejected at a final medical examination because he had disease of his heart. He was sent to me by

Mr. H. E. Giffard of Egham, because he could not find anything wrong. I examined his heart in all positions and am sure it was absolutely healthy. I was so convinced that the man must have been nervous under examination and that a mistake had been made that I wrote to the Under Secretary of State and he very kindly acceded at once to my request for a re-examination, but the board adhered to its original opinion and the candidate was again rejected on the ground that he had a valvular murmur that rendered him unfit for service in India. He had never had any trouble with his heart before nor has he had any since, for I heard of him not long ago and I am quite sure there was never anything more than the temporary murmur due to neuro-muscular excitement and I hold that a young man's prospects were unnecessarily placed in jeopardy by reason of ignorance of the character of this murmur.

Another case, a boy, aged nine years, whose father I had seen some years ago as he was dying from cerebral embolism after infective endocarditis, had pneumonia in March, 1904. It was slight and it quite cleared up but his medical attendant at school writes to the medical man at home: "There remains a rather interesting condition of heart or, what I think is quite possible, and more probable, a heart condition that was there before the pneumonia. I find that when lying down the apex beat is outside the nipple line, a distinct murmur can be heard, and the pulse is 80 and irregular. When standing up the apex beat is just inside the nipple line. I cannot hear a murmur and the pulse is 108 and regular. I found that these conditions altered directly he altered his position and however many times one tested." The writer attributes the whole condition to latent rheumatism as the boy had often had pains in his legs and arms and he adds that he had seen similar cases before. Very sagaciously, however, he did not commit himself in any way to the mother of the boy but passed on his impressions to the home medical man for further observation, whose subsequent remarks are equally pertinent. He notes that "when lying down the irregularity of action, as well as the loudness of the murmur, altered when the boy held his breath for a few seconds, the action being much steadier and the murmur less marked. There is nothing abnormal discoverable when he is standing up, even after exertion, such as running round the room twice. The beat is in the normal position and the action quite steady." "The interesting question is," says the medical man, "as to this being a temporary condition which the boy will grow out of; he has grown very rapidly of late. I have advised the mother not to allow the boy to bicycle or undergo any severe exertion for as long as there is a doubt if the condition be permanent or temporary, it being as well to be on the safe side." Advice, I may add, lest it should seem to any to be in excess of the demand, that I thoroughly endorse.[1]

Here is another case that is more doubtful and I give it especially because it is so, for I by no means wish to convey that all of them are free from difficulty. Many want watching and hasty opinions are always bad practice. The patient was a youth, aged 16 years, in whom a murmur had been noticed at the apex two years before I saw him, with some displacement of the impulse beyond the nipple line. It was first noticed after a five mile run. He had been carefully looked after and allowed to bicycle and to cricket a little, and he was much better than he had been; indeed, I think his parents thought too much was being made of his ailment, as they could not see that the boy was in any way incapacitated. But he wanted to go into the army and what were his chances of passing the medical examination became an important question. When lying down there was a systolic murmur, audible from the third rib to the left of the sternum, downwards by the side of that bone, curving round in the fifth space, and below the nipple up into the axilla, where it became much softer. When standing it became both variable in position and intensity. The impulse was forcible and diffused. I do not think this boy will pass into the army and I certainly should not quarrel with anyone for refusing him, or even if anyone were to say the heart were dilated, though I do not think it is; on the contrary, I believe the heart will prove a serviceable and a sound one as the framework of the boy's chest develops.

Once more, I saw last June a man in the army, aged 21 years. He had been sent home from India with this history. He was about to be placed under an anæsthetic for abscess in his foot and an examination of the heart showed the impulse in the normal position, but also in the epigastrium and over the right ventricle. The first sound was accentuated and was accompanied by a blowing systolic murmur over the tricuspid area. The remark appended is that the local signs are in favour of an organic lesion, but the improvement of the man's general health pointed to a functional murmur. I saw him with his then medical man a month or so after he arrived home and his symptoms were chiefly a rapid nervous action. I cannot now say if there was any murmur, but I considered it essentially a nervous heart, and that there was no occasion to be anxious about his future. We lost sight of him and he eventually went out to India again after six months' leave, and as soon as he started work and long and heavy marches he broke down again from, as he told me when I pressed him for definite symptoms, sheer exhaustion. And he was sent home "suffering from *valvular disease*, the effect of climate and duty," the *physical signs*, as recorded on his health sheet, being taken to indicate "organic mitral regurgitation with tricuspid insufficiency." But what do I find? When standing there is absolutely no abnormality of any kind. When recumbent the heart's action becomes cantering and there is an impurity of sounds both at the apex and the base. The real explanation of the case is that he has never as yet had the stamina required for the army, and under the stress of climate and duty he becomes played out not in the heart more than any other muscle, and as soon as he is off duty he recovers himself as he did on the former occasion.

Many a difficulty is there with these cases, and I cannot too strongly urge the necessity of taking a more liberal view of the power of disappearance of even well marked cardiac murmurs. There is no need to neglect them or even to make unduly light of them. We do not know and must wait and see. Such cases need watching and examining from time to time. It is easy to do this without committing one's self to any irrevocable diagnosis or prognosis until time has shown the way. And perhaps this applies with more especial force to childhood than to adult life. Pyrexial disturbances of all sorts are of the commonest of maladies up to ten or 12 years, and there is nothing more common during these attacks than for the first sound of the heart to develop a systolic murmur, in association with the excitement of the muscular action that is one of the common phenomena of fever. Clearly the heart in such cases requires to be kept under careful observation, lest anything escape us of permanent import to the integrity of the organ, but there is no need to excite the apprehensions of the parents. It is a feature of the febrile reaction of childhood and for the most part these bruits quite disappear as the fever subsides and the child recovers tone. In so important a matter as the question of the existence of endocarditis or valvular disease no one should precipitately commit himself to an opinion from which it will be difficult to extricate either himself or his patient. Let me illustrate this by a case. A child has had an attack of fever. A systolic murmur has developed and the heart is said to be affected, and the future sketched out in somewhat sombre light. The fat is all in the fire from the mention of heart disease and the necessity for prolonged rest. But the child was not ill, the temperature was not yet stable, and although admittedly there was a systolic murmur audible from time to time, and I think some little displacement of the impulse, I took a much more sanguine view, based upon the grounds I have already given, that the murmur was a variable one, being frequently entirely absent, and that it was also distinctly a postural one. But it was obvious that my opinion was neither expected nor acquiesced in and I should not be surprised if that child were still undergoing the harmful process of being shielded from his environment in every possible way because he labours under the suspicion of having disease of the heart.

From the question of murmurs I pass to the impulse of the heart or the position of the apex beat as it is more generally called and its meanings or indications. Upon this also far too much stress is laid as an indication of disease. The impulse has been described as having certain relations to the nipple and the fifth space, and I am far from attempting or wishing to question such a rudimentary fact, but it does not follow that if there be a departure from the normal in this respect it is so much the worse for the subject of the deviation. It is possible to live a healthy life with the apex beat outside the nipple and much more often so than some would seem to suppose. Why not? The heart is free to move within a considerable radius upon its suspensory ligaments at its base and we are dealing with the living nervous heart, with the heart in action, and there is much need for caution in forming conclusions with respect to an organ of this sort. The position of the heart's impulse depends in truth a good deal in the individual upon the shape of the chest, upon the condition of the lung, upon the rate of action of the heart, whether hurried or not, and it depends upon the true concurrence of the systole of the many individual muscle bundles that the heart contains. Thus, in small and long-chested people the heart is *likely* to be outside its normal limit and yet have no ill-meaning such as we are discussing. So, also, in those who expand their lungs badly, or who are nervous under examination, the impulse may be considerably outside the nipple line. I saw a child not so long ago in whom, although the heart was beating an inch beyond this limit, I could not find the slightest evidence of any disease. The child had been said to have heart disease but surely in the absence of all other evidence it was better to let the child live a healthy life and watch than to condemn it for one sign such as this. I think it is of some importance to insist that this concurrence of the muscle bundles in their systolic contraction is by no means habitually so perfect as we are in the habit of assuming. I cannot help thinking that temporary reflux at the mitral orifice is not uncommon from some such cause and that we are too much inclined to ascribe it to disease. We think of the systole as a sudden solid contraction of all the muscle of the ventricular wall, but observation and experience alike show that the departures from this precise action are by no means few and far between. Take the passing irregularities that come to so many after a meal, after drinking tea, after smoking, excitement, or fatigue. They are, of course, exceedingly common and when we watch the impulse in such we certainly find it now here, now there. It is clearly due to some want of synchronism in the individual fasciculi and it is not necessarily a matter of vital importance, although it is certainly one of physiological interest.

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[1] I am indebted to Dr. J. G. McLaunahan of Stonehouse, under whom this boy came at a subsequent period, for permission to make use of these notes.

Nor must I omit to say a word upon the value of dulness. Within limits rather jealously watched I should regard it as a safer sign of disease than the position of the impulse. But these limits must not be unduly stretched at the bidding of bias. Everyone knows that great increase of the size of the heart may be present without any increase of the dulness and, on the other hand, and it is with this that I am more concerned, there may be apparent increase of dulness without any increase of the size of the heart or of its cavities. Increase of the natural præcordial dulness often means no more than an altered relation of the heart to the chest wall or surface; a change in the pulmonary circulation or inflation and not in the heart itself. For example, in narrow-chested people of all ages and either sex, although women and children are its best illustrants, the dulness is often large from the simple fact that the lungs are small and not fully inflated and therefore the heart is much more extensively in contact with the chest wall in front; and under this condition in a nervous subject, to hark back to the former section, it is wonderful how masterful the beat seems to be, and there is indeed excuse for thinking the organ diseased, although it is in truth quite healthy. But then as regards dulness, I would have these remarks apply chiefly to dulness at the base and over the right side and very cautiously indeed, if at all, to the region of the apex. And obviously because the apex of the heart is covered in more or less by lung; lung and stomach tend to tilt it round and away at this part, as it lies trending from the surface. So that, as I have said, there may be a very large heart that is undiscoverable by percussion and a natural heart that may yet appear large. Even the spleen and the left lobe of the liver will get in the way of the determination of the position of the heart towards the apex; and as a result of long-continued observation I must say that I regard percussion in this region as of but little use and liable, if we depend upon it much, to lead to serious errors. I therefore find it impossible to agree with the conclusions of those who when they detect small differences in this area after baths and other forms of treatment ascribe it to a reduction in the size of the heart. It seems to me that the Nauheim treatment in appropriate cases—not all and sundry—has indeed the warranty of *results* but not that of any convincing topographical argument such as its advocates claim for it.

I come next to a number of cardiac disturbances which group themselves together under irregularities of action, and as an introduction to the subject I can hardly do better than recall to your minds all the vagaries of the action of the muscular fibre of the heart that you may hear in any one afternoon in the out-patient room under the excitement of examination. The noises, the plunges, the thuds, the sudden momentary stops that come; and have you not often wished, as I have done, when, as sometimes happens, the case staggers experience, and when, as I maintain, it is a more vital matter to be able to say positively that there is *no* disease than to say there *is*, for the happiness of a life is far more linked to the verdict, "You are *healthy*," than to that other, "You are not quite sound, and you must take care of yourself," for the one means a full life and the other a maimed one; have you never wished, I say, that some mechanical genius would invent such a cardiaphone as would enable one to examine that heart as its subject slept, untrammelled by his nerves? Any of these conditions may be evidence of serious organic disease and a breakdown in the near future, but in themselves they may be simple functional disturbances and of no great moment. Taken as they come I think it is not untrue to say that they may be regarded as trivial, or at any rate hopefully, until you have proved them to be otherwise. This applies to some more than to others. Bradycardia and pain are certainly the most ominous but either may be temporary only. Tachycardia in like manner is often a mere nerve excitement and of no importance, though in certain circumstances it is a most dangerous disease.

Let me say a few words about each of these separatel and perhaps as most common comes first an irregular intermitting heart. I know not which is the more commo or the less important. A heart that beats irregularly i time is very common as a transient thing. Again I ma advert to the power of the mere change of position of th body to effect this. Put a man on his back, from th erect position, and it will happen very often that th heart changes at once from a steady beat to a cantering or galloping action, or some new rhythm ma develop, such as two beats distinct, followed by tw feebler beats, or a more generally patternless irregularit may ensue. Those past middle age furnish the best examples at once of cardiac irregularity and of the difficult there is in judging of its value as a symptom. There is, of course, an irregularity that is associated with definite signs of defect, either muscular or valvular, and symptoms of failure in the circulation. I do not allude to that. The picture that comes before me is that of the man or woman of, say, from 45 to 60 years or more, who suddenly, perhaps, becomes conscious of a frequent full or choking sensation at the top of the sternum, or of indigestion. You examine and find the heart pirouetting behind the chest wall like a ballet dancer or a performance on the bagpipes to the tune of a Highland reel, if you could convert the idea of sound into that of motion. Such a condition as this has a special proneness to come on after food when the stomach is distended, or later when there is a tendency for the irregularity or intermission to be attended by the eructation of gas. It is clear that these conditions are often enough no matter of disease, for the attacks come on from time to time; they come and go quite suddenly; are absent often for weeks or months; between times there is no shortness of breath or other evidence of heart disturbance; and they are likely to be associated with the presence of uric acid in the urine There is plenty of evidence, therefore, that some fault of metabolism exists and therefore some temporary changes in the nutritive fluids. One may well doubt if several causes, each in its own degree, may not conduce to this overcharging of the furnaces, but so marked is the association with one or other stage of digestion that I cannot but think that many own immediately an abdominal origin; that they are caused through some waning influence on the part of the great ganglia of the abdominal nervous system. And perhaps this may throw some small ray of light upon one or two other maladies which, although we must call them disease, it is questionable whether *quâ* heart they are really so. Two are common; two are of pathetic interest, so swift, so tragic, is their ending. I will take them in their order—Graves's disease, angina pectoris, some forms of sudden death.

The first named comes properly next, as in effect it is a similar malady to that just described. It differs in no other way than that it is much more likely to be intractable and even permanent in some. No better illustration of the need for keeping separate disease and unnatural function could be given, for it will exist for years without producing evidence of disease and it therefore affords the best possible example of the never-say-die principle that is inherent in the heart and of the power of that organ to cope, and to cope successfully, with very adverse circumstances. Angina pectoris is not as happy in this respect, but it also has in some respects a similar history. It is well known that when anyone dies from this malady the coronary arteries are almost invariably found diseased, and although it has been a much vexed question the changes found have come to be considered as its cause. And I think Osler at any rate has stated that in *most* cases carefully examined during life some evidence of disease about the aorta will be found to exist. I demur to both opinions. Angina pectoris is common amongst us, if we are on the look out for the milder forms of it, but then it is not for me a sudden dreadful chest pang that comes and kills within, perhaps, a few hours. That is a rare variety. It is much more a paroxysmal twinge in the epigastrium or chest that almost invariably takes a man in walking, and apparently because he walks and because he walks up-hill, and moreover it is quite astonishing at how small an incline the anginal patient will shy. He stops and looks into a shop and within a few seconds the pain will have vanished and its departure is nearly always associated with the eructation of wind. So much is this the case that it is often mistaken for a simple indigestion, which is all the more plausible in that it is a common visitant when the walk is taken soon after a meal. It is constantly finding out the City man after his breakfast. It is also a malady that comes and goes, sometimes goes altogether, but is also more usually one of the most intractable of the neuralgiæ with which we are called upon to deal, and too often it has come to stay with intermissions. And here is the point: I have known it to last in two cases 20 years, and several times some, if not many, years, so long indeed that it seems impossible, at least unlikely, that the disease which was found at the last was indeed present at first. I have certainly examined these mild cases by the score without finding any trace of disease of the heart and all my later experience confirms me in saying what I said years ago in this respect, that the pain is best explained by regarding it as a neuralgia, or storm, that emanates from the great abdominal brain, although I was inclined at one time to regard it as a cramp of the heart.

It might perhaps be thought that the very generally accepted association of vascular tension with angina is adverse to this opinion and so I think it might be. But I have never yet accepted this view of angina pectoris for more than a small proportion of cases. I say—assured in my own mind that I am right, although it is contrary to the opinion of the most experienced men—that, as a rule, there is no increase of tension; I have had my finger on the pulse all through a spasm of angina many a time. Angina is if anything a disease of low tension, as is to be expected of a crushing pain that emanates from the pit of the stomach. A man is seized in the graver cases with a pain so bad that it kills him. He knows that he is dying and he dies—a quite uncommon fact in human experience—and we call it heart disease. Why? for my very life I cannot imagine. These are not the symptoms of heart disease. The symptoms of heart disease are mechanical, plus distress, not *agony*. And, moreover, the most extreme arterial tension may be quite free from pain. Or in the commoner cases perhaps the man goes to bed, wakes up with a pain—how bad can be never told—and he dies quite quietly. A sudden death from heart disease again we call it; but the untutored juryman in such a case comes nearer the mark, I fancy, when he returns his verdict as the "visitation of God," for is not the catastrophe much more like a lightning stroke that has rent the organism, stopped the machinery, and left no trace of the real cause behind it?

Of the usual explanation of sudden death when no obvious cause exists I have much the same to say. Such cases are not common, but they occur, and heart failure is now the prevailing diagnosis, I think; it occurs so often in the first columns of the *Times*. But I refuse to accept such a verdict when, as is surely no uncommon occurrence, the accused organ has been examined within quite recent times and to all outward seeming has been passed as healthy. Moreover, the heart has far too much grit in it to tumble down dead except under well-known and definite conditions.

Not much time remains to me to discuss the other two muscular derangements which I have included in my list—viz., tachycardia and bradycardia, or the runaway heart and the slow heart. The runaway heart we are in the habit of considering as a *nerve* effect—that is, as some disturbance of the regulating ganglion of the heart; but I doubt if this be so for the slow heart, in which there is at any rate a common tendency to assume degenerative changes in the muscular wall with all the necessary consequences. Yet the evidence is not wanting in many of these cases as the fault runs on that points the other way. One can readily understand that if the nervous energy of the heart should fail the muscle would probably lose its tone and dilatation of the wall would be very likely to follow. But that there is any appreciable change either in nerve or muscle in the first instance is surely disproved by its suddenness of onset, and sometimes (probably generally in the case of tachycardia) of its departure, good health remaining between whiles. I should not say that a preternaturally slow pulse was often sudden in its subsidence, although I have known it so, and perhaps especially in cases that have raised suspicions of gout. As a rule it occurs in people past 50 years of age, and when it comes it comes to stay. But there need be no symptoms of heart failure; it would seem more as if the generator were working badly, and by-and-by a switch fails, the circuit breaks, and dissolution comes. I incline towards some of such cases at any rate being bulbar in their origin. And as bearing on this point think of the heart, the pulse, of Addison's disease; the heart, the pulse, of severe abdominal injuries, and of other maladies I cannot now mention. The heart you can hardly hear, the pulse you can hardly feel, and yet withal a something about them quite different from the "weak" heart, the "weak" pulse of common parlance, which mean nothing at all. There can be no question of disease of the heart in these; they are suffering from a profound interference with the great nervous centres of animal life; the pitcher is broken at the fountain, and you know it, but yet it is past finding out. All these muscular anomalies, too often ascribed to fatty and other degenerative changes in the wall of the heart itself, link up together in one great group, whether they be slow hearts or quick hearts, or irregular hearts, or what not. They are all more or less an expression of, if you like, morbid, nervous agency, of which some perhaps are toxic and temporary, some neuritic and likely to be permanent.

Now I wonder whether you have followed my drift, for I must confess as I retrace my own thought that innocence and guilt seem to have been somewhat incongruously mixed; I must often have seemed to have been straining at a gnat and swallowing a camel. Nevertheless, this endeavour to bring within proper limits, and only this, the significance of some of the common forms of departure from the normal function of the heart is directed to the diagnosis, treatment, and prevention of real disease. Discussing a questionable case of heart disease the other day it was said to me: "There is no *disease*; the heart is only a little dilated and fatty." But what more disease can you ask? It points well my moral, which is this: that all these ailments which I have mentioned, ofttimes trivial, ofttimes transient, are too often but pegs upon which to hang a diagnosis of dilatation of the heart, and in the present day we make much too free use of this diagnosis. I regard dilatation as one of the worst of all the heart's diseases and to play with such a term is to play with a torpedo. Surely dilatation, save in exceptional circumstances, should be reserved for a disease that is associated with some series of definite symptoms, not made dependent, as over and over again it has been, upon the mere fact that the impulse can be felt to beat in the nipple line or even, perhaps a little beyond it, or some transient murmur has made its appearance. I must not go so far as to say that dilatation cannot exist without symptoms, for in the obscurity that surrounds sudden death it may be that it can; still it must surely be an exceptional occurrence and I think one ought to expect that even in slight degrees some of the signs of a failing circulation should exist and amongst these I emphatically do *not* include either giddiness or fainting. Disease of the heart seldom, if ever, causes either. I have often said this before but it is a point that still needs rubbing in.

If ever the history of medicine for this last decade or two should come to receive any exhaustive description I fancy that upon the Nauheim treatment for dilatation of the heart will rest a large share of responsibility in this matter for dwelling with such insistence upon the existence of dilatation when signs and symptoms other than dulness on percussion are completely, or almost so, in abeyance. The weaklings and sensitive about their health, always anxious about "the weak heart," have caught on, so to speak, and numbers have flocked to this place and to that for baths and exercises for the minor ailments which I have indicated who have been quite free from anything like dilatation and from any real disease. And the general trend on the part of the delicate has, I think, reacted upon us, and in our dread lest we make a mistake we have too often outrun all sobriety of judgment. And why do I make such a point of this? Because as I think it is a harmful thing for anyone to coddle his heart when there is no disease, and I think we are far too instrumental in aiding and abetting this. As regards dilatation I rather hope I see signs of a turn in the tide, for on two occasions of late patients have said to me spontaneously that they have got a distended, not a dilated, heart, and perhaps that was so. But there are other terms in general use that I like little better than this one of dilatation because they have come to mean too much. One of them is heart strain. Take the last case of this kind that has come before me. A young man, aged 25 years, has strained his heart, so he says, rowing three years ago, and has never been well since, his heart still running away if he does anything violent. But what is the truth about him? He is a six feet four inches specimen of the most weedy nervous humanity one could ask to see, with a spine like a corkscrew and lungs of course to match. His weight is only 10 stones 12 pounds. His heart is sound enough. It is no fair description to call this heart strain; lung strain would be more to the point if one needed to single out an organ; but a neglected sapling would better describe him. He is chained to a desk from ten to four, has three weeks' holiday once a year, and at night is a tag of the fringe of a great city. What is there of fitness in calling this disease of the heart? or heart strain? At any rate, if it be, the treatment for it, if it could be adopted, would be to send him rough-riding over a cattle ranch for a year or two to develop his muscular and bony frame—that is, more work for his heart and not less.

We must all have come across many similar cases, some even may be who have been condemned to long periods of inactivity because of one or other of these several conditions I have mentioned. But I doubt if rest is the proper treatment for such cases or if the heart should in any case be the subject of blame. My conviction is that if nothing were said about the heart, the patient calmed, kept quiet for a day or two, and then allowed gradually to resume his natural pursuits we should have far less of the months of cardiac trouble that are now, as I think, by no means uncommon.

A weak heart has served me as a text before now but it still flourishes as strong as, if not stronger than, ever. I should have no objection to the term if it were one devoted exclusively to letting down easily the man with real disease and of keeping life and hope within him. Such a use would, to my mind, be nothing but good and proper, but it is a very different matter when its chief purpose is to clothe a sound heart in the garb of a diseased one. A man with aortic regurgitation the other day wanted me to call his heart a weak one, and as I had already told him that he had a definite valvular defect I was willing to fall in with his humour, and to agree with him that his heart *was* decidedly "*weak!*" No harm was done there, but I by no means feel so accommodating when I am asked to call a heart weak when after careful examination I have found it healthy. I only know of two kinds of heart, the healthy and the diseased ones, and these weak hearts, like the dilated ones that I come across, are nearly always structurally sound. What are the symptoms of a weak heart? I know of none. And yet the use of the term leads either to a state of nervous dread, from which recovery is most difficult, or else to a life of luxurious idleness, which, by the enervation it causes, is likely sooner or later to be precedent to the end it would seek to avoid.

I cannot help thinking that in this day of what we must do and what we may not do, this abundant care for the well-being of the individual in all directions, we are getting somewhat sickly in our views of health, and we are in danger of assuming the existence of a tripe-like heart, and overlooking the energetic attributes of living muscle? The heart does not become dilated readily. On the contrary, it is equal, and more than equal, to all the ordinary, and many of the extraordinary, emergencies of life. Ay, and I am glad to insist upon much more than that, for, as you all well know, even under the stress of serious incurable disease its energy will keep its failing powers going for much longer than our poor forecast gives it credit and that sometimes it is all the better for being so called upon. I cannot give a better illustration of this than the case of mitral stenosis.

When we consider that nearly always the contraction of the valve must take years to mature and even when it is apparently fully come it may last, as I can say, for 20 years, the subject even living a fairly active and useful life, one may well carry the lesson to other forms of heart disease and deal a little less extravagantly with the principle of rest. I often see, as I think, this treatment pushed too far, or perhaps I ought rather to say that judging no man I often ask myself, Is this good or bad treatment? I see people absolutely forbidden to walk up hill or exercised—no, aired only—in a bath chair, or carried up and down stairs, or pinned to bed, and I feel inclined, with the world, the flesh, and the Devil of my earlier years, to renounce them all. I daresay I am wrong, but it is seldom indeed that I order anyone to be carried upstairs. It should be reserved for well considered emergencies that seldom come, and Oertel's suggestion of graduated exercise up hill I believe to be a most valuable one, provided that it is taken very slowly and with the mouth open. In this frame of mind one will make mistakes. I sadly and sorrowfully admit it. Indeed, in the mood of the great Napoleon, I must say I have been mistaken so often I no longer blush for it and, no doubt, after having given a positive opinion in favour of a sound heart a sudden death will now and again come to torture you and as it were to make you hesitate in the course marked out. Such things may well quicken our perception and go to render our judgment more keen. But none the less I am sure of this, that we do far more good in our day by pronouncing people sound, if out of health, and by sending them forth with strengthened hope, than by keeping them in the chains of uncertainty and nervous dread, than which nothing can be more crushing to the utility of a life or more harmful to the chance of regaining health.

Years ago there was a discussion at one of the societies upon aneurysm of the aortic arch, and I, having made the remark that it was practically an incurable disease, as judged from the evidence of the post-mortem room and the museums, and so it is, Sir William Broadbent promptly and felicitously retorted that the post-mortem room was not the place to look for cures! I was quick to see then that what seemed an obvious truism did but dissemble the truth, but to-day and here I am older, and I now see that other face with fuller meaning, which then perhaps I slighted. And so I have availed myself of the honour you have done me to discourse to-night in other terms upon the buoyancy of life and to preach that it is not well to seek too much for the dead amongst the living. To ask you to accept my opinions would be the last thing that I would do but I may ask you to think them over and weld anything that may be agreeable thereto with your own experience.

THE REACTION OF PHENYLHYDRAZIN WITH OTHER SUBSTANCES THAN DEXTROSE OCCURRING IN THE URINE.[1]

BY P. J. CAMMIDGE, M.B. LOND., D.P.H. CANTAB., &C.

THE application of phenylhydrazin as a reagent for th detection of sugar in the urine marked an epoch in the investigation of glycosuria and allied conditions; for not onl is it much more delicate than any test previously employed but it is unaffected by other substances such as creatin creatinin, hippuric acid, homogentisic acid, and excess o uric acid or urates, as met with in human urine, that ar liable to give rise to difficulties when most other method of detecting sugar are relied upon. This reagent has als the advantage of allowing the various forms of carbohydrate to be distinguished. This is a matter of som importance, for although dextrose is undoubtedly the commonest sugar met with in the urine, there is considerabl evidence to show that other forms of carbohydrate an allied substances occur more frequently than has been supposed and that their presence is associated with various abnormalities of metabolism. As more detailed attention is paid to the investigation of the urine in cases of supposed diabetes and some diseases in which glycosuria is likely to occur, our knowledge of the true significance of these rarer forms will be increased and possibly at the same time our information as to the mechanism of normal carbohydrate metabolism may also be added to. A brief survey of the more important characters of the phenylhydrazin compounds which may be derived from the urine may be of some service. The test is now frequently employed clinically, but it is not often that the investigation is carried further than the preparation of the osazone crystals and it is probable that much valuable information is missed in consequence.

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[1] A paper read before the Royal Medical and Chirurgical Society o June 6th, 1905.

The method of performing the phenylhydrazin test described by von Jaksch has been much modified by subsequent writers and, since the physical conditions under which it is carried out materially affect the result, it will be necessary to refer to the chief variations proposed. Von Jaksch originally recommended[2] that 50 cubic centimetres of the urine to be tested should be mixed with two grammes of sodium acetate and from one to two grammes of phenylhydrazin hydrochloride, and that the mixture be heated in a water bath for from 20 minutes to half an hour. If glucose is present the osazone then separates out on cooling as an amorphous or crystalline deposit of a yellow or reddish colour. If amorphous, the precipitate can be recovered in a crystalline form by dissolving it in hot alcohol, diluting the solution with water, boiling to expel the alcohol and then cooling. This method of performing the test takes time and requires the use of special apparatus which is not always available. To obviate these difficulties and render the reaction convenient for clinical use it has been suggested[3] that 0·5 gramme of phenylhydrazin hydrochloride and 1·5 grammes of sodium acetate should be dissolved by gentle heat in a few cubic centimetres of water in a test-tube and then 5 to 10 cubic centimetres of the urine added. The mixture is brought to the boiling point and maintained there for three minutes with strong and five minutes with weak solutions of sugar. The test-tube is then set aside to cool and the deposit examined for osazone crystals in five or ten minutes. Some authorities, following E. Fischer,[4] have preferred to use phenylhydrazin and not the hydrochloride but it has the disadvantage of not keeping well. A knife-point of sodium acetate is added to 10 cubic centimetres of the urine, then from one to two cubic centimetres of 10 per cent. acetic acid, and five drops of pure phenylhydrazin introduced. The mixture is heated in the water bath or over the free flame in the same way as when the hydrochloride is employed. A recent modification of this method suggested by Kowarski,[5] which gives very satisfactory results and is more delicate, consists in mixing five drops of pure phenylhydrazin in a test-tube with ten drops of acetic acid, gently shaking and then adding about one cubic centimetre of a saturated solution of sodium chloride. To the solid mass that forms are added from three to five cubic centimetres of the urine and the test-tube is heated in the free flame for two minutes after its contents begin to boil. On cooling the osazone crystals separate from urines containing over 0·2 per cent. of sugar in one minute and from weaker solutions in about five minutes.

In whichever way the test is carried out a difficulty occasionally arises from the formation of a crystalline phenylhydrazin compound of glycuronic acid which is liable to be mistaken for the osazone of a sugar It has been stated[6] that prolonged heating tends to obviate this source of error, the glycuronic acid compound being precipitated on cooling as a brown amorphous mass and not in the crystalline form. In the examination of 100 normal urines I sought to test the truth of this statement and found that when heated in the water bath for an hour four of them showed a crystalline deposit, while by boiling in the free flame for five minutes six specimens gave a positive result. Using the same methods but shortening the period of heating to 20 minutes and two minutes respectively exactly the same results were obtained, so that the mere time or method of applying the heat cannot be relied upon to differentiate glycuronic acid from the sugars. In addition to dextrose, the sugars lævulose, lactose, maltose, isomaltose, and the pentoses, arabinose and xylose, have been described as occurring in the urine and forming compounds with phenylhydrazin. Glycuronic acid, as I have already mentioned, also forms a compound with this substance and exceptionally combinations with acetone, aceto-acetic acid, oxalic acid, and in very concentrated urines with uric acid may also be encountered. As human urine is relatively poor in uric acid, the last named does not call for further remark. The acetone compound occurs as needles which melt to oily globules at 16° C., while the oxalic acid salt separates as insoluble, glancing, colourless plates which melt at from 172 to 173° C. The phenylhydrazin compounds of the remaining substances possess certain physical and chemical characters by which they can be more or less readily differentiated. The chief of these are: (1) the rate of osazone formation; (2) the microscopical characters of the crystals; (3) the solubilities of the osazones in various reagents; (4) the melting points of the purified products; and (5) the percentage content of nitrogen.

1. The rate of osazone formation is a point of considerable importance in determining the variety of sugar present in a particular solution, for, as Marquenne has shown,[7] this is a property which has very characteristic variations for the different carbohydrates. Under experimental conditions, with solutions of definite strength, exact time-limits for the appearance of the osazone can be laid down. Although this is not feasible with such a liquid as urine, where the proportion of sugar present is unknown, valuable information can be obtained by observing the conditions and rate of osazone formation. The compound formed by dextrose and lævulose separates from the hot solution after a comparatively brief interval, the former in most cases with characteristic suddenness. The osazones of maltose, lactose, and the pentoses only form after much more prolonged heating and although crystals of pentosazone may eventually separate from the hot solution, maltosazone and lactosazone never appear until the fluid cools, no matter how long it may be boiled. In my experience the rapid method of performing the phenylhydrazin test gives a reaction with all sugar when ten cubic centimetres of the urine are used and the heating is continued for at least five minutes. In the water bath, however, even an hour is not sufficient to obtain a satisfactory yield with maltose, lactose, and pentose, an hour and a half or even two hours being required to demonstrate their presence satisfactorily, especially when the solution is weak. Those who prefer to use the water-bath method, therefore, and limit its time of application to 15 or 30 minutes can only expect to demonstrate dextrose or the more readily precipitated sugars and possibly also any glycuronic acid compounds that may be present in the urine.

2. Microscopical examination of the crystalline deposit obtained after treatment with phenylhydrazin shows certain differences in the characters, size, and arrangement of the crystals which are suggestive. The large yellow needles arranged in sheaves and rosettes yielded by dextrose are well known. Lævulosazone resembles glucosazone, but there is less tendency to rosette formation and the crystals are usually somewhat longer and more slender. Lactosazone occurs as spherical masses of crystals resembling a shaggy yellow chrysanthemum. At the periphery the separate crystals can be distinguished and are seen to be slender, flexible, and hair-like, but in the centre they are felted together into a brown semi-opaque mass. In preparations made by the rapid method the individual crystals are usually not as distinct as those formed after prolonged heating in the water-bath, the appearance presented being that of a brown central boss surrounded by a light yellow halo showing "fine" radial striations. The crystals of maltosazone are short, stiff, and sword like, and are arranged in small rosettes when prepared by the water-bath method. Preparations made by heating in the free flame are less characteristic, consisting of narrow crystals grouped in small bushy sheaves. Isomaltose yields masses of aggregated flexible needles of a golden-yellow colour, mostly arranged in spheres. The pentose crystals are silky, tangled, curved needles, generally arranged in rosettes. The shape, size, and arrangement of the crystals are influenced to a certain extent by the

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on percussion are completely, or almost so, in abeyance. The weaklings and sensitive about their health, always anxious about "the weak heart," have caught on, so to speak, and numbers have flocked to this place and to that for baths and exercises for the minor ailments which I have indicated who have been quite free from anything like dilatation and from any real disease. And the general trend on the part of the delicate has, I think, reacted upon us, and in our dread lest we make a mistake we have too often outrun all sobriety of judgment. And why do I make such a point of this? Because as I think it is a harmful thing for anyone to coddle his heart when there is no disease, and *I think* we are *far too instrumental in aiding* and abetting this. As regards dilatation I rather hope I see signs of a turn in the tide, for on two occasions of late patients have said to me spontaneously that they have got a distended, not a dilated, heart, and perhaps that was so. But there are other terms in general use that I like little better than this one of dilatation because they have come to mean too much. One of them is heart strain. Take the last case of this kind that has come before me. A young man, aged 25 years, has strained *his heart, so he says, rowing* three years ago, and has never been well since, his heart still running away if he does anything violent. But what is the truth about him? He is a six feet four inches specimen of the most weedy nervous humanity one could ask to see, with a spine like a corkscrew and lungs of course to match. His weight is only 10 stones 12 pounds. His heart is sound enough. It is no fair *description to call this heart strain*; lung strain would be more to the point if one needed to single out an organ; but a neglected sapling would better describe him. He is chained to a desk from ten to four, has three weeks' *holiday* once a year, and at night is a tag of the fringe of a great city. What is there of fitness in calling this disease of the heart? or heart strain? At any rate, if it be, the treatment for it, if it could be adopted, would be to send him rough-riding over a cattle ranch for a year or two to develop his muscular and bony frame—that is, more work for his heart and not less.

We must all have come across many similar cases, some even may be who have been condemned to long periods of inactivity because of one or other of these several conditions *I have mentioned.* But I doubt if rest is the proper treatment for such cases or if the heart should in any case be the subject of blame. My conviction is that if nothing were said about the heart, the patient calmed, kept quiet for a day or two, and then allowed gradually to resume his natural pursuits we should have far less of the months of cardiac trouble that are now, as I think, by no means *uncommon.*

A weak heart has served me as a text before now but it still flourishes as strong as, if not stronger than, ever. I should have no objection to the term if it were one devoted exclusively to letting down easily the man with real disease and of keeping life and hope within *him.* Such a use would, to my mind, be nothing but good and proper, but it is a very different matter when its chief purpose *is to clothe* a sound heart in the garb of a diseased *one.* A man with aortic regurgitation the other day wanted me to call his heart a weak one, and as I had already told him that he had a definite valvular defect I was willing to fall in with his humour, and to agree with *him that his* heart *was* decidedly "*weak!*" No harm was done there, but I by no means feel *so accommodating* when I am asked *to call a heart* weak when after careful examination I have found it healthy. I only know of two kinds of heart, the healthy and the diseased *ones*, and *these* weak hearts, like the dilated ones that I come across, are nearly always structurally sound. What are the *symptoms of a weak heart?* I know of none. And yet the use of the term leads either to a state of nervous dread, from which recovery is most difficult, or else to a life of luxurious idleness, which, by the enervation *it causes, is* likely sooner or later to be precedent to the end it would seek to avoid.

I cannot help thinking that in this day of what we must do and what we *may not* do, this abundant care for the well-being of the individual in all directions, we are getting somewhat sickly in our views of health, and we are in *danger* of assuming the existence of a tripe-like heart, and overlooking the energetic attributes of living muscle? The heart does not become *dilated readily.* On the contrary, it is equal, and more than equal, to all the ordinary, and many of the extraordinary, emergencies of life. Ay, and I am glad *to insist* upon much more than that, for, as *you all* well know, *even under the stress of serious* incurable disease its energy will keep its failing powers going for much longer than our poor forecast gives it credit and that *sometimes it is* all the better for being so called upon. I cannot give a better illustration of this than the case of mitral stenosis.

When we consider that *nearly always* the contraction of the valve must take years to mature and even when it is apparently fully come it may last, as I can say, for 20 years, the subject even living a fairly active and useful life, one may well carry the lesson to other *forms of heart disease* and deal a little less extravagantly with the principle of rest. I often see, as I think, this treatment pushed too *far,* or perhaps *I ought* rather to say that judging no man I often ask myself, Is this good or bad treatment? I see people absolutely forbidden to walk up hill or exercised—no, aired only—in a bath chair, or *carried* up and down *stairs,* or pinned to bed, and I feel inclined, with the world, the flesh, and the Devil of my earlier years, to renounce them all. I daresay I am wrong, but it is seldom indeed that I order anyone to be carried upstairs. It should be reserved for well considered emergencies that seldom come, *and Oertel's suggestion of graduated exercise* up hill I believe to be a most valuable one, provided that it is taken very slowly and with the mouth open. In this frame of mind one will make mistakes. I sadly and sorrowfully admit it. Indeed, in the mood of the great Napoleon, I must say I have been mistaken so often I no longer blush for it and, no doubt, after having given a positive opinion in favour of a *sound heart a sudden death will now and again* come to torture you and as it were to make you hesitate in the course marked out. Such things *may* well quicken our perception and go to render our judgment more keen. But none the less I am *sure* of this, that we do *far* more good in our day by pronouncing people sound, if *out* of health, and by sending them forth with strengthened hope, than by keeping them in the *chains of uncertainty and nervous dread, than* which nothing can be more crushing to the utility of a life or more harmful to the chance of regaining health.

Years ago there was a discussion at one of the societies upon *aneurysm* of the aortic arch, and I, having made the remark that it was practically an incurable disease, as judged from the evidence of the post-mortem room and the *museums,* and so it is, Sir William Broadbent promptly and felicitously retorted that the post-mortem room was not the place to look for cures! I was quick to see then that what seemed an obvious truism did but dissemble the truth, but to-day and here I am *older* and I *now see that other face with fuller meaning,* which then perhaps I slighted. And so I have availed myself of the honour you have done me to discourse to-night in other terms upon the buoyancy of life and to preach that it is not well to seek too much for the dead amongst the living. To ask you to accept my opinions would be the last thing that I would do but I may ask you to *think them* over and welcome *anything that* may be *agreeable thereto* with your own experience.

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In whichever way the test is carried out a difficulty occasionally arises from the formation of a crystalline phenylhydrazin compound of glycuronic acid which is liable to be mistaken for the osazone of a sugar It has been stated[6] that prolonged heating tends to obviate this source of error, the glycuronic acid compound being precipitated on cooling as a brown amorphous mass and not in the crystalline form. In the examination of 100 normal urines I sought to test the truth of this statement and found that when heated in the water bath for an hour four of them showed a crystalline deposit, while by boiling in the free flame for five minutes six specimens gave a positive result. Using the same methods but shortening the period of heating to 20 minutes and two minutes respectively exactly the same results were obtained, so that the mere time or method of applying the heat cannot be relied upon to differentiate glycuronic acid from the sugars. In addition to dextrose, the sugars lævulose, lactose, maltose, isomaltose, and the pentoses, arabinose and xylose, have been described as occurring in the urine and forming compounds with phenylhydrazin. Glycuronic acid, as I have already mentioned, also forms a compound with this substance and exceptionally combinations with acetone, aceto-acetic acid, oxalic acid, and in very concentrated urines with uric acid may also be encountered. As human urine is relatively poor in uric acid, the last named does not call for further remark. The acetone compound occurs as needles which melt to oily globules at 16° C., while the oxalic acid salt separates as insoluble, glancing, colourless plates which melt at from 172 to 173° C. The phenylhydrazin compounds of the remaining substances possess certain physical and chemical characters by which they can be more or less readily differentiated. The chief of these are: (1) the rate of osazone formation; (2) the microscopical characters of the crystals; (3) the solubilities of the osazones in various reagents; (4) the melting points of the purified products; and (5) the percentage content of nitrogen.

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2. Microscopical examination of the crystalline deposit obtained after treatment with phenylhydrazin shows certain differences in the characters, size, and arrangement of the crystals which are suggestive. The large yellow needles arranged in sheaves and rosettes yielded by dextrose are well known. Lævulosazone resembles glucosazone, but there is less tendency to rosette formation and the crystals are usually somewhat longer and more slender. Lactosazone occurs as spherical masses of crystals resembling a shaggy yellow chrysanthemum. At the periphery the separate crystals can be distinguished and are seen to be slender, flexible, and hair-like, but in the centre they are felted together into a brown semi-opaque mass. In preparations made by the rapid method the individual crystals are usually not as distinct as those formed after prolonged heating in the water-bath, the appearance presented being that of a brown central boss surrounded by a light yellow halo showing "fine" radial striations. The crystals of maltosazone are short, stiff, and sword like, and are arranged in small rosettes when prepared by the water-bath method. Preparations made by heating in the free flame are less characteristic, consisting of narrow crystals grouped in small bushy sheaves. Isomaltose yields masses of aggregated flexible needles of a golden-yellow colour, mostly arranged in spheres. The pentose crystals are silky, tangled, curved needles, generally arranged in rosettes. The shape, size, and arrangement of the crystals are influenced to a certain extent by the

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manner in which the test is carried out and by the rate of cooling, so that not only is some experience of typical preparations required in forming an opinion but the physical condition under which the sample under examination was prepared must also be taken into account. In some cases the crystalline form can or[illegible] after the specimen has been [illegible]

3. The osazones can be di[illegible] by their solubilities. Thus, [illegible] in water at 60° C., but de[illegible] One part of lactosazone diss[illegible] water, while maltosazone is [illegible] to 75). Isomaltose dissolves 1 part in 4 of water at 100° C. I have found that the rate of solution of the osazones in dilute sulphuric acid is of some value in distinguishing the phenylhydrazin compounds of dextrose and lævulose from those of other carbohydrates. On irrigating a preparation of the latter with a 33 per cent. solution of the acid the crystals turn brown and dissolve rapidly, while dextrosazone and lævulosazone only slowly assume a brown colouration and take several minutes before they disappear. All the osazones are soluble in hot 50 per cent. alcohol and advantage is taken of this fact to prepare them in a pure form.

[illegible] the crystals obtained from urine by [illegible]on is one of their most useful and [illegible] The product employed for the purpose must, however, be pure, or doubtful and misleading results will follow. Thus, the melting point of pure dextrosazone is from 204° to 205° C. but the impure crystals obtained directly from the urine generally melt somewhere between 173° and 194° C. Lævulosazone melts at the same temperature as dextrosazone. The melting point of the phenylhydrazin compound of lactose is about 200° C. and of maltose from 206° to 207° C. Isomaltose begins to form drops at from 140° to 145° C., melts at from 150° to 153° C., and blackens at 200° C. The osazone of the pentoses in a pure form melts at 160° C., but as obtained from the urine the melting point lies between 156° and 158° C. As the osazones undergo decomposition on prolonged heating it is necessary that the temperature should be rapidly raised at first and then gradually increased as the point of fusion is approached, or charring of the specimen may obscure the change of state.

5. The formula of the osazones formed by the monosaccharides dextrose and lævulose is $C_{18}H_{22}N_4O_4$, while that of the disaccharides lactose, maltose, and isomaltose is $C_{24}H_{32}N_4O_9$. Hence the former may be expected to yield 15·64 per cent. and the latter 10·76 per cent. of nitrogen. In practice slightly lower readings are found to be the rule, about 15·58 per cent. being obtained for dextrose and lævulose and 10·67 per cent. or thereabout for the disaccharides. The percentage of nitrogen contained in the pentosazones is 17·07, as the formula is $C_{17}H_{20}N_4O_3$. By determining the percentage of nitrogen in an osazone it is therefore possible to decide to which of these three classes of carbohydrate the sugar belongs. A satisfactory determination is, however, only possible when a sufficient amount of the pure product and the necessary apparatus are available for a combustion experiment, as Kjeldahl's process is useless for the purpose, the separation of the nitrogen not being complete.

Consideration of the properties of the compound that a sugar forms with phenylhydrazin therefore enables one to distinguish between all the recognised varieties occurring in the urine save only dextrose and lævulose. Here reliance must be placed on other tests, such as the polariscope, Seliwanoff's test, and the reaction with methyl-phenyl-hydrazin. It is evident, however, that unless special care is taken the rarer forms of carbohydrate may readily be overlooked, especially if only small quantities are present, and that in some instances the method usually employed for demonstrating glucose will not suffice to reveal all that a more extensive use of the test would teach. It is consequently not surprising that comparatively little is known as to the occurrence in the urine and real significance of other varieties of sugar than dextrose.

Recent research has shown that lævulose is often present in diabetes along with dextrose, and it has also been described as occurring alone in mental depression, melancholia, and sleeplessness. Lactose is present in the urine of a considerable percentage of women during the puerperal period and is most marked when the breasts are gorged. Sucking infants with gastro-intestinal catarrh are also said to pass lactose in their urine occasionally. Hitherto maltose has only been met with in a few cases of disease of the pancreas and, so far as is known at present, its occurrence is confined to this class of case. Unfortunately, maltosuria is by no means a constant [illegible] and cannot therefore be reli[illegible] In an examination of 245 sp[illegible] disease of the pancreas by [illegible] have only met with two in [illegible] cha[illegible] for [illegible] deposit of crystals, probably also maltosazone, was given. One of the former was a patient in whom an operation for stone in the common duct with chronic pancreatitis had been performed four years previously. Isomaltose is prepared artificially along with maltose, in the reversion of glucose by the action of malt diastase, pancreatic juice, saliva, or blood serum on starch. It has been found in small quantities in apparently normal urine and up to the present it has not been determined whether its presence is associated with any particular metabolic disturbance or if an excess occurs under pathological conditions. Two varieties of pentose are encountered in the urine, a dextro-rotary and an optically inactive form. The former is found in alimentary pentosuria following in healthy persons the ingestion of pears, plums, cherries, bilberries, and other food materials containing pentose, while the latter is the form met with in chronic pentosuria and under pathological conditions. Only a few cases of chronic pentosuria have been described but more careful r[illegible] of the urine would probably show tha[illegible] more commonly mistaken for ordinary [illegible]nerally supposed. In a few cases of [illegible] and frequently along with dextrose in severe diabetes, pentoses have been reported as present in the urine. This is interesting in view of the fact that extirpation of the pancreas in dogs is followed by excretion of a pentose in the urine. In none of the cases of inflammation or malignant disease of the pancreas that I have examined has any evidence of the presence of this substance been found.

Glycuronic acid, the only other important substance forming a compound with phenylhydrazin that is met with in fresh urine, is closely related to the sugars. It represents an early stage in the oxidation of glucose where one atom of oxygen has replaced two hydrogen atoms in the group $CH_2—OH$. It is not found free in the urine but always in combination with various bases and with fatty and aromatic alcohols, especially the latter. In perfect health the amount excreted is small, but when the conditions are such that there is an excessive formation of phenol, indol, and similar products of putrefaction the excretion is correspondingly increased. It is well known that the increased reducing power of the urine after chloroform anæsthesia and the administration of certain drugs such as camphor, chloral, salicylic acid, turpentine, thymol, &c., is due, not to sugar, but to conjugated glycuronic acid which these substances cause to pass into the urine. In cases of respiratory difficulty and in febrile diseases an increased output of glycuronic acid is said to take place. The urine of diabetics often contains glycuronic acid, and even in severe cases the tissues appear to be able to carry the oxidation to this point, for the administration of appropriate drugs will cause a large amount to be passed. Large doses of sugar in the apparently healthy may be reflected in the urine by an increased excretion of glycuronic acid. Alkaline salts of the acid form a compound with phenylhydrazin, which slowly separates on cooling as yellow needles usually of a somewhat darker colour, of smaller size, and more irregular shape than the osazones of the sugars. Some compounds of glycuronic acid undergo the decomposition that must occur before it combines with phenylhydrazin more easily than others, so that the readiness with which the reaction takes place varies. A urine containing a compound such as urocholic acid, which readily splits up, quickly responds to the test but the more resistant phenol and indol compounds require prolonged treatment before they react. When the reaction takes place in a solution containing free acid the phenylhydrazin compound is precipitated in the form of dark-brown granules and does not assume the crystalline form. Prolonged heating is said to bring about a similar result but in practice this cannot be depended on to distinguish the sugars from glycuronic acid. The crystals are readily soluble in hot alcohol but generally separate from this solution after dilution with water and boiling in an amorphous form. In

33 per cent. sulphuric acid they dissolve in about one to two minutes. The melting point of the crystalline variety is 114°–115° C., but the amorphous form requires heating to 150° C. before any change is observed. Since the formula of the phenylhydrazin compound of glycuronic acid is $C_{42}H_{44}$, $N_{10}O_{12}$, it is calculated to yield 16·4 per cent. of nitrogen on combustion. It is not at all an easy matter, however, to obtain a sufficiently pure specimen from the urine to allow of an accurate determination of either the melting point or the nitrogen content.

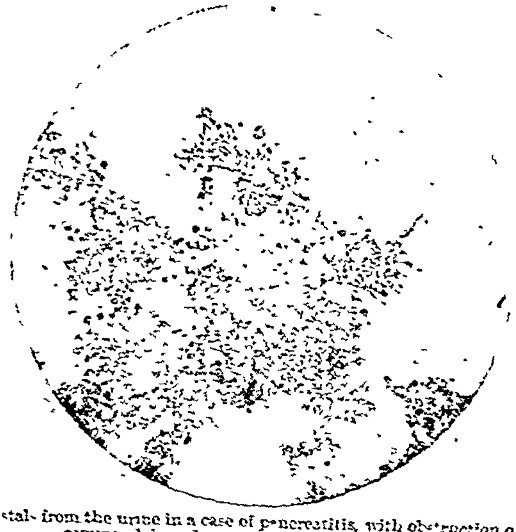
The freeing of glycuronic acid from its combinations is most readily effected by heating with dilute acids. Hence some urines that do not react with phenylhydrazin alone may do so after such treatment, and in others the yield may be materially increased. In an investigation with the phenylhydrazin test of a series of 100 urines from apparently healthy people, I found that in addition to the six already mentioned which gave a reaction with phenylhydrazin alone, 13 yielded a positive result due to glycuronic acid after treatment with hydrochloric acid. The series, on being divided into an earlier set of 43, derived from persons living in the country with an abundance of fresh air and exercise, and a later set of 57 obtained from city dwellers who lived under less favourable hygienic conditions, showed that none of the former gave a reaction until the urine had been boiled with acid, and then only three yielded a crystalline deposit, but that six of the latter gave a positive result before treatment and nine after.

Glycuronic acid is not the only substance capable of combining with phenylhydrazin that is set free in the urine by heating with dilute acids. Under certain pathological conditions an appreciable quantity of an osazone with a definite melting point differing from that of glycuronic acid may be obtained. It has been stated that when normal urines are boiled with one-tenth volume of strong hydrochloric acid for five to ten minutes and the excess of acid neutralised very characteristic crystals are "invariably" obtained with phenylhydrazin.[4] This is not by any means my experience, for in 94 normal urines that gave no reaction with phenylhydrazin I found that 19 gave a slight crystalline deposit and seven a more marked result after boiling with hydrochloric acid. Of these, 12, as I have already stated, were glycuronic acid compounds, so that in 14 out of 94 specimens from apparently healthy people there was a reaction due to some other substance. Only three of these were at all comparable in degree with what is met with pathologically and as all three were derived from persons living a sedentary life and occurred in my later series I think it is not unlikely that the reaction was an expression of a disturbance of function. In disease, especially where there are inflammatory reaction and marked tissue change or an affection of the kidneys, treatment of the urine with an acid previously to the application of the phenylhydrazin test produces a marked and in many instances a most striking effect if the operation is carefully performed. The details of the experiment, however, exert considerable influence on the result, and some experience is required to determine what conditions are best suited to obtain the most characteristic effect with the particular specimen of urine under examination. Insufficient or too prolonged heating after the addition of the acid may prevent the reaction or interfere with it, while unless care is taken in carrying out the neutralisation of the excess of acid the derivatives obtained may be destroyed or their presence obscured. Boiling in the water-bath for from 15 to 30 minutes is in my experience quite insufficient to secure a characteristic reaction with phenylhydrazin when this test is subsequently applied. To avoid the difficulties attending neutralisation with a caustic alkali I have generally employed a neutral salt that formed an insoluble compound with the acid—lead carbonate for hydrochloric acid and barium carbonate for sulphuric acid. Although lead chloride is soluble in hot water it is almost insoluble in cold, especially when there is a little free hydrochloric acid present. It is therefore essential in using this method, if difficulties from lead salts are to be avoided, that the solution should be well cooled before the carbonate is added and it is an advantage if a trace of hydrochloric acid is left unneutralised. Of course, the usual precautions in filtering off the insoluble lead compound are necessary. Sulphuric acid gives comparable results with hydrochloric and the more complete insolubility of barium sulphate is an advantage, but much more care is required to secure constant results. The fact that similar crystals are obtained from the same urine with both acids and with different methods of neutralisation indicates that those produced by the use of hydrochloric acid and lead carbonate are not lead compounds, as does also their not responding to any of the reactions for lead when isolated and purified.

My experience of this reaction has been chiefly gained in connection with work on diseases of the pancreas which I have carried out in conjunction with Mr. Mayo Robson. Up to Dec. 31st, 1904, I had the opportunity of examining 479 specimens of urine from 295 cases, most of the patients being under Mr. Robson's care, and on many of whom he performed an abdominal section.

In 130 cases the urine when treated with hydrochloric acid and neutralised with lead carbonate yielded with phenylhydrazin hydrochloride and sodium acetate a considerable flocculent brown deposit, which under the microscope was found to consist of yellow crystals smaller than glucosazone and generally arranged in rosettes. In some the crystals were slender and somewhat resembled small lactosazone or pentosazone crystals, while in others they were less delicate and approached the glucosazone or even maltosazone type in shape. Their time of solution in 33 per cent. sulphuric acid varied from half to one and a half or two minutes when the mean of several observations was taken. On being filtered off, washed, extracted with boiling 50 per cent. alcohol and re-crystallised they gave a melting point of from 168° to 170° C. (Fig. 1.)

FIG. 1.



Crystals from the urine in a case of pancreatitis, with obstruction of the common bile and pancreatic duct by a gall stone.

The clinical symptoms in 116 of these cases pointed to disease of the pancreas, and in 79 it was possible to ascertain the condition of the parts at operation. In five the diagnosis was confirmed post mortem, shortly after the last examination of the urine had been made. Three cases in which fine rapidly dissolving crystals were isolated from the urine were found to be suffering from acute pancreatitis with fat necrosis. One succumbed shortly after the operation and was examined after death. In 37 gallstones were found impacted in the lower part of the common bile duct and the pancreas was stated to be unmistakably enlarged and hardened. In two cases a similar condition of the gland was found, associated in one with obstruction and considerable dilatation of the common bile duct and in the other with a malignant growth of the duodenal papilla which subsequently proved fatal. In two cases pancreatic calculi were found and in two others a cyst of the pancreas was dealt with. The pancreas was recognised as being enlarged and harder than usual in 29 cases, but no obstruction of the ducts could be found at the time of operation. In one case a malignant growth of the stomach was found adherent to, and growing into, the pancreas. In three cases, although there were gallstones in the gall-bladder or cystic duct, no abnormality of the pancreas to sight or touch could be detected. Three cases in which the urine during life gave a well-marked deposit of crystals were not operated on, but chronic pancreatitis was found after death. In another case in which the urine gave a similar reaction malignant disease of the pancreas was found post mortem. A clinical diagnosis of cancer of the pancreas was made in two patients whose urine gave many fine rapidly dissolving crystals. In one of these a large mass was found at operation occupying the head of the gland and probably compressing the duct. The clinical symptoms in 14 control cases did not suggest pancreatic disease but the urine gave a well-marked reaction. Of these patients, three were suffering from mumps, two from cancer with secondary deposits, two from disease of the kidney with albuminuria, two from fractured bones, one from peritonitis, one from chronic colitis, and one from pneumonia. A small deposit of crystals, considerably less than in the previous group, was obtained in 35 cases. In three of these the pancreas was probably diseased. One showed a small stone in the common duct and some enlargement of the gland. A history of gall-stone colic was present in the other two, and when examined at operation the pancreas was found to be enlarged and harder than normal. In the remaining 32 a lesion unconnected with the pancreas was found. A deposit consisting of broad, flat, sword-like crystals soluble in 33 per cent. sulphuric acid in from four to five minutes was obtained in 21 cases. Clinically these were all diagnosed as malignant disease of the pancreas but only two were operated on. One died a few days after the operation and the other lived for several weeks but finally died from the disease. 13 are known to have steadily got worse and died at later periods with secondary symptoms from malignant growth. In two a post-mortem examination was obtained and in both the diagnosis was confirmed. The crystals were difficult to secure in several instances and without the exercise of considerable care and patience it is quite possible that no result would have been obtained. In these cases of pancreatic cancer and in many others of suspected pancreatic disease much assistance in diagnosis was derived from a microscopical and chemical examination of the fæces. A few crystals were seen microscopically in the urine from 11 cases, but none of them showed any evidence, either clinically or at operation, of disease of the pancreas. (Fig. 2.)

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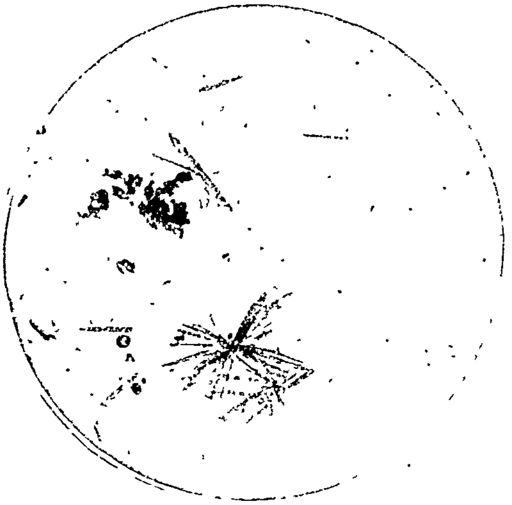
[4] THE LANCET, July 23rd, 1904, p. 211.

FIG. 2.



Crystals from the urine in a case of malignant disease of the pancreas.

No reaction whatever was obtained in 93 cases. Two of these died and were examined a short time subsequently to the examination of the urine. The pancreas in both was found to be normal macroscopically and microscopically. 32 were operated on. In nine gall-stones were found in the gall-bladder or cystic duct but the pancreas was said to be normal. In three a calculus was found above the pancreatic portion of the common bile-duct and six showed a biliary concretion floating in the common duct but no affection of the pancreas. No obstruction of the common duct or disease of the pancreas could be found to explain the jaundice present in three cases. In two patients there was said to be pancreatitis when the gland was examined at operation. The remaining 59 cases were not operated on. In eight there was at the time the urine was examined a suspicion of pancreatic disease which the subsequent course of the case dispelled. 51 were control cases examined for the purpose of comparison; two had cancer of the liver, five gastric ulcer, and two ulcer of the duodenum, while the remainder suffered from diseases unconnected with the pancreas.

From the urine of three cases of pancreatitis and two cases of diabetes I succeeded in isolating a substance which gave the reactions of a proteid but none with phenylhydrazin. Solutions of this on hydrolysis with hydrochloric acid yielded a crystalline phenylhydrazin compound resembling that obtained from the urine directly. In consequence of this observation I was led to try the effect of treatment of the urine with mercuric chloride before hydrolysis. In 24 out of 126 cases in which the urine gave a reaction before treatment it was found that the addition of half its volume of a saturated solution of corrosive sublimate entirely prevented the reaction. Three of the patients were suffering from diabetes, and in one, where the pancreas was examined after death, it was found that almost the whole of the glandular substance had been replaced by fibrous tissue. In another the glycosuria had supervened eight and a half years after an operation for pancreatitis. Active pancreatitis associated with obstruction of the common duct was found in 17 cases. In four the pancreas was enlarged and hard but there was no obstruction. The reaction, although not completely prevented, was appreciably diminished in 30 cases. 24 of these were found at operation to have an enlarged and hardened pancreas, and in 11 there was a gall-stone in the common duct. Two were diagnosed as cancer of the pancreas and ended fatally. One case with an affection of the kidney, one with mumps, and one with advanced carcinoma of the breast, showed some diminution in the amount of the deposit. No appreciable difference was observed in the urine of 69 cases. Of these ten were found to be suffering from pancreatitis, which in four was known to be of some standing. In 14 a diagnosis of malignant disease of the pancreas was made. The remainder were cases in which the results of operation or the clinical condition and after-history of the case negatived pancreatic mischief.

With nitric acid (0·25 cubic centimetre to ten cubic centimetres of urine) similar results to those described with hydrochloric acid and sulphuric acid have been obtained, but the reaction has been found to be more difficult to control. Crystals of a kind can be prepared in most circumstances from suitable specimens of urine, but with care those cases in which there were obstruction of the common duct and marked swelling of the pancreas have been found to yield small masses of fine lemon-yellow needles quite distinct from the brownish sheaves with which they were generally mixed. As the excess of nitric acid left after heating cannot be removed as an insoluble salt, and as even a slight excess of alkali has been found to interfere with the subsequent course of the reaction, the fluid is diluted with ten cubic centimetres of urine, made up to 15 cubic centimetres with water and a slightly larger amount of sodium acetate added with the phenylhydrazin hydrochloride than usual. I may here mention that by heating a solution of glycerine with nitric, *not* hydrochloric, acid and neutralising with urea I have repeatedly obtained on treatment with phenylhydrazin an osazone with a melting point of 131° C., and that it was on this fact that the original investigations on the urine in diseases of the pancreas were founded.

It is evident that in phenylhydrazin we possess a most useful reagent for inquiring into variations in the urine accompanying certain changes in metabolism. In the hands of those who have had some experience of its application and the interpretation of the results that may be obtained by its use the test is capable of more than the detection of traces of dextrose in slight or doubtful cases of diabetes, important as this may be. Although advocating a more extended use of this test in the examination of urine I do not wish it to be thought that I am underestimating the value of other reactions or methods of investigations. Like most laboratory methods in the present state of our knowledge it has its limitations and needs to be interpreted in the light of all the available evidence, not only from a complete chemical and microscopical examination of the urine but also from the clinical aspects of the case and in certain circumstances from the investigation of the fæces, or blood, or other "products."

Beaumont-street, W.

URIC ACID.

A RATIONAL TREATMENT FOR ITS ELIMINATION, IN THE LIGHT OF RECENT RESEARCH.

By ROBERT FENNER, L.R.C.P. EDIN., M.R.C.S. ENG.

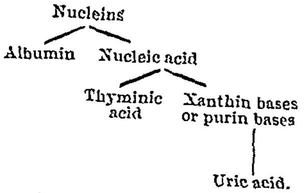
THE causes and treatment of those diseases depending upon an excess of uric acid in the blood and its deposition in the tissues of the body have been shrouded for years in mystery and the recorded theories founded on clinical research are fraught with fallacies. As a subject it is of the utmost importance to the practising physician. In few other troubles are his remedies and treatment so impotent. Many have been the theories but the advance in treatment has been practically *nil*. The main object of all treatment hitherto has been to prevent the accumulation of the salts of uric acid in the system and to favour their excretion, but no attempt has been made to deal with uric acid *per se* or to prevent the formation of the urates. A great variety of drugs have been exploited and are in daily use to rid the system of their presence after their formation. It is much as if the stable door be shut after the horse has disappeared. With all diffidence I hope, on the basis of recent researches by Minkowski, Kossel, and Schmoll, to prove that there is a substance which, by holding uric acid firmly in solution, prevents its deposition in the tissues in the form of salts; that this substance answers the chemical and physiological tests required; and that its exhibition is clinically successful in those cases which depend upon an excess of uric acid in the blood.

Gout has been generally considered to be an acute arthritis associated with a deposit of crystalline sodium biurate in the joints affected and with a circulation of an excess of urates in the blood. According to the usually accepted theories the excess of uric acid in the blood is due either to (*a*) increased production or (*b*) decreased elimination by the kidneys. Garrod adopted the second view. Roberts[1] gave it as his opinion that the sodium salt present is the quadriurate and if this is in excess or not rapidly eliminated it forms sodium biurate by coming into contact with sodium carbonate, but Fischer conclusively proves that the quadriurates are a mixture of the urates and uric acid in its free state. Murchison[2] thought that there was excessive formation of uric acid through deficient oxidation of the ingesta owing to functional inactivity of the liver and therefore he considered uric acid a half-way product in the oxidation of albuminous foods. Latham suggested the theory that the increase of uric acid was due to the imperfect metabolism of glycocine in the liver.

Haig[3] has given us a most interesting and entertaining volume upon uric acid, in which almost all "the ills that flesh is heir to" are stated to be due to some form of uric-acid poisoning and these may be divided into two groups: (*a*) gout and (*b*) collæmia. He advances the theory that "gout is relieved by solvents, collæmia by retentives. Both are prevented, relieved, or wiped off the record by a uric-acid-free diet. Gout is accompanied by a quick circulation, raised temperature, and a few granules in the blood. Collæmia is accompanied by a slow circulation, subnormal temperature, and many granules in the blood—both are the results of excess of uric acid in the body and that excess is produced by swallowing it in the food." In collæmia he thinks that uric acid is present in the blood as a colloid or gluey material and mechanically blocks the capillaries, causing: "1. High blood pressure in the arteries. 2. Increase in the heart's work. 3. Obstruction of the capillaries. 4. Defective combustion." His dietetic treatment is important, as he certainly aims at the reduction in quantity of the uric acid itself, for he only allows his patients those foods which are calculated to sustain life in birds and rodents. One's experience in practice is that patients will not endure a treatment which deprives them of most of those foods which make ordinary life worth the living, and for whose digestion our organisation has been fully adapted by a beneficent Creator. His theory might hold good in the case of a gouty person in whom it is all-important to restrict the formation of free uric acid but in a healthy person the foods which he forbids are absolutely necessary for sustained and vigorous life, where the ingestion of nucleins is followed by an adequate metabolism. As will presently be proved the uric acid not only becomes perfectly soluble in the blood stream but is maintained in that condition and prevented from being deposited in the tissues by a substance formed at the same time and with which it unites in indissoluble bonds. The important part of Haig's treatment is his clear insistence that it is the irritating presence of uric acid itself in a fibrous tissue, "either in solution or suspension," that is the cause of trouble in his (*a*) group, and the excess of uric acid in the blood the cause of trouble in his (*b*) group. In the absence of all scientific proof and the results of research his theory must remain a pious opinion.

Before considering the rôle that uric acid plays in the production of gout it is important to consider its relationship to nutrition. In striking contrast to urea uric acid requires for its solution 16,000 parts of cold water; it is therefore clearly impossible for uric acid to be present in the blood as an acid unless it is in combination with a substance which makes it easily soluble. It is dibasic and has the formula $C_5H_4N_4O_3$. It forms two classes of salts of which the solubility is almost equally deficient; these are the urates and the biurates: (1) Normal = 2 atoms of H replaced by 2 of Na = $C_5H_2Na_2N_4O_3$ = urates. (2) Acid = 1 atom of H replaced by 1 of Na = $C_5H_3NaN_4O_3$ = biurates. This latter is the chief constituent of the pinkish so-called "lateritious" deposit. It has been proved that uric acid is not made in the kidneys; when these have been removed it continues to be formed and accumulated in the organs, notably in the liver and spleen. In birds, when the liver has been removed, uric acid is scarcely found at all, its place being taken by ammonia and sarcolactic acid, therefore we may assume that uric acid is formed synthetically in this system; of this important fact I shall write later. The conditions which lead to an increased elimination of uric acid in the urine are: 1. An increase of meat diet and a diminution of oxidation which may be brought about by a sedentary life. 2. An increase of white corpuscles in the blood as in leucocythæmia. The leucocytes contain large quantities of nuclein and nuclein yields the xanthin bases to which uric acid is very closely related.

Uric acid had for long been considered a product of the imperfect oxidation of albumin before the formation of urea. Differing from Garrod, Bouchard[4] suggested that its increase in the serum and in the urine was due to defective oxidation and that this was the pathogeny of gout. But careful chemical research, the discoveries of Fischer[5] as to the connexion of uric acid with the constituents of the xanthin bases, and the results of physiological researches by Kossel[6] all point to the true origin of uric acid which is totally at variance with the hitherto accepted theories. There are three great classes of proteids: 1. Albumin, the protoplasm of the living cell containing no phosphorus. 2. The paranucleins, the properties of which are similar to the albuminoid bodies except that they contain a small percentage of phosphorus. They are represented by the yelk of egg and the casein of milk. 3. The nucleins, which constitute the chromatin fibres of the nucleus containing a fair proportion of phosphorus. By the splitting up of the nucleins, as shown by Schmoll, we obtain: (*a*) albumin (as in protoplasm); and (*b*) the nucleic acid group: thus



The nucleins when split up by digestion yield simple albumin and nucleic acid, nucleic acid again yielding thyminic acid and the xanthin bases. Fischer[7] after

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[1] Roberts: On the Chemistry and Therapeutics of Uric Acid, Gravel, and Gout, 1892.

[2] Murchison: Clinical Lectures on Diseases of the Liver, 1877.

[3] Haig: Uric Acid as a Factor in the Causation of Disease, 1896.

[4] Bouchard: Leçons sur les Maladies par Ralentissement de la Nutrition,

[5] Fischer Berichte der Deutschen Chemische

[6] Kossel für die Medicinischen Wissenschs Neumann: Ueber Nucleinsaeure und Thyminsaeure, Zeitschrift für Physiologische Chemie, 1896.

[7] Loc. cit.

TABLE I.—CASES OF ACUTE GOUT.

Case.	Sex.	Age.	Previous history.	Present attack.	Dose.	Remarks.
1	M.	46	Had had repeated attacks of acute gout in foot and knee extending over the last three years.	Right metacarpo-phalangeal joints swollen, inflamed, and painful.	4 grains three times a day.	Cured in five days; attacks usually lasted weeks.
2	M.	42	Had had two or three previous attacks.	[illegible]	5 grains three times a day.	Perfectly well in four da vious attacks had last seven to ten days.
3	M.	45	Subject to acute gouty synovitis of right knee and pharyngitis.	Painful inflammatory swelling of knee.	4 grains every four hours.	The knee was well in five the pharyngitis yielded to this treatment.
4	M.	55	Had suffered with various manifestations of acute gout at intervals during the past six years. Had traces of albumin and a quantity of sugar in urine.	Acute dyspepsia with vomiting and gouty pharyngitis.	"	The acute symptoms appeared in five days; ninth day sugar reduc 3·13 grains per ounce grains per ounce. Has more attacks since taking of thyminic acid twice The sugar has practic appeared.
5	M.	68	Had been subject to gout for years, having had several attacks of acute arthritis; usual duration of attack from three to four weeks.	Acute arthritis of left knee.	4 grains every four hours begun on second day of attack.	Cured; inflammation diss in four days.
6	F.	65	Had had several attacks of gout during the past four years; usual duration several weeks.	Severe attack in left foot and ankle.	4 grains three times a day begun on third day of attack.	[illegible] had another attack wh cured as quickly.
7	M.	54	Had repeated attacks of articular gout lasting from 10 to 15 days.	Acute arthritis of left ankle.	4 grains three times a day.	Cured in four days

TABLE II.—CASES OF CHRONIC GOUT.

Case.	Sex.	Age.	History of illness.	Dose.	Remarks
1	F.	70	Had suffered for many years with gouty arthritis of the finger-joints and knees and latterly with obstinate eczema and bullæ of the hands.	4 grains three times a day after food	Great improvement after one month's treatment walk with comfort a [illegible] weeks the eczema a [illegible] on small doses has k
2	M.	37	Tender swelling in the middle metacarpophalangeal joint of the right hand.	4 grains three times a day.	[illegible] of thyminic acid the [illegible] swelling diminished,
3	F.	45	Swelling and tenderness of the feet.	"	In one week the condition was so much impro she could walk with comfort.
4	F.	50	Stiffness in joints and back; gouty enlargement of finger-joints; excess of uric acid and urates in urine.	7 grains three times a day.	After three weeks there was an increased output acid, the urates disappeared, and the stiffness w improved,
5	F.	69	[illegible] painful.	"	Well-marked improvement in a fortnight, han free from pain, knees have recovered shape and and all the joints are more flexible.
6	F.	65	Sub-acute arthritis, especially of knees. Acid dyspepsia and constipation.	4 grains three times a day.	Arthritis improved steadily, also the dyspeps
7	M.	63	Gouty pains in left hand, tophi on little finger-joints of both hands, eczema on arms and thighs.	7 grains three times a day.	Improvement very marked, eczema disappear
8	M.	35	Had suffered with extensive psoriasis of chest, back, arms, and legs, which had resisted all treatment for several years.	8 grains three times a day.	In a fortnight there was marked improvement; [illegible] had disappeared but patie [illegible] d; has again almost dis [illegible] it by thyminic acid, t supplemented by 14 days' Zittmann's treatment.
9	M.	57	Gouty glycosuria occurring in the course of an attack of laryngitis; amount of sugar = 8 grains to the ounce.	4 grains three times a day.	The sugar gradually diminished in quantity and disappeared in 14 days; has not recurred. The takes occasional doses of thyminic acid.
10	M.	46	Gouty glycosuria. Sugar = 29·14 grains per ounce. A great gourmand and an alcoholic.	8 grains three times a day.	In one month the amount of sugar fell to 8·75 gr ounce, in two months to 3·64 grains per ounce residing abroad, in good health.
11	F.	43	Suffered from obesity, periodical headaches, sleeplessness, and dyspepsia.	4 grains three times a day.	After three months' treatment the patient had l pounds in weight, the headaches, dyspepsia, an [illegible]
12	M.	48	Gouty laryngitis and eczema of hands. Tophi present on ears.	"	Cured after two weeks' treatment, but patient careless liver symptoms again returned but are disappearing under treatment.
13	M.	46	Had suffered with repeated attacks of "gravel" for the past five years.	"	After six weeks' treatment, during which time he from pain, he had an attack of renal colic which e the passing of a small uric acid calculus; since has been perfectly well.

[illegible] the xanthin bases, conceived them to [illegible] and called them "the purin bodies." The most simple representative of the purin bodies is hypoxanthin, which contains in its molecule one atom of oxygen, and by adding first one atom of oxygen and then two to this substance we obtain successively xanthin and then uric acid, or if the amido group be introduced into the purin nucleus adenin and guanin result, the latter containing one atom of oxygen, the former none. Therefore starting from purin bases we can, by simple chemical changes, obtain uric acid. These purin bodies are found in the organism wherever there are nucleins. The xanthin bases found in the human body are principally adenin and guanin; the bases can thus be combined with thyminic acid to form nucleic acid, as is shown by the following rough scheme: nucleic acid = adenin + guanin + thyminic acid.

Remembering that nucleic acid, by splitting up, yields, ultimately, uric acid and thyminic acid, and basing their theory on the presence of thyminic acid with the intra-organic formation of uric acid, Minkowski[8] and Kossel[9] advanced the hypothesis that thyminic acid is the substance which combined with uric acid renders the latter soluble and that this combination cannot readily be broken up and together they form a product no longer precipitable either by acids or heavy metals, in fact, uric acid cannot be recovered after it has once combined with thyminic acid without prolonged boiling. *Granting that this supposition is correct* we can at once form an exact idea of the action of uric acid in the body. As soon as *formed* uric acid combines *with thyminic acid*. In this combination it *circulates in the blood* and this prevents its detection in *normal serum*. It is excreted by the kidneys, partly in its combined state and partly after the breaking up of this combination. The presence of thyminic acid in health explains why uric acid in the urine is not entirely precipitated by acids. Weintraud[10] has demonstrated the connexion between nucleic and uric acid *by showing that after ingestion of thymus gland extract*, which is essentially rich in nucleins, the *excretion of uric* acid rose from 0·5 gramme to 1·8 grammes and 2 grammes in 24 hours: Hess and Schmoll[11] have shown that the nucleins were the sole origin of uric acid. It was shown that in a healthy person, on a regulated diet, the only way *in which the excretion* of uric acid could be altered from its normal percentage was by *giving* foods containing purin bases! The administration of albuminoids brought about no alteration in the quantity excreted. Garrod[12] established the presence of *uric acid* in the gouty blood serum and the relation between a gouty attack and deposit of uric acid in the joints. He explained the presence of uric acid in the serum on the hypothesis that it was merely retained there and the deposits were explained in a similar way. There is, however, nothing to indicate any connexion between the excretion of *uric acid* and its *presence* in gouty serum. It has been proved that in the healthy physiological state uric acid cannot be found *in the blood serum. It is not formed* in the kidneys, and before its excretion it has to be carried away in the blood stream. Thus all analyses are tainted with error, since we cannot detect uric acid in combination with thyminic acid, and *in no other form* does it exist in the blood in a physiological state. The presence of uric acid in gouty fluids and *tissues may thus be explained* by the absence of a proper proportion of *thyminic* acid combined with it and keeping it in solution. In the normal state uric acid is produced by the oxidation of the *purin* bases; in the gouty state the combination with thyminic acid does not take place. If thyminic acid be given to gouty people uric acid combines with it, as has been experimentally proved by Schmoll.[13] It is possible, therefore, that in gout uric acid *has* an origin other than from the nucleins in which thyminic acid is not at the same time produced.

Minkowsky has clearly demonstrated the synthetic production of *uric* acid in birds and Wiener[14] has established it in animals. The former has proved that all the acids with a chain of three atoms of carbon and two groups of acids can be transformed into uric acid by birds in the presence [illegible] ion of uric acid is of a [illegible] always leads to the formation of nucleins, but in the gouty diathesis this synthesis stops at uric acid and it is this amount of acid the presence of which we can prove. In nephritis the presence of uric acid might be due to the fact that the combination of thyminic acid and uric acid is destroyed in the kidneys. Obviously this might also explain its presence in gouty serum but the results of Schmoll's experiments conclusively prove that the excretion of uric acid in gout is enormously increased by the ingestion of thyminic acid, thus refuting the above hypothesis. We may thus express the pathogeny of gout. Uric acid in a gouty organism is formed synthetically, whilst in the normal state it is formed by oxidation; in the latter case thyminic acid, which is always present, combines with uric acid, and it is in this combination that uric acid circulates in the blood. The absence of thyminic acid in gout explains how uric acid is precipitated and found in the serum. Schmoll has made a series of experiments proving the pronounced influence of thyminic acid on the excretion of uric acid in gout; it was increased in every case from 25 to 50 per cent. Another series of experiments on a normally healthy man showed that the ingestion of thyminic acid produced no result.

What, then, are the properties of this substance which holds uric acid in such a grip that, in health, no splitting up can occur and consequently no urates can be deposited *in the tissues or joints*? A combination so firm that uric acid cannot even be detected in the blood! I have preferred to call this substance "thyminic acid" rather than the "*thymic acid*" of Schmoll (which might lead to confusion with the products of the herb thyme) or the somewhat clumsily called "nucleotin-phosphoric acid" of Minkowsky and Walker Hall.

Walker Hall, in his valuable handbook on "Purin Bodies," p. 189, says: "An interesting outlook in relation *to this question is the action of some bodies which hinder or prevent the precipitation of uric acid and xanthin bodies from their solutions. Minkowsky* some time since remarked upon this property of nucleotin phosphoric acid and has administered this *substance* to patients with the view of *maintaining* the circulating purins in solution and preventing uratic infiltration. At present, however, nucleotin phosphoric acid is not easily obtainable and very few results are *recorded*." *In an interesting discussion on the Chemical* Pathology of Gout[15] A. E. Garrod says: "We do not know *in what combination uric acid exists in the blood of the gouty: and I would venture to suggest that this question offers a promising line for investigation—an investigation which is by no means easy at the present day when* venesection is no longer in fashion."

Thyminic acid is an amorphous powder, brownish-yellow in colour, soluble in cold water, slightly deliquescent, faintly acid in reaction, and almost tasteless; Minkowski gives its formula as $C_{33}H_{47}N_4O_{14} \cdot 2P_2O_5$; Kossel as $C_{16}H_{25}N_3P_2O_{12}$. It has the very interesting property of holding in solution practically its own weight of uric acid at a temperature of 20° C., while this property of retention is increased by 50 per cent. at the blood temperature of 37° C. This can easily be confirmed. A slightly alkaline solution of sodium or potassium urate is prepared in a test-tube, care being taken to use only a very small quantity, one-eighth of a grain or even less. In another test-tube a solution is made of a somewhat larger quantity of thyminic acid. Half of the contents of each of these test-tubes is then poured into a third and shaken up together; if the mixture be strongly acidified it will be noticed that the uric acid is *held firmly* in solution and is not precipitated. If, *on the other hand*, the test-tube containing the remaining half of the uric acid solution be filled up with water and rendered acid the uric acid will either come down as an amorphous precipitate, or if the solution be weak crystals of uric acid will be slowly formed. According to Kossel, Goto,[16] and others the "retention property" of thyminic acid is increased when a small quantity of nucleic acid is present. Thyminic acid may be given internally as a *powder*, in an elixir, or in the form of compressed tablets. *Its administration* has not, in my experience, been attended by *any toxic* or untoward symptoms. It is best given with or immediately after meals, in doses of from four to seven grains; in solution it has practically no incompatibles.

During the past 16 months I have had under my care a great number of suitable cases for whom I have prescribed the thyminic acid prepared by Messrs. Allen and Hanburys, Limited. I usually order this to be taken in doses of from four to eight grains in the tablet form after meals; during its exhibition I have prescribed no other drug and the results have been most gratifying. In acute cases it quickly cuts short the inflammatory condition and leads to rapid convalescence; in chronic cases prolonged administration of the drug has led to marked improvement in nearly every case. I have been particularly pleased with the results of treatment in cases of gouty glycosuria, gravel, gouty eczema, and obesity. The accompanying cases have been selected at random from my own practice and from those of Dr. A. Butler Harris, Dr. W. M. Abbot Anderson, and Dr. Eugene F. Cronin, to whom I am indebted for having kindly sent me a record of many cases treated by them. I must also acknowledge my indebtedness to Mr. Alfred C. Chapman, F.I.C., F.C.S., for much valuable help received in difficult chemical research and experiments.

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[8] Minkowski: Die Gicht, 1903.

[9] Loc. cit.

[10] [illegible] liner Klinische Wochenschrift, 1895.

[11] [illegible] rchiv für Experimentelle Pathologie und [illegible]

[12] [illegible] Gout, 1851; "Gout," in Reynolds's System [illegible]

[13] Schmoll: Archives Générales de Médecine, No. 39, 1904.

[14] Wiener: Beiträge zur Chemischen, Physiologie, und Pathologie, 1902, Band ii.

[15] Brit. Med. Jour., Sept. 24th, 1904, p. 743.

[16] Goto: Zeitschrift für Physiologische Chemie.

Buckingham-gate, S.W.

NOTE ON THE RECENT OUTBREAK OF TYPHOID FEVER AT LINCOLN.

BY E. CECIL CLEMENTS, M.R.C.S. ENG., L.R.C.P. LOND.

THE Lincoln epidemic of typhoid fever is fresh in the memory of most of us and although perhaps sufficient time has not yet elapsed to enable us to form a critical judgment exactly as to what we may learn from it, nevertheless I venture to think that the following observations, based upon 192 cases, even if somewhat crude, will not be valueless.

The Drill Hall temporary hospital was opened on Feb. 9th and I had under my care in the hospital 192 cases. 70 patients were admitted in four days; in the majority of them no clinical history could be obtained and it was thus impossible to estimate with any degree of accuracy the stage of the disease upon admission. Of the 192 patients 28, or 14·5 per cent., died. Of these 28 deaths eight were due to perforation. One case was treated surgically, the result being fatal. Eight deaths were due to hæmorrhage from the bowel, three deaths were caused by meningitis, and four by pulmonary complications. In only four cases did death follow an uncomplicated course. In 28 cases, or 14·5 per cent., relapses occurred; three of these had a second relapse and one had a third relapse. All the patients who experienced relapses are now convalescent. 44 patients presented marked cerebral symptoms; five of these, of whom three died, had undoubted meningitis. One patient was the subject of chronic pulmonary tuberculosis, having a cavity in the right apex. She recovered and the tuberculous condition seems at the present time improving. Four patients were pregnant and none of these aborted or miscarried. 29 cases ran a pyæmic course, characterised by numerous abscesses requiring surgical treatment. In ten cases the normal subsidence of fever was interrupted by a rigor which in most cases was severe. The patient would complain of feeling cold, violent shivering, and the temperature would run up to 103° or 104° F., settling down to subnormal within 24 hours and remaining there. The explanation of this would be interesting. Might it be due to separation of sloughs, as in one case where sloughs were recognised in the stool the temperature immediately came down to normal, but no definite rigor was noticeable?

Of the sequelæ observed in this epidemic up to the present time the most important was thrombosis, which occurred in nine cases. Ten patients suffered from suppuration of the ear; in four of these the previous history showed this affection to be definitely post-typhoidal. In one patient loss of memory and melancholia occurred three weeks after discharge from the hospital. Both these symptoms disappeared after three weeks' rest and sea-air. Three cases showed signs of slight peripheral neuritis. One patient is still under treatment for choroiditis.

The routine treatment that we adopted can best be considered under the following heads:—

Drugs.—An extensive trial was given to intestinal remedies such as salol, urotropine, &c. In no instance can I record any definite advantage from their use and in the later cases they were discarded. In cases of threatened cardiac or respiratory failure small doses of tincture of digitalis (from five to ten minims), but if sickness were present liquor strychninæ (from three to five minims), were given. It was found, however, that strychnine was apt to cause hunger. The sedative which after many trials was universally adopted was opium, which was generally supplemented by the application of icebags to the head. The form of opium used was the liquid extract. Morphine and chloral were nothing like so constant in their sedative effects and were after a preliminary trial discarded. Phenacetin was used in ten-grain doses as a sedative and antipyretic, either alone or combined with sal volatile or citrate of caffeine. The antipyretic action of this drug was very marked and was always accompanied by profuse diaphoresis. When combined in the above manner no marked depression followed its use and I have often seen it cause a fall of temperature (four or five degrees) about four hours after and be followed by a refreshing sleep. Tepid sponging was adopted as a routine practice when the temperature reached 104°. Its result was very varied and sometimes only lasted for an hour. Speaking generally, it was least useful in children and young adults. The highest temperature observed in a patient who recovered was 105·8°. Stimulants were used sparingly, only brandy in small doses being administered when necessary.

Purgatives.—Perhaps the mention of this class of drug may cause some surprise, but a very marked feature of the Lincoln epidemic was the absence of diarrhœa. Of 192 patients, only 24 suffered from anything approaching diarrhœa. Of these 24, in six patients the diarrhœa was profuse, in 11 it was medium, and in seven it was slight. More that 70 per cent of the patients suffered from parsistent constipation and this was treated by soap-and-water or olive-oil enemata or by the administration of castor oil by the mouth. These measures invariably relieved the symptom in question and in no case did any untoward result follow their use.

Hæmostatics.—As 33 cases of bad hæmorrhage occurred with eight deaths one had ample material upon which to estimate the relative value of hæmostatics. Various new drugs, such as adrenalin, were used. These preparations did not give very satisfactory results and were eventually discarded in favour of pilula plumbi cum opio (B.P.).

Dietetics.—The dietetic treatment of typhoid fever is a subject upon which so much has been written that if I had not what I believe to be a fresh experience to record my remarks would have been very brief. It frequently happened that during what was estimated as being the third week of typhoid pyrexia the patient's strength was at the lowest possible ebb. In these cases it was felt that in addition to the use of stimulants, which on account of their tendency to increase the cerebral symptoms had to be used with great caution, some strengthening of the milk diet must be resorted to. In this connexion an extensive trial was first of all made with a number of so-called bland meat proteid, albumose, and peptone preparations. It was found that these were ill borne by the patient and, in the main, were followed by an increase in abdominal pain and distension, in most cases culminating in diarrhœa, sickness, and even an increase in pyrexia. Subsequently a trial was made of various milk foods, especially of those consisting of either simple milk proteid or foods the essential basis of which was milk and farinaceous material partially or entirely converted by the action of a ferment into a soluble form. My experience with these latter foods was that they were of distinct value after the temperature had been normal for from six to eight days. I made several attempts to use them at an earlier date during the continuance of slight pyrexia but invariably found that they caused abdominal distension and discomfort, and in two cases definite increase of pyrexia. I also determined to give sanatogen a trial. It was given in two teaspoonful doses three or four times a day and was added to the milk according to the directions supplied. The cases in which it was at first used may be divided into three classes; first, those whose temperature had been normal for a few days before the treatment was started; secondly, those patients who still had a continued evening pyrexia ranging from 100° to 101°; and thirdly, those in the height of pyrexia. Owing to the extreme difficulty of obtaining accurate clinical histories it is impossible to say at exactly what period of the disease this second class was but apparently it ought to have been convalescence but for the severe asthenia. In the first class f patients, about 15 in number, the condition improved apidly, but no deduction of value can be drawn from the fact, as the patients were convalescing. In the second class f patients, some 20 in number, the temperature range became less and the asthenia improved. So far as concerns the third class there was at any rate no increase in pyrexia or gastro-intestinal disturbance.

Lincoln.

CHARCOT'S DISEASE OF THE ANKLE IN A CASE OF GENERAL PARALYSIS OF THE INSANE.

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AND
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PATHOLOGIST TO THE QUEEN'S HOSPITAL, BIRMINGHAM.

THE following case of Charcot's disease of the ankle occurring in a man with symptoms of early general paralysis of the insane met with in the practice of one of us seems worthy of being recorded.

The patient, aged 37 years, complained of swelling of the left ankle together with weakness of the foot and some pain on walking. The history of the case showed that the patient had led a dissipated life and until the last six months, during which he had been a teetotaler, he had for years consumed upwards of a pint of spirits a day. At the age of 27 years he had had an attack of gonorrhœa and when he was 32 years of age he had contracted syphilis. A year later there was a sudden onset of cerebral thrombosis which left him partly paralysed on the right side. The paralysis lasted for several months and right-sided movements were still performed awkwardly. For the last three years he had had shooting pains in the shoulders, the shins, and the feet; the pain used to come on suddenly and to last for about half a minute. Six months ago his memory began to fail and for two or three months he had complained of precipitate micturition and occasional incontinence of urine. Three months before coming under observation his left ankle suddenly and without trauma became swollen. At first there was some pain but this soon subsided. The ankle remained swollen and was weak when weight was put upon it.

On examination the patient was found to be a well-nourished, powerfully built man. His mental condition was one of childishness; he was cheerful, readily interested, and on account of his simplicity became the butt of his friends. The speech was slow, awkward, and blurred, but no syllables were missed and there was no aphasia. The special senses were normal, there being no optic atrophy. The eyes moved consensually in all directions with a slight tremor on extreme deviation. The pupils were equal and of normal size; they reacted feebly to light and normally on accommodation. There was no anæsthesia of the face and the muscles of the jaw were normal. In repose the face was rather vacuous and expressionless, but on being addressed his face lighted up. The frontalis and orbicularis muscles acted equally and well; voluntary action of the zygomatic muscles was unequal, being more marked on the left side. When smiling the right side of the mouth always moved before and more strongly than the left. The palate was normal. The tongue was not atrophic; it deviated to the right and its movements were spastic. There was some general slight weakness of the right arm; this was especially marked peripherally in the finer movements of the hand which were all stiff and awkward. The movements of the left arm were imperfect but power was good. The respiratory movements were more marked on the right side both above and below. The abdominal muscles all moved well but were a little spastic. There was considerable rigidity of the legs, rather more marked on the right side than on the left; in the left leg there was slight atrophy of all the muscles below the knee. The muscles of both legs were weak but those of the left leg much more so than those of the right. The muscle sense was very deficient in the left leg but was normal elsewhere. The left ankle-joint was much swollen and the foot was displaced. The malleoli were greatly thickened and the distance between them was increased. The astragalus also showed thickening, as did the ligaments and the synovial membrane of the ankle-joint. There was slight excess of fluid in the joint. No osteophytes could be felt. The foot as a whole was displaced outwards and the sole was markedly everted. The ankle could not be flexed to a right angle but it allowed of full extension. The foot could be inverted normally and everted to much beyond the normal. Manipulation of the foot caused no pain and there was no tenderness. On passive movement some bony crepitus could be felt. No other joints were affected. The arm-jerks were all brisk, the right being more so than the left. The right abdominal reflex was absent and the left was diminished. The right knee-jerk was much increased; the left was also somewhat increased. There was slight ankle clonus on the right side but none on the left. The left ankle-jerk was present. The right plantar reflex was typically extensor and the left was extensor with sharp response. Micturition was precipitate but there was no incontinence. Defæcation was normal.

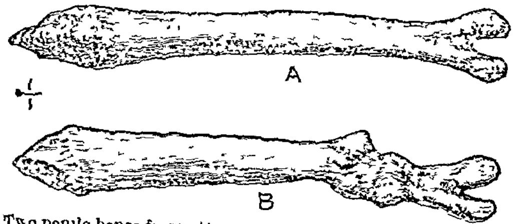
As regards the ankle-joint there can be little doubt that it was of the type of arthropathy described by Charcot in certain nervous diseases. The disease affected a single large joint came on suddenly without signs of acute inflammation and without marked pain, and at the time when the case came under observation there was great structural change in the osseous and ligamentous components of the joint, which was much enlarged and greatly deformed and yet was free from pain and tenderness. The chief point of interest was to determine what was the nervous disease underlying the affection of the ankle. The commonest diseases which are associated with Charcot's disease of the joints are tabes, multiple neuritis, and syringomyelia, but a careful examination of the patient sufficed to exclude the presence of these conditions. Clearly the hemiplegia was not a direct causal factor in the joint change, for the paralysis had been confined to the right side, whilst the affected joint was on the left. The patient gave a history of progressive mental impairment, shooting pains, and precipitate micturition, and on examination there were found Argyll-Robertson pupil and besides the signs of old hemiplegia some evidence of generalised spasticity. These occurring in a patient who has suffered from syphilis suggest a diffuse cerebral degeneration such as characterises general paralysis of the insane.

Birmingham.

FRACTURE OF THE OS PENIS IN OTTERS.

By J. BLAND-SUTTON, F.R.C.S. ENG.,
SURGEON TO OUT-PATIENTS AT THE MIDDLESEX HOSPITAL.

THE otter (*Lutra vulgaris*), like so many other mammals belonging to the order carnivora, possesses a bone in its penis. This bone (represented of natural size in the accompanying illustration) is situated at the end of the penis and the two divergent terminal knobs are invested with the reflexion of the prepuce which covers the glans; the termination of the urethra emerges in the interspace of what may, for convenience, be called the terminal condyles of the bone. The penile bone of the otter is extremely hard and Mr. Gerald Uthwatt, who is keenly interested in otters and in hunting them, assures me that it is not uncommon to find examples of this bone which have been broken and healed. He further supported his statement by sending me a specimen. It is difficult to account for such a fracture unless one knows the habits of otters. It appears that when these animals fight each tries to seize the penis of its adversary and when we remember what powerful jaws and sharp teeth otters possess



Two penile bones from otters. A, The normal bone. B, One that has sustained a fracture and has united soundly.

the damage to the bone is not a matter for surprise. The normal bone and the damaged, but repaired, specimen are in the museum of the Royal College of Surgeons of England.

Brook-street, W.

Reviews and Notices of Books.

Diseases of the Liver, Gall-bladder, and Bile-ducts. By H. D. ROLLESTON, M.A., M.D. Cantab., F.R.C.P. Lond., Physician to St. George's Hospital, London; formerly Examiner in Medicine in the University of Durham; and Fellow of St. John's College, Cambridge, England. Philadelphia, New York, and London: W. B. Saunders and Company. 1905. Pp. 794, with 97 figures in the text and seven coloured plates. Price 25*s.* net.

As a work of reference on the subjects dealt with in it Dr. Rolleston's book leaves little to be desired. It is conveniently arranged and easy of reference, the symptoms are in all cases well described, the morbid anatomy and pathology of the various conditions are exhaustively discussed in a luminous and critical manner, while diagnosis and treatment are given in considerable detail. The work is enriched by abundant brief descriptions of illustrative cases, many of them from the author's own personal experience, and in each case with reference to the literature. Dr. Rolleston has wisely refrained from adding a long bibliography to his volume but gives at the foot of each page references to the authorities quoted in it, a much more useful method in a work of reference. As might be expected from a physician of Dr. Rolleston's wide pathological experience, the morbid changes observed in each condition are very carefully described, often with great detail, and are illustrated by a large number of excellent figures, microphotographs, and coloured plates, for, as Dr. Rolleston observes in his preface, "without a grasp of these (morbid changes) it is impossible to make a rational diagnosis, to treat the clinical manifestations in a satisfactory manner, or to give a reliable prognosis." In his discussion of the pathology of many obscure conditions Dr. Rolleston is always interesting and frequently original and suggestive in his ideas. He rightly attributes great importance to the antitoxic or protective function of the liver—that is, its power of arresting poisons absorbed from the alimentary canal, or at least of rendering them innocuous, and to "hepatic insufficiency" or interference with this function he attributes many of the symptoms of hepatic diseases, notably in cirrhosis and complete biliary obstruction.

In reviewing a work of such magnitude it is impossible to do more than refer to some of the principal sections. Excellent accounts are given of the condition of emphysematous or "foaming liver," of the corset liver, and of wandering liver or hepatoptosis. An important chapter is devoted to the discussion of functional disease of the liver. Disturbances of hepatic functions are admittedly common in hepatic disease but the question of the existence of a primary functional disorder of the liver is still unsettled, and Dr. Rolleston sums up by stating that "in the present state of our knowledge its existence is almost impossible to recognise with accuracy." Diseases of the vessels of the liver are considered in some detail, including thrombosis of the portal vein and suppurative pylephlebitis, which is considered separately from portal pyæmia or multiple embolism from the portal vein radicles. In his discussion of chronic venous congestion of the liver or "nutmeg liver" we are glad to find that Dr. Rolleston doubts the existence of a "cardiac cirrhosis" and regards the fibrous tissue found in such cases as a secondary fibrous replacement following the atrophy of the liver cells in the central part of the lobule.

Acute congestion of the liver, acute hepatitis, and tropical abscess are described and differentiated from one another. In the account of tropical abscess its relation to dysentery and the part played by the amœba coli in its pathogenesis are included and a hæmatogenous origin is suggested for some of the pulmonary abscesses found complicating hepatic abscesses, since amœbæ have been found in the pulmonary artery.

The account given of universal chronic perihepatitis lays great stress on the frequency of its association with arteriosclerosis and granular kidneys, and the rarity of its association with true cirrhosis of the liver. The distinction between this condition and that of cirrhosis so ably worked out by Dr. W. Hale White is clearly defined.

The section dealing with cirrhosis is very exhaustive, extending to over 160 pages, and is one of the best parts of the work. A classification of cases of cirrhosis capable of being used in practice is much to be desired, since the anatomical classification into multilobular, monolobular, pericellular, mixed and sporadic given by Dr. Rolleston is, as he himself points out, chiefly of pathological interest. For clinical purposes he describes two principal types—(1) ordinary or common portal cirrhosis with hæmatemesis early in its course and ascites late, and with multilobular fibrosis of the liver and only moderate enlargement of the spleen; and (2) the biliary type with jaundice for its most marked feature, both liver and spleen being very large and the fibrosis in the former being mixed, diffuse, or monolobular.

In discussing the rôle of alcohol Dr. Rolleston comes to the conclusion that it "gives rise to cirrhosis in a secondary manner either by leading to the production of sclerogenic poisons or by enabling such poisons to have full sway on the liver," and that other factors must also be taken into account, since alcohol *per se* simply leads to fatty degeneration. Again, the possibility of cirrhosis, or at any rate some forms of cirrhosis, being due to micro-organisms must always be borne in mind, as also that poisons and perhaps micro-organisms may reach the liver by the hepatic artery or in the fœtus by the umbilical vein. Many of the symptoms, Dr. Rolleston suggests, may be due to hepatic insufficiency—notably some of the hæmorrhages, the ascites, the dropsy, and the final toxæmia. The processes of compensation, especially the new formation of the hepatic cells forming what Dr. Rolleston calls the pseudo-bile canaliculi and the collateral circulation between the portal and systemic venous systems, are described and the indications for, and limitations of, the Talma-Morison operation are discussed in some detail. Dr. Rolleston is of opinion that this collateral circulation may become too free and so permit the circulation of toxic substances absorbed from the intestines without allowing them to be dealt with first in the liver. The account of biliary cirrhosis is a useful summary of what is at present known about that comparatively uncommon disease. The name is perhaps an unfortunate one but has become firmly established and is preferable to the ambiguous term hypertrophic cirrhosis sometimes applied to it.

The sections on tubercle, syphilis, and malignant disease of the liver are each of them exhaustive; that on actinomycosis or streptothricosis is, however, less detailed. In the account of congenital syphilis we are glad to find an account of what Dr. Rolleston calls parasyphilitic cirrhosis—that is, a polylobular cirrhosis occurring in syphilitic children induced by other causes—an important condition which has hitherto attracted very little notice. Diseases of the gall-bladder and bile-ducts form the concluding sections of the volume and are carefully and systematically described. The part played by catarrhal and infective processes in the production of gall-stones is carefully considered in the section on cholelithiasis.

A few typographical errors have escaped correction and the adjective "tuberclic" used on p. 191 does not commend itself to us but the book is well written and well produced and we can cordially recommend it as a work of reference containing a mine of valuable information and of suggestive ideas.

Diseases of the Blood (Nothnagel's Encyclopedia of Practical Medicine; English edition). By Professor Dr. P. EHRLICH, Professor K. VON NOORDEN, Dr. A. LAZARUS, and Dr. F. PINKUS. Edited, with additions, by ALFRED STENGEL, M.D., Professor of Clinical Medicine in the University of Pennsylvania. Philadelphia and London: W. B. Saunders and Co. 1905. Pp. 714. *Price 21s. net.*

THE present volume of the American edition—for although it is called the English edition it is written in the American dialect—of Nothnagel's well-known Encyclopædia suffers perhaps more than most of those already issued from the conditions under which it is produced—the re-editing of a series of important monographs after the lapse of a certain period of time, combined with the attempt to introduce into the text an account of researches carried out in the interval. Our knowledge of the pathology of the various conditions signalised by changes in the composition of the blood is at present in a very rudimentary state, in spite of the immense amount of labour which has been expended in attempts to elucidate the problems involved. The work of Professor Ehrlich and his pupils has done much to lay a foundation upon which to build, but many of the views put forward by these observers have failed to command universal consent and the tendency of recent work has been on the whole rather antagonistic. Hence the attempt of the editor of the present translation to incorporate the results of later researches with the original articles has been unusually difficult and the result is to produce a somewhat confusing impression on the mind of the reader. It is, indeed, easier to indicate what we do not know than what we do know with regard to the physiology and the pathology of the blood. We do not know the life-history of the red or of the white corpuscles with any approach to accuracy. The source of the erythrocytes in the bone marrow is fairly well ascertained but as to their length of life and their seat of destruction we are quite ignorant. Evidence is accumulating to show that the marrow is one of the birthplaces of the leucocytes, but some of these cells almost certainly originate in the lymphatic glands, while the relations of one form of leucocyte to another are still a matter of controversy. The functions of the spleen are equally undetermined, though it has been clearly proved that this organ is not essential for life. In such circumstances it is not surprising that diseases of the blood form an ill-understood group of affections.

The volume before us opens with an account of the normal and pathological histology of the blood, written by Professor Ehrlich and Dr. Lazarus. This is followed by sections upon Secondary Anæmia, the result of hæmorrhage, and upon Pernicious Anæmia, by Dr. Lazarus alone. In the account of the latter much is made of the existence of megalocytes (large red corpuscles) as the distinguishing feature of the disease. The well-known excess of hæmoglobin as compared with the number of corpuscles is explained as due to the size of the latter. As defined in this article pernicious anæmia is clearly not a single "disease," since the form of anæmia due to the bothriocephalus latus is definitely included under the term. It seems fairly clear that this parasite acts by means of a toxin, and as the blood-picture is practically the same in the ordinary form of pernicious anæmia it is natural to conclude that it, too, is toxic in origin. But of the nature of the poison in so-called "idiopathic" cases nothing certain has been discovered. Some of the features of the disease, such as the diminution in the number of the leucocytes and the ulcers which in some instances affect the Peyer's patches of the intestine, seem to point to an action closely resembling that of the typhoid toxin.

The article on Chlorosis is written by Professor von Noorden and is, from a practical point of view, the best in the volume. The treatment of the condition is very fully described. The author's views as to the origin of chlorosis in a defect of an internal secretion which should be furnished by the ovary are well known and form one of the most interesting speculations as to the cause of this affection; it must, however, be recognised that it is only by excluding certain cases occurring in the male sex, which exactly resemble chlorosis in clinical features, that such a theory can be upheld. Professor von Noorden considers that the function of the ovarian secretion is to stimulate the action of the bone marrow in forming red corpuscles and that the therapeutic effect of iron is due to its supplying an alternative stimulus.

If little is known of chlorosis and of pernicious anæmia, still less would seem to have been ascertained with respect to the pathology of leukæmia. In the book before us the usual division into lymphatic leukæmia or lymphocythæmia and myeloid or spleno-medullary leukæmia is maintained. The former is divided into acute and chronic forms, and pseudo-leukæmia, better known in this country as lymphadenoma or Hodgkin's disease, is included under this heading. It is noteworthy that in acute leukæmia there usually occur a considerable number of large uni-nuclear leucocytes, here classed as large lymphocytes, which are not very sharply distinguished from the hyaline or myeloid leucocytes characteristic of spleno-medullary leukæmia. We must be content at present to admit that the classification of these maladies is as unsatisfactory as their pathology. Together with the curious condition called chloroma they form a group of allied affections, but the relations of the members of the group to one another and to other diseases such as sarcoma are quite undetermined.

On the whole we may say that this work offers much valuable information to all who are specially interested in conditions of the blood. The bibliography appended to the articles is very complete and the editor's additions bring the matter well up to date. It is hardly a book which will appeal to the busy practitioner or to the student, since with the exception already noted treatment is not a strong feature, while the obscurity of the subjects dealt with admits of no clear dogmatic conclusions being reached. There are a good many misprints scattered about in addition to certain unusual forms of words, such as "abolishment," "unexceptionally" (for "invariably"), and phrases such as "a few swallows of wine," or "The author had Rethers publish......," which we must regard as Americanisms. The following sentence seems somewhat involved: "That they [nucleated corpuscles] suddenly appear in large numbers in a similar manner to the 'blood-crises' first described by *the authors*, as Neudorfer mentions, *the former has* never seen in spite of diligent investigation, although *we has* seen this quite frequently in other forms of anæmia." The italics are ours. In general the translation is moderately well done. There are some good illustrations of blood conditions.

Manual of Antenatal Pathology and Hygiene: The Embryo. By J. W. BALLANTYNE, M.D., F.R.C.P. Edin., F.R.S. Edin. Edinburgh: William Green and Sons. 1904. Royal 8vo, pp. 697. *Price 21s. net.*

THE first volume of this manual dealt with the diseases of the fœtus; the second is concerned with the pathology of the embryo and with a short sketch of the morbid processes which may be initiated or determined in germinal life. As Dr. Ballantyne points out, the pathology of the embryo is synonymous with the subject of teratology, or at least with that part of it which deals with single as opposed to double monsters. One of the main features of the present volume is that in it the author has dealt very fully indeed with the subject from the side of causation, and it represents the first connected attempt to deal with the genetic aspect of abnormal formations. In any consideration of the pathology of the embryo it is necessary first to consider its physiology, as only in this way can a clear conception of the nature of the morbid processes affecting it be obtained. The physiology of the embryo differs very markedly from that of the fœtus, since to obtain a clear idea of it we must think of the organs not as performing any functions but as in process of formation. The only function of the embryo is organogenesis, and there can be no anatomy of the embryo apart from its physiology. As a necessary corollary of this statement the chief effect of pathological processes on the embryo is the malformation of its organs. At the same time it must be remembered that all that is teratological does not of necessity belong to the embryonic period; thus some malformations undoubtedly arise in the fœtal period of life and united twins, for instance, are probably determined in the germinal period of ante-natal life.

If the abnormal development of the embryo or its teratology is to be understood then a start must be made with a study of its normal development or embryology. Inasmuch, however, as human embryology is incomplete, so our knowledge of human teratology must also be incomplete. As a necessary preliminary therefore, Dr. Ballantyne, after pointing out these facts in the first chapter of this work, devotes the next five chapters to a sketch of the most important facts of human embryology. By this term he means the science which treats of the origin and formation of the parts and organs of the embryo; and it includes a study of all the changes through which the embryo passes from the appearance of its first rudiments up to the transformation of the "transition organism" into the recognisably human embryo. In the section on the general principles of embryology Dr. Ballantyne points out very clearly the many difficulties which beset us when we endeavour to form some idea of the nature of the various processes and of the series of changes in the development of the embryo to which the term ontogenesis is usually applied. As he truly remarks, a fact which many writers have forgotten, there is a specificness in the ontogenesis of different types of animals, and that the embryo of the chick differs in very many particulars from that of the mammal cannot be too clearly remembered. Further than this, a great principle to be always borne in mind in our studies of embryological and teratological processes is the so-called principle of biogenesis, or the fact that ontogenesis never follows a simple or direct route but reaches its end by detours, and, lastly, that ontogeny does not give an epitomised recapitulation of evolutionary progress, it is not therefore an epitomised phylogeny. In an attempt to describe the period of antenatal existence, which extends from the appearance of the first rudiments of the embryo up to its transformation into the neofœtus, we are at once met with the difficulty as to when may it be said that the embryonic life of the new organism begins. As a probable conjecture Dr. Ballantyne supposes that three and a half days after coitus impregnation occurs and that one week later embryonic existence commences with the appearance of the first rudiments of the embryo and that it ceases at the end of the sixth week when the embryo assumes a human appearance. In the third to the sixth chapter he considers this period of development. Having completed in this way a short sketch of embryology in order he is then in a position to pass on to a consideration of embryology in disorder or teratology.

In the seventh chapter the general principles of the pathology of the fœtus are dealt with and it is pointed out that their peculiarities may be regarded as determined by the special physiological conditions of the embryonic period of life and by the transmission into embryonic life of morbid states acquired in the germinal period. The three most important factors to be considered are the physiological, the amniotic, and the germinal; for just as morbid causes in fœtal life act chiefly through the placenta so similar causes in embryonic life act chiefly through the amnion. The environment of the embryo is represented by the amnion and while the physiological factor and the amniotic factor serve to explain most of the phenomena of teratology, yet there are some still to be explained and possibly the solution of the problem lies in the germinal factor. In the next three chapters the various theories of the causation of monsters are considered or the subject of teratogenesis. A full description of the many theories of the past are given, including the supernatural and the natural, and then the author passes on to a discussion of the mental causes or the belief in the influence of the maternal or paternal imagination in the production of monstrosities. There is a very good account of this theory as it has prevailed from the very earliest times up to the present day and, as Dr. Ballantyne truly says, it is extraordinary whether its truth be affirmed or denied and wonderful both in its wide extension in space and time, and in its firm hold both on the minds of the profession and the laity. That it has had a baneful effect upon the progress of antenatal pathology there can be no doubt but whether it is true or not is a matter yet unsettled.

Does a definite impression upon a pregnant woman's mind ever or often cause a defect in the fœtus closely resembling the thing producing the impression? Has the state of the mother's mind any effect on the unborn infant's development? The first question Dr. Ballantyne answers in the negative and the second affirmatively. While he is prepared to admit that the mother's nervous system is often in a peculiar state during pregnancy, yet he regards it as impossible that the sight of a mutilated individual can be so transmitted mentally by the mother as to cause a fœtal amputation resulting in a similar deformity in utero. That strongly marked mental states of the mother may affect the development of the fœtus in utero he admits and to this extent he believes in the old doctrine of maternal impressions. It must be remembered that the results of such mental states are not always necessarily teratological but may be seen in the production of sterility, abortion, congenital debility, or retarded growth.

While some of the teratogenic theories of the past are represented by modern developments, so some of the present-day views spring from very ancient notions indeed. The idea that antenatal deformities may be due to causes acting mechanically on the fœtus is to be found in the writings of Hippocrates and it is one of the most important theories of the present time. In considering it we must remember that the pressure theories are of many kinds and that the form of pressure varies equally widely in the writings of different authors. For this reason Dr. Ballantyne considers the subject under the two heads of pressure exerted upon the fœtus from the outside or from the inside of the mother's abdomen. The question of amniotic pressure is placed under the head of disease as a cause of fœtal monstrosities. The view that diseases are the cause of deformities or the nosological theory of teratogenesis may be regarded from two standpoints: first, that it is diseases of the fœtus itself which are the cause of the deformities; and secondly, that it is through disease of the fœtal membranes, and especially the amnion, that these anomalous conditions are set up. The three different ways in which the amnion may produce fœtal deformities—viz., by disease, by pressure, or by arrested development—are all discussed at considerable length, and, as Dr. Ballantyne justly says, our conceptions of the manner in which the amnion acts must be modified to some extent in view of the recently ascertained facts as to its development. Its presence fully formed in the earliest human ovum yet described indicates that it may be capable of performing functions at a date before the embryo has passed through the formative or embryonic stage and that it may be quite accurate therefore to speak of disease of the amnion as a cause of deformities, as well as its defective development and the pressure thus produced upon the plastic embryo.

The last theory which has to be considered is the embryological one and in association with this there is a most excellent summary of the work done by many observers in the domain of experimental teratology. What part is played by the action of various poisons and toxins in producing defects in the amnion and whether or not some monstrosities such as those of excess and the double monsters are not due to morbid causes acting upon the blastoderm or even upon the ovum or the spermatozoon before or during impregnation remains yet to be determined. In the classification of monsters the author has adopted one founded upon that selected by Taruffi in his well-known "Storia della Teratologia." In this classification all teratological phenomena are divided into two main divisions, the monosomatous terata in which only a single individual is involved and the polysomatous terata in which two individuals (or at least something more than one) are involved. The greater part of the remainder of the volume is devoted to a description of the various types of monsters. These chapters, based as they are upon the author's unrivalled knowledge of the literature and his exceptional experience of actual specimens, are models of completeness and scientific accuracy and teem with numerous facts and speculations. The last three chapters, perhaps the most interesting in the book, are concerned with a sketch of the pathology of the germ. Dr. Ballantyne aptly names this unknown field the hinterland of antenatal pathology. Our knowledge of it is of the scantiest and our means of improving it are of the slightest. For those who wish to obtain some idea of what is known of this subject, including as it does the vexed questions of the origin of double monsters and of morbid heredity, we can recommend a study of these most fascinating chapters.

In finishing our sketch of this important work we cannot help regretting that Dr. Ballantyne has not been able to carry out his original intention of treating the pathology of the germ in the same complete way as he has that of the fœtus and the embryo. The work would have been one of great value and interest and the three volumes would have formed a trio well worthy of the high reputation of their author. This volume forms a fitting sequel to the first and it only remains for us to congratulate Dr. Ballantyne on the production of a work which stands quite unrivalled in this branch of medical science and which is a credit to him and to the school of medicine to which he belongs.

LIBRARY TABLE.

Nursing in Eye, Ear, Nose, and Throat Diseases. By A. EDWARD DAVIS, A.M., M.D., Professor of Diseases of the Eye in the New York Post-Graduate Medical School and Hospital; and BEAMAN DOUGLASS, M.D., Professor of Diseases of the Nose and Throat in the New York Post-Graduate Medical School and Hospital. With 32 illustrations. Philadelphia: F. A. Davis Co. 1905. Pp. 318. Price $1.25 net.—This little book is sensibly written by competent men and is well adapted for those whom it is intended to instruct—nurses, students, and those general practitioners who have not had the time or the opportunity in their student days of attending or holding office in ophthalmic wards or in those devoted to the ear, nose, and throat. The importance of sterilisation of all instruments and dressings is, of course, dwelt upon by both authors. Dr. Davis especially guards his readers against the employment of any of the quack nostrums so frequently recommended by unprofessional people for what is commonly regarded as a "cold in the eyes," a condition that may mean anything, as Dr. Davis says, from a cinder on the cornea to the most virulent cases of diphtheritic conjunctivitis. The method of applying a Buller's shield is well given. Wet poultices of all kinds are condemned, but we do not notice any recommendation of a remedy that is sometimes of great value—dry heat, applied in the form of a bag of chamomile flowers in cases of chronic inflammation of the sclera, cornea, or other tunics of the eye. Dr. Davis employs a 10 per cent. solution of nitrate of silver in the early stages of purulent ophthalmia, and of the more recently introduced preparations of silver he prefers argyrol, which in such cases should be of the strength of 250 grains to the ounce. He rightly cautions the practitioner against using the peroxide of hydrogen in cases of croupous and diphtheritic conjunctivitis. Whether the employment of jequirity bean dust by either nurse or practitioner is ever advisable may be considered more than doubtful. It is a dangerous remedy in unskilful hands. The modes in which various remedies that are in common use should be applied to the eye are, of course, fully given, with brief notices of their effects. Massage of the eye, it is observed, is sometimes practised, the chief affections in which it has been found serviceable being blepharitis, chronic conjunctivitis, ecchymosis of the lids and conjunctiva after blows, twitching of the orbicularis, and phlyctenular ophthalmia. It is stated to be useful in cases of non-inflammatory glaucoma but in view of the difficulties of diagnosis in such cases it seems hardly a fit remedy to be recommended to a nurse. Dr. Douglass's section emphasises the importance of cleanliness and gives the following as the procedure practised by many of the surgeons at the New York Post-Graduate Hospital. "1. The hands and arms are first thoroughly scrubbed with soap and water with a brush. 2 Dipped into alcohol (95 per cent.) for one minute. 3. Dipped into permanganate of potash solution (2 per cent.) for from three to five minutes. 4. Bleached in a saturated solution of oxalic acid until all the stain from the permanganate is gone. 5. Dipped into a solution of bichloride of mercury (1 in 1000) for one minute. The hands are then dried with a sterilised towel." The reader will find well-written sections on nursing in mastoid cases, the modes of arresting nasal hæmorrhage, and the diet after operations on the nose and the throat.

JOURNALS AND MAGAZINES.

The Medical Magazine.—The issue for June contains a good account of papers read at the recent Conference on School Hygiene and is consequently of more than ordinary value to all interested in that subject. The matter is approached from various sides, amongst others by Dr. A. K. Chalmers, dealing largely with the question of school children's diet and clothing, while Dr. Arthur Newsholme's remarks refer principally to the question of infections and their avoidance. The presidential address by Sir Arthur Rücker considers the two opposing views of the pro- and anti-classics educationists and touches on the ever-present examination question. This number of the magazine has, further, an excellent article on the Operations for Cure of Prostatic Enlargement by Mr. John G. Pardoe.

The Practitioner.—A clinico-physiological article upon the Breathlessness of Cardiac Origin from the pen of Sir Lauder Brunton opens a very good June number of this periodical. Dr. R. Saundby writes upon Cirrhosis of the Liver. In considering the flatulence that often accompanies cirrhosis he lays a stress that appears to us out of proportion upon the part played by atmospheric air swallowed during the taking of food. The prize essay of the month, on the Causation of Appendicitis, comes from Dr. F. C. Bottomley and is a capital little *résumé* of the subject. Mr. J. W. Thomson Walker gives a good account of recent methods of diagnosis in renal surgery.

The Royal London Ophthalmic Hospital Reports. Edited by WILLIAM LANG, F.R.C.S. Eng. London: J. and A. Churchill. Vol. XVI., Part I. June, 1905. Price 5*s*.—The articles contained in this number of the Ophthalmic Hospital Reports are the following: 1. On Renal Retinitis in Young Subjects and on the Relative Frequency of Juvenile Interstitial Nephritis in the Two Sexes, by E. Nettleship. 2. Observations on the Prognostic and Diagnostic Value of Retinitis in Diabetes, by E. Nettleship. Mr. Nettleship finds that the prognostic importance of the retinal changes in chronic renal disease in children is not less grave than in adults. Renal retinitis occurs almost twice as frequently in females as in males. He finds also that the retinal alterations in diabetes are less marked than in renal retinitis. Death results from the diabetes. 3. Primary Chancre of the Conjunctiva and Interstitial Keratitis, by E. Treacher Collins. 4. The Innervation of the Pupil, by J. Herbert Parsons, Curator of the Royal London Hospital Museum. In this article the numerous and various opinions that have been advanced in regard to the action of nerves on the movements of the iris are collected and it closes with an excellent bibliography. 5. Thrombosis of the Central Vein of the Retina, by George Coats. Mr. Coats gives the details of four cases which he has had the opportunity of observing microscopically. The article is an important one and is illustrated by plates showing the appearances seen.

New Inventions.

AN OPHTHALMOSCOPE.

RECENTLY I showed before the Ophthalmological Society a new ophthalmoscope made for me by Messrs. Weiss and Son of London. The instruments at present in use are so good that it would be an impertinence to suggest that they were capable of modification. That which I have designed is something quite different from any existing machine, so it has at least the merit of novelty. Fig. 2 shows the back of the instrument. There is a sight hole with indicators above and below it; that above the sight hole registers tens of dioptres, that below units. When the driving wheel is turned in either direction all the whole numbers of 70 consecutive dioptres pass beneath the sight hole. The range for concave lenses is from 39 dioptres to 1 dioptre, for convex lenses from 30 dioptres to 1 dioptre; there is of course a blank in proper place in the series. Despite this great range of dioptres there are only 15 actual glass lenses in the instrument. There are two discs or wheels carrying lenses which overlap at the sight hole. The larger or units-wheel is geared into the driving wheel and has ten holes; one is blank, and nine are glazed from –1 D. to –9 D. At one point of the rim of this units-wheel there is a finger-like projection. The smaller or tens-wheel has seven holes; one is blank, the others are glazed with +10, +20, +30, –30, –20, –10 dioptres: the blank lies between the two 10 D. lenses, and the two 30 D. lenses are beside each other. This tens-wheel has fixed to one face a spur-wheel of seven teeth; it is quite free from contact with the units-wheel except when the revolution of the units-wheel brings the finger-like projection on its rim upwards in line with the axis of the instrument, then this finger engages a tooth on the tens-wheel and pushes that wheel round one point—a seventh of its circuit. The tens-wheel is governed by a cam so that it only moves one point at a time and always stops accurately centred. The finger on the units-wheel is between 9 D. and O, so when this wheel is revolved as 9 D. disappears from the indicator and before O appears the next tens-lens in the series is automatically brought into position; the movement is repeated as the driving wheel is turned in either direction ad infinitum. It will be noticed that all the unit lenses are concave, whilst the tens lenses are both concave and convex; it follows that the dioptric value at the sight hole at any point is the algebraic sum of the two figures appearing in the indicators above and below the sight hole. The denominating numbers are engraved on the metal which carries the lenses and cannot be displaced, as is usual in England, convex lenses are marked with red indicators and concave with white. This mechanism I have utilised is known as the "Jumping indicator" and was invented by Harding, an engineer of Leeds, about 30 years ago. It is almost human in its working and has been successfully applied to numerous speed indicators for ships cycles and carriages, turnstiles, meters and chronographs There is no doubt about its stability and reliability, whils the movement is so "sweet" (to use the engineer's term) that it is hardly possible to tell by the touch when the tens-wheel is being moved. For rapidly setting the lenses at any desired point of the 70 D. range there is provision for driving the tens-wheel directly by a touch of the finger. The mirror arrangement is new; it is a combination of the rotatory mirror, the reversible double mirror, and of Loring's tilting mirror. There are plane and concave mirrors placed back to back, so arranged that they are capable of universal movement and tilting, and are equally available for direct or indirect examination of the eye or retinoscopy. By an "embrasure" form of sight hole the tunnel through the mirrors and their septum is reduced to the thickness of a single mirror, to the great advantage of the observer; further the mirrors are so hung that they are never flatly applied to the instrument; therefore it is almost impossible to break them by any of the ordinary accidents an ophthalmoscope is liable to, short of crushing violence. The driving wheel has been made of a large and convenient size and is fitted with a pupillometer and scotometer for the testing of colour vision A steel loop-shaped handle is part of the instrument and folds by a spring hinge; when it is folded it surrounds the mirrors and protects them, so that a case is not an absolute necessity When closed the ophthalmoscope measures only 3⅛ inches by 1¼ inches by ⅜ inch; its weight, including case, is under two and a half ounces. It is therefore the smallest complete refraction ophthalmoscope yet devised.

FIG. 1.

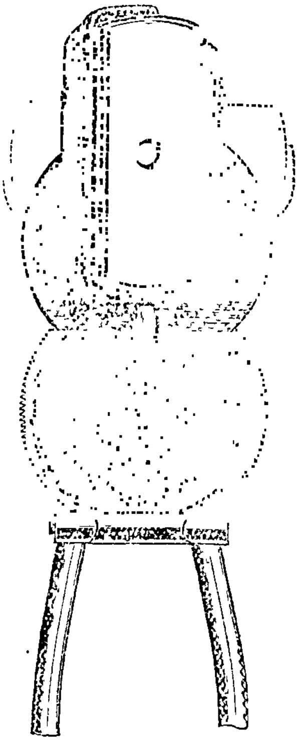
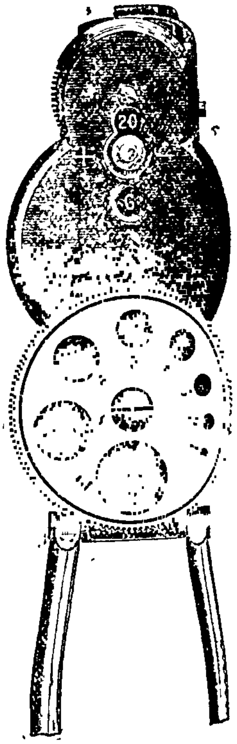


FIG. 2.



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MOUNT VERNON HOSPITAL FOR CONSUMPTION, NORTHWOOD.

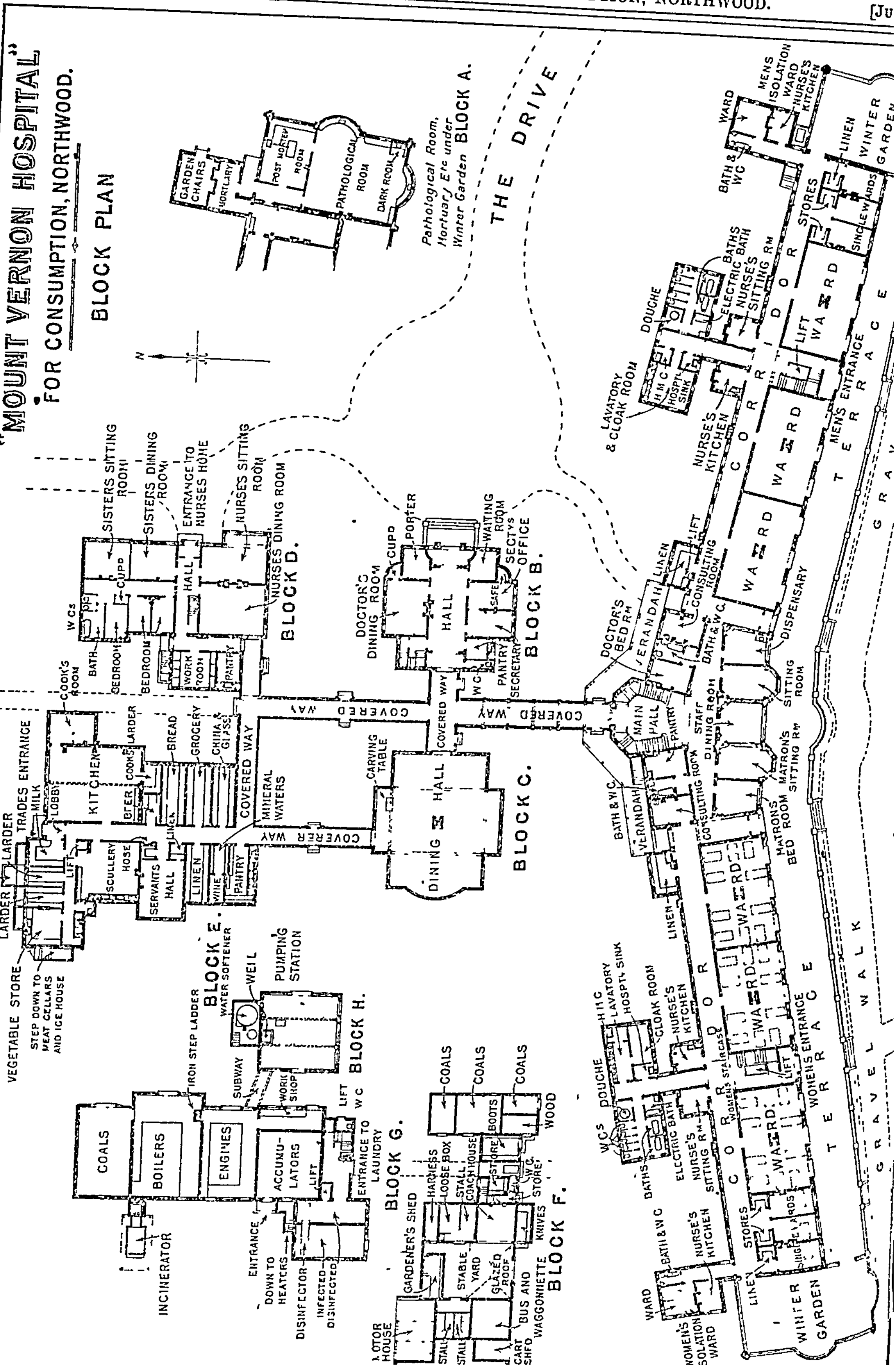
THE country branch of the Mount Vernon Hospital for Consumption has now been in actual working order for some months and about 60 patients are constantly under treatment. We therefore willingly availed ourselves of an opportunity of visiting the sanatorium and of inspecting the various buildings of which it is composed. The sanatorium was designed by Mr. Frederick Wheeler, F.R.I.B.A., and is situated upon an estate of 104 acres near Batchworth Heath, Middlesex, a distance of some 16 miles from London. The site is 375 feet above sea level, the soil being sand and gravel overlying chalk. The hospital is built on a southern slope and provides for the treatment of 114 patients (57 male and 7 female) and consists of eight separate buildings which are connected by means of covered ways. We reproduce a plan (Fig. 1) which shows the relative positions of the component parts of the sanatorium. The provision of such covered ways is highly commendable, for there are numerous objections to having the kitchens, laundry, nurses' apartments, and so on, entirely cut off from the wings in which the wards for the patients are contained.

The largest and most important of the buildings is Block A (Fig. 1) which may be termed the hospital proper. It consists of a central block of three storeys, having a central tower, with the wards arranged in extended wings on either side. This building has a south aspect and its length is 500 feet, the wings being placed at a slight angle. In the central portion of this block is situated the principal staircase. The ground floor comprises two consulting rooms, the dispensary staff dining room, and the private apartments of the resident medical officer and matron. Upon the first floor are the library and two reading rooms (for men and women respectively). The library is rightly not accessible to the patients but the books are passed through hatchways into the reading rooms. On the upper floor of this central block accommodation is provided for the hospital servants who each occupy a separate bedroom. On the north side of each wing and running throughout its entire length is a well-lighted and ventilated main corridor, nine feet wide, paved with marble terrazzo and having a green brick dado, presenting a very pleasing appearance. Opening from this corridor there are on the ground floor in each wing three large wards for ten beds each and three wards containing single beds. The wards have a cubic space of not less than 1400 feet per bed. They are lighted by large French casement windows which open, in the case of the ground floor wards, on to a broad terrace extending along the whole south front of the hospital. Similar windows in the wards above open on to a balcony which also extends along the whole south front and is set back several feet in order not to interfere with the light and circulation of air on the terrace below. These ward windows are fitted with latticed roller blinds which form a good protection against wind and rain. Further ventilation is provided by means of hopper-hung windows placed high up on the corridor side of the wards. Abundant access of fresh air is thus afforded. The walls of all the wards are treated with distemper above dadoes which are finished with Ripolin paint and the angles are, of course, everywhere rounded. An excellent plan of heating has been designed by placing in the centre of each ward a specially arranged Teale stove with double fire-places. We were informed that this method answers admirably.

In addition to the wards already described there are four isolation wards situated in spurs connected with the main corridors by cross-ventilated passages. They can be entirely shut off from the main wings and have separate external entrances. In connexion with each are provided a nurse's kitchen and lavatory. This arrangement is most complete and will be found valuable in cases of unexpected developments in the way of infectious diseases or complications necessitating the isolation of patients. In having wards containing several beds this sanatorium differs from most of the more modern buildings in which each patient has a separate bedroom. We were favourably impressed with the appearance of the wards. The space allotted is ample, and if a patient is confined to bed the sense of companionship, owing to other patients being in the same room, has certainly something to commend the large-ward system. From a purely theoretical point of view separate bedrooms are to be preferred, and it will be interesting in future years to ascertain whether the use of separate rooms as opposed to wards yields the more favourable statistics.

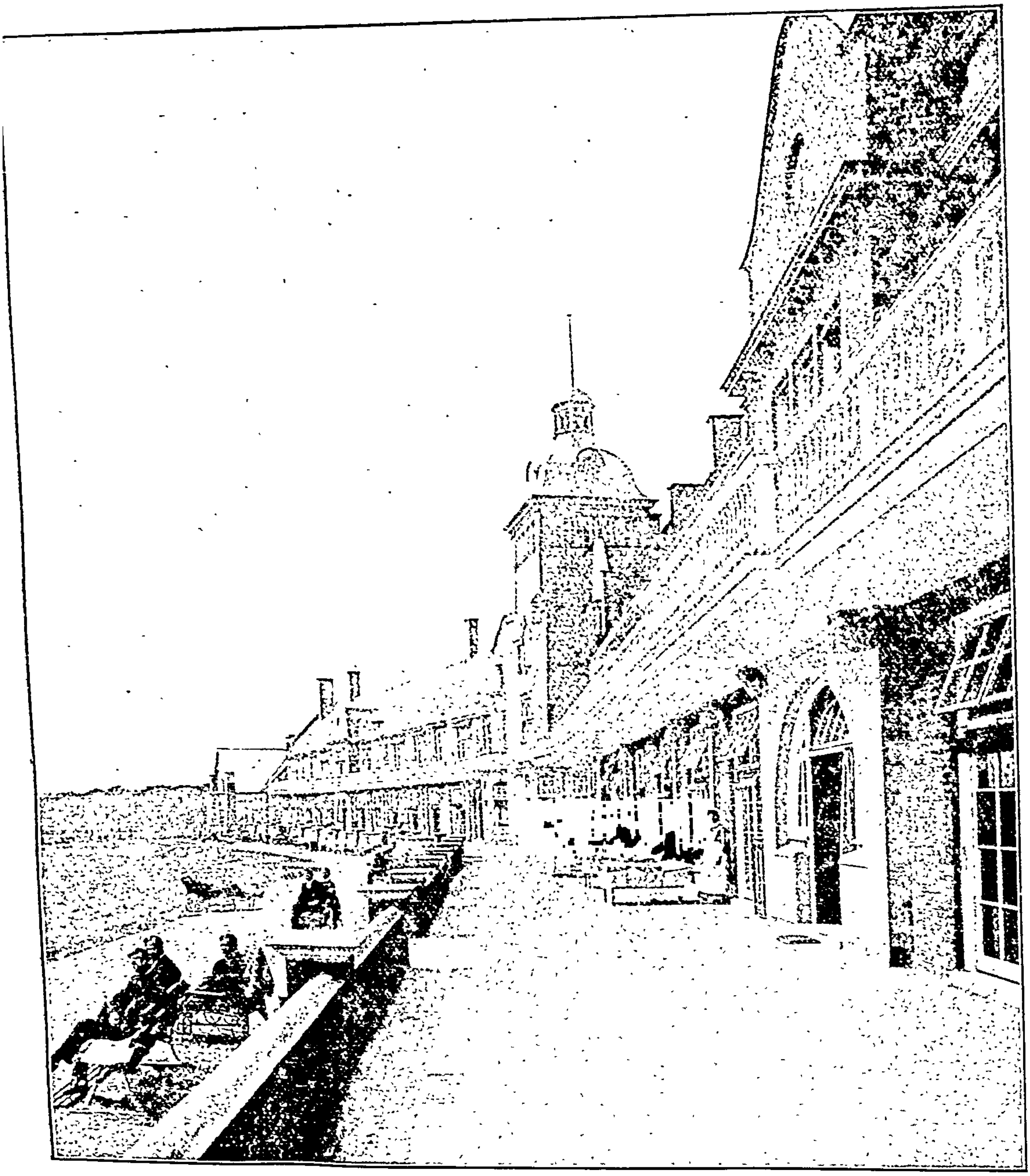
Connected with the main corridor by means of cross-ventilated passages are the sanitary spurs which are centrally placed on each floor and in each wing and are suitably fitted up with all modern appliances. A nurse's sitting room and kitchen are also provided near the same spurs. In addition to the staircases for patients lifts are provided in each wing. Large winter gardens are placed at the extreme end of each wing and can be entered both from the terrace and from the main corridor. Patients are thus able to obtain exercise in bad weather by walking along the terrace, sheltered by the balcony above, through the winter gardens, along the corridor and back to the terrace again. As there are no wind screens in the grounds this promenade is found very convenient when the patients are unable to use the grounds. On the first floor there is in each wing a recreation room. A piano is placed in each, also a billiard table for the men and a bagatelle table for the women. These recreation rooms are divided from the reading rooms by glazed screens. Advantage has been taken of a fall in the land to construct a subway under the main corridor; the lifts in connexion with the patients' staircases descend to the level of this subway, at the end of which, under the winter garden on the men's side, are placed the pathological and post-mortem rooms. The pathological laboratory is admirably fitted up and provided with appliances for research work. Block B, in which is situated the principal entrance, is the administration building and residence of the honorary physician-in-charge. The administrative department is placed on the ground floor and comprises a large entrance hall, board room, secretary's office, and other necessary rooms. Block C is the patients' dining hall and provides accommodation for about 250 persons. The patients sit at small tables, an arrangement which has several advantages. The hall is well lighted and ventilated but is placed rather too near the main block. The Langfield system of heating has been adopted and there is also a specially designed double Teale stove placed in the centre of the hall. The building is connected with the kitchen (Block E) by a special service corridor in addition to the main covered way. Block E, the kitchen building, is, in view of the anticipated future extension of the hospital, larger than is necessary for the present purposes. The cooking arrangements are well devised and the larder and store accommodation are ample. The milk room contains a 35 gallon steriliser. The nurses' home (Block D) is also arranged in accordance with modern ideas. Each nurse has her own separate bedroom and the night nurses' rooms are shut off from the rest of the rooms, so as to insure quiet during the day. Block F is the stable building where in addition to the usual requirements there is a motor garage for three cars. Block G is a building of considerable size, the laundry and electrical plant being housed therein. The laundry occupies the whole of the first floor of the building and is on a more extensive scale than would be necessary for an institution of this size, for here is carried on the washing not only of the sanatorium but also for the parent hospital at Hampstead. All the linen articles and the like are, of course, disinfected before being washed. It is not necessary for us to give a detailed description of the machinery and methods employed. Suffice it to say that all the arrangements are everything that can be desired and could scarcely be improved either in completeness or efficiency. The hospital is lighted throughout by electricity, the current being supplied from an extensive plant in duplicate, which is housed in the lower portion of Block G. There are three engines which are coupled to three shunt wound dynamos of the multipolar type. The battery is of the "Hart" type, of 116 cells, and having a capacity of 540 ampère hours when discharged at 60 ampères. Connected with Block G is an incinerator wherein are cremated all the house refuse and sputum of the hospital.

The water-supply is obtained from an artesian well which has been specially sunk. The pumping plant, which is placed in Block H, is designed to lift 2500 gallons of water per hour from the bore-hole, about 4500 feet deep, into a receiving tank immediately under the floor of the pump-house and thence to the reservoir tanks in the main building, the


"MOUNT VERNON HOSPITAL"
FOR CONSUMPTION, NORTHWOOD.
BLOCK PLAN
N
THE DRIVE
Pathological Room, Mortuary, Etc under Winter Garden BLOCK A.
GARDEN CHAIRS
MORTUARY
POST MORTEM ROOM
PATHOLOGICAL ROOM
DARK ROOM
SISTERS SITTING ROOM
SISTERS DINING ROOM
ENTRANCE TO NURSES HOME
NURSES SITTING ROOM
NURSES DINING ROOM
BLOCK D.
CUPD
HALL
W Cs
BATH
BEDROOM
BEDROOM
WORK ROOM
PANTRY
COOK'S ROOM
LARDER
BREAD
GROCERY
CHINA & GLASS
KITCHEN
COOKS
BEER
LOBBY
MILK
TRADES ENTRANCE
LARDER
ROLLING WAY
LARDER
LIFT
SCULLERY
HOSE
SERVANTS HALL
LINEN
LINEN
WINE
PANTRY
COVERED WAY
MINERAL WATERS
VEGETABLE STORE
STEP DOWN TO MEAT CELLARS AND ICE HOUSE
BLOCK E.
PORTER
CUPD
WAITING ROOM
SECTYS OFFICE
SAFE
DOCTOR'S DINING ROOM
HALL
BLOCK B.
PANTRY
SECRETARY
W.C.
COVERED WAY
CARVING TABLE
DINING HALL
BLOCK C.
WATER SOFTENER
WELL
PUMPING STATION
BLOCK H.
IRON STEP LADDER
SUBWAY
WORK SHOP
LIFT
W C
COALS
BOILERS
ENGINES
ACCUMULATORS
LIFT
ENTRANCE TO LAUNDRY
ENTRANCE
DOWN TO HEATERS
DISINFECTOR
INFECTED
DISINFECTED
INCINERATOR
BLOCK G.
COALS
COALS
COALS
BOOTS
WOOD
HARNESS
LOOSE BOX
STALL
COACH HOUSE
STORE
W.C.
STORE
KNIVES
GARDENER'S SHED
STABLE YARD
GLAZED ROOF
BUS AND WAGGONETTE
BLOCK F.
MOTOR HOUSE
STALL
STALL
CART SHED
WARD
MENS ISOLATION WARD
NURSE'S KITCHEN
WINTER GARDEN
BATH & W.C.
LINEN
STORES
SINGLE WARDS
BATHS
ELECTRIC BATH
NURSE'S SITTING RM
DOUCHE
WARD
LIFT
WARD
LAVATORY & CLOAK ROOM
H M C
HOSP'L SINK
NURSE'S KITCHEN
CORRIDOR
WARD
MEN'S ENTRANCE
TERRACE
WARD
LINEN
LIFT
CONSULTING ROOM
DOCTOR'S BED RM
VERANDAH
BATH & W.C.
DISPENSARY
GRAVEL WALK
STAFF DINING ROOM
SITTING ROOM
MAIN HALL
PANTRY
MATRON'S SITTING RM
BATH & W.C.
VERANDAH
SAFE
CONSULTING ROOM
MATRON'S BED ROOM
LINEN
WARD
WARD
H M C
LAVATORY
HOSP'L SINK
CLOAK ROOM
NURSE'S KITCHEN
WARD
DOUCHE
WOMENS STAIRCASE
LIFT
WOMENS ENTRANCE
W.C.S
ELECTRIC BATH
NURSE'S SITTING RM
WARD
BATHS
BATH & W C
NURSE'S KITCHEN
STORES
SINGLE WARDS
WARD
WOMEN'S ISOLATION WARD
LINEN
WINTER GARDEN

laundry, and other tanks. The provision for assuring a constant supply of hard and soft water is very elaborate and no fear need be experienced of a failure in this department. In case of a breakdown or temporary failure of electrical power arrangements have been made to work the pumps by steam power, in which case they would be connected by means of auxiliary shafting to the steam engines in Block G. The water softening plant is of the "Stanhope" type and is capable of treating 10,000 gallons per day. The only reagent used is lime and the plant includes its own motive gear, the mixing being effected continuously by power taken from a water wheel driven by the water entering the apparatus.

FIG. 2.



The southern aspect of the Northwood Sanatorium.

A complete system for the protection of the buildings from fire has been installed and by means of call bells and telephones communication can be effected between the medical staff, matron, wards, and various administrative departments.

The style adopted in designing the sanatorium (Fig. 2) is a free treatment of Georgian, simple in character and well suited to the purposes of the building. By a happy selection of materials a good colour scheme has been obtained. As regards the general decorative effect the walls are faced with Luton grey bricks, with a proportion of red bricks indiscriminately introduced. The covered ways, too, are artistically built. When patients have to reside for some months in an institution of this kind their surroundings must naturally have an effect upon them. If an austere style is adopted a feeling of depression is likely to be produced but in designing this sanatorium Mr. Wheeler has adopted a style of decoration which can only have a beneficial influence on the inmates. Architecturally the winter gardens add much to the interest of the south front, while affording considerable shelter to the terrace. The terrace is paved with red tiles and bounded on the south side by a dwarf wall and piers having simple moulded stone caps. Flights of steps opposite the entrances lead down to the level of the grounds. The chapel is situated within easy distance from the main building. It is simple in its architectural treatment, Gothic in its lines, and is satisfactorily ventilated. The drainage of the whole building has been carried out according to the most approved principles of sanitation and is connected with the main system of the district.

One of the essential points in sanatorium treatment is that due opportunities for systematic exercise should be afforded to the patients. The grounds of the Northwood institution have been well laid out for the purpose. The walks for the male and female patients have been kept entirely distinct. This is not always easy to do, but experience has shown that it is by no means an unimportant detail. Another important matter is that suitable employment must be found for the patients, otherwise a few months' enforced idleness has a demoralising effect on them. We noticed that some of the patients were occupied in gardening and doubtless this is one of the best forms of work for a tuberculous individual to undertake. The grounds of a sanatorium constantly require attention and it is better that these duties should be done by the patients rather than that help should be procured from outside. The committee of the Mount Vernon Hospital may be congratulated on the possession of a sanatorium which fulfils all the requirements for the effectual treatment of pulmonary tuberculosis. It will also serve a second important duty—namely, to instruct the patients how to conduct their lives when they return to their occupations, both as regards themselves and in preventing the communication of the disease to others.

THE ARMY MEDICAL REPORT FOR 1903.

CONCLUDING NOTICE.[1]

AT the close of our first notice there remained a few points which had still to be touched upon. We have already called attention to the prevalence of enteric fever among British troops serving in India in connexion with the increased amount of susceptible material arriving in the command in the large drafts and reliefs coming from home and South Africa. Before dismissing this subject altogether it may perhaps be well to add that the special predisposition of the young soldier to contract enteric fever during his first year of service in India has been noted in every report of the Army Medical Department since 1872.

> The increase in the number of men of the most susceptible age will account for an increase in the actual number of admissions and the more the cases the greater the probability of further infection; this was brought to notice in the report for the year 1902 and is still further borne out by the reports for 1903. In 1901 there was a great diminution in the number of men of the susceptible age and a retention in this country of mature and seasoned soldiers and time-expired men; this was during war pressure and consequently the prevalence of enteric fever was much reduced.

We notice that there were only 12 admissions with two deaths from plague in 1903, against four admissions and one death in the previous year. Considering the terrible prevalence of that disease among the native Indian population this says much for the prompt judgment and care with which prophylactic measures were adopted and enforced in the case of the troops.

Malarial fevers formed, as usual in India, a main source of sickness and inefficiency in 1903. It is noteworthy that of recent years there has been no recurrence of any great cholera epidemic, about which we used to hear so much from time to time in the past, but the disease was nevertheless somewhat more prevalent and fatal in 1903 than in 1902.

Returning, however, to that section of the report which deals with the United Kingdom the reader will find at pages 30 and 31 some remarks, together with a table, showing the health statistics according to arms of the service; that is to say, the table gives the admissions, deaths, number of men invalided, and number constantly sick from each arm of the service, with the ratios per 1000 of strength. It will be seen that the Foot Guards do not occupy a favourable position in 1903 in respect of admission, invaliding, and constant inefficiency rates as compared with other arms of the service for they head the list. As regards the rate of mortality the Foot Guards, while showing the lowest death-rate in 1903, took the second highest place in this respect in the previous year—the regimental depôts being in the unenviable position of first. In the Household Cavalry, on the other hand, the different rates are relatively low and contrast very favourably with those of the Foot Guards.

Turning to the subject of recruiting for the army, the report for 1903 is an elaborate compilation containing as usual a number of statistical tables and details. The number of recruits inspected during the year was 69,553. Of these 22,382, or 321·80 per 1000, were rejected as unfit and 47,171, or 678·20 per 1000, passed fit for the service. 1022 of the latter were, however, subsequently discharged as unfit for service within three months of enlistment, thus making the total number of rejections equal to 23,404, or a ratio of 336·49 per 1000.

A comparison with the corresponding ratios of the previous year (1902) shows an increase of 14·61 per 1000 in rejections. The various causes of rejection are classified and set forth in tabular form at p. 43 of the report. Taken as a whole, they disclose a very unsatisfactory state of affairs, for they point to a growing deterioration in the general physique of that portion, at any rate, of the population from which our army is recruited. The subject is one of serious import and never more so than at the present time. Nor does it seem to us that any Government has made an earnest attempt to get at the root of the matter. What has still to be recognised generally is that we require an army which shall be expansible at need by the coöperation of all classes at home and in the colonies. Can it be said that the Government has any really adequate grip of the situation? The antiquated and lingering dread of so-called "militarism" can only be regarded as an anachronism nowadays and in present circumstances. Allowing for any additional causes for rejection which have been introduced of late years and such as did not formerly exist, and for any increased stringency on the part of medical examiners, can it be said that the War Office authorities have made the best use of the means at their disposal for making an entrance into the army more attractive to the recruit?

It is unfortunate that these army medical reports are belated publications, for it naturally tends to rob them of much present interest, but we suppose that for official reasons this is unavoidable. But we may say that, speaking generally, the report for 1903 is a more than usually good one.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary Comitia was held on June 23rd, Sir RICHARD DOUGLAS POWELL, Bart., K.C.V.O., the President, being in the chair.

The following communications were received: 1. From the secretary of the Royal College of Surgeons of England, reporting certain proceedings of its Council on May 11th. 2. From the General Medical Council drawing the attention of the College to a list of rejections at recent competitions for commissions in the Navy, the Army, and the Indian Medical Services, indicating the licensing bodies from which the rejected candidates obtained their qualifications. 3. From the secretary of the Royal College of Physicians of Edinburgh denying that the College encourages the use of the title of "doctor" by its licentiates, not being graduates in medicine. 4. From the principal librarian of the National Library of Turin returning thanks for the books presented to the library by the College in January last. 5. From the Board of Education, forwarding papers, received through the Foreign Office, from the committee for organising a first International Congress on Radiology and Ionisation to be held at Liége on Sept. 12th to 14th next.

The TREASURER (Sir DYCE DUCKWORTH) exhibited to the College certain relics of Dr. Edward Jenner which had been presented to the College by Sir Samuel Wilks. The thanks of the College were ordered to be communicated to the donor.

A report was received from the College representative (Dr. Norman Moore) on the General Medical Council on the proceedings of the Council during its session in May last.

A report, dated June 5th, from the committee of management was received and adopted on the recognition of the Medical School at Cairo as a place of study for candidates for the diplomas of the two Royal Colleges.

A second report from the committee of management was received and adopted recommending some additions to the regulations for the public health diploma.

The REGISTRAR (Dr. E. LIVEING) moved that the following by-law be enacted for the first time, viz.:—

> That Leonard Rogers, M.D.Lond., elected to the Fellowship on April 27th, being resident in Calcutta, be admitted *in absentiâ*, any by-law to the contrary

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[1] The first notice was published in THE LANCET of June 24th, 1905, p. 1740.

THE LANCET.

LONDON: SATURDAY, JULY 1, 1905.

Lunacy Acts Amendment Bill (London) (No. 2).

UNDER this heading a Bill has been ordered by the House of Commons to be printed (April 18th, 1905) the purport of which is "to authorise the London County Council to provide receiving houses for the reception of persons mentally affected or alleged to be of unsound mind, and to authorise the detention of such persons in such houses, and for other purposes connected therewith." The Bill was presented by Sir John Batty Tuke and supported by Mr. Burns and Mr. Benn. There has for some time been considerable agitation, in deference to the recognised objection of the relatives of persons suffering from recent mental impairment to place them under certificates or in an asylum, in favour of a change in the law. It has been desired to secure the detention under more liberal conditions as regards certification and restraint of such persons as are mentally afflicted but who may be reasonably expected to be suffering from disease of only a temporary character. The London County Council, noting the number of acute cases sent into its asylums and that many of these patients have to be discharged after a very short residence, and recognising that it is unfair and improper to brand such persons as "lunatics," has come to the conclusion that it should be empowered to erect reception houses to serve as filters through which mentally affected patients should pass, so that they may have the opportunity of demonstrating whether they are merely suffering from a temporary derangement, requiring only care and a short period before recovery, or whether the illness is more serious, demanding the usual process of certification and incarceration in one of the asylums. Hence the Bill now under consideration, which has been presented to the legislature by an eminent alienist and is backed by two prominent members of the Council. The experiment is an expensive one, entailing the erection of costly buildings and ambulance stations, accommodation for the treatment of out-patients, and provision for a large staff of officers. We conceive it to be our duty, in the interests of the public and of the patients, to criticise the proposed arrangements and to point out that material modifications are necessary to the success of the scheme, if, indeed, it is expedient to carry it out.

It will be granted that if a modification of the present lunacy law is necessary in the case of well-to-do patients it is right that a similar proposal should be made for pauper patients affected in a like manner, having regard, that is, to the view that if the present conditions are adverse to the recovery of the well-to-do patient they also act equally adversely to the pauper patient. We may point out that another Bill to amend the Lunacy Acts, dated April 18th, 1905, has been presented by the Attorney-General and supported by the Solicitor-General, the main feature of which is the "temporary care of incipient lunatics." This Bill provides that in certain circumstances a person suffering from probably curable mental disease may be placed for a period of six months under the care of a "person whose name and address are stated" upon the certificate of a medical practitioner. This Bill is almost certain to become law. What a difference in the two processes which have the same end in view! In the case of the private patient there is no mention of special provision of an institutional character or of the justice of the peace—nothing beyond the mere certificate of any medical man that in his opinion So-and-so is suffering from mental disease of a not confirmed character. These simple conditions are not possible in dealing with the poorer classes who cannot be placed in the costly homes accessible to the well-to-do. If they are to reap the advantages of the proposed modification of the law they must be provided with special places for treatment, not asylums but hospitals, inasmuch as the very essence of the new scheme is to do away with the opprobrious term "asylum" and all associations with the word. And here comes in the weakness of the new scheme as at present drafted in the Bill—to all intents and purposes the new "receiving house" is an asylum and unless it be conducted on very broad lines it will be esteemed as such. The term "reception house" is unfortunate; it savours too much of other "houses," the workhouse and the house of detention, and since, according to the drafted Bill, the institution is to be for "persons alleged to be lunatics" and is to be "conducted as nearly as possible in accordance with the law regulating county asylums," we have little difficulty in surmising that it will be held in public estimation to be something between an asylum and a prison. What is the difference? There are to be a "detention certificate," the interference of a "justice," the power of restriction of liberty and control by an organised staff, the "supervision of the Commissioners in Lunacy" and the mixture of all classes of "alleged lunacy" with "mental disease in its earlier stage or of the symptoms of incipient mental disease." All this sounds to us very like the present "asylum," even though Clause 18 of the Bill (p. 7)—a Bill, be it remembered, drawn up "to establish houses for persons alleged to be lunatics"—offers a salve to the conscience by stating that "a patient detained in a receiving house shall *not*, unless certified as such, be deemed a lunatic." Practically the very individuals whom it is desired to treat as merely sick persons will be housed with legally "certified lunatics" and will be under the bond of a detention order and the surveillance of the Commissioners in Lunacy. Is this realisation of an abstract idea worth the enormous expenditure entailed by the erection of new detention houses and ambulance stations in various areas or districts in the county? Will it be of any real advantage to the patient to tell him that he is not what he is practically made into? Regulations may abolish locks on doors, may dress attendants in ordinary clothes instead of uniform, may carefully allude to the patients as not insane or not "lunatic," but so long as the inmate of an institution is placed in the only two classes of detained persons in this country, lunatics and prisoners, he will be regarded as belonging to one class or the other. The contemplated provision for the treatment of out-patients is not bad in theory but inasmuch as persons can now get what they want in that way at the general hospitals it is doubtful if they will attend at the proposed "houses"; they will think that they run the risk of detention if their symptoms are unfavourably judged by the medical authorities of the institutions.

The additional cost of these proposed houses to the over-burdened ratepayer has to be taken into consideration. After "areas" have been secured in convenient places—and to be of any use they must be in London—the question of the style of buildings and the extent of them will have to be considered, and as the price will figure out at probably £200 a bed it will be seen that the proposition may easily run into hundreds of thousands of pounds, to say nothing of a weekly maintenance rate of something like 12*s.* per head. And what is the good to be achieved by this new expenditure? True, the present asylums will be less pressed, and it may be argued that as new accommodation has constantly to be provided it may as well take the proposed shape as any other. But most of the existing asylums have already accommodation of the very best kind for the treatment of acute cases and it seems ridiculous to devote this to the housing of the merely chronic insane, a result probably within the view of the new Bill, for it looks as if very few cases will be sent directly to the asylums—only when the patients have passed the test of the receiving house will they be apportioned as seems good to the authorities. No sooner will the "houses" be opened than they will be filled and the ratepayers will find themselves the supporters of many forms of nervous disorders which are better treated at the general hospitals. At the present time the workhouse actually does the work contemplated by this new Bill and in many instances does it very well. It would be worth while to obtain information from the central office of the asylums department of the London County Council on the following question—How many applications are received from the workhouses which are afterwards cancelled because the patients for whom application was made have recovered, or have been taken away by their friends? We know that the number is considerable and that beds which have been allotted in the asylums are frequently not wanted. If it is intended to pass all cases of insanity, incipient or pronounced, through the reception houses there will be no need of the present workhouse accommodation for these cases, but the substitution of one kind of officialism for another hardly justifies the abolition of machinery already in working order. The machinery may not be perfect but it is capable of improvement and of being made completely adequate for the purposes of this new Bill. The Local Government Board is surely as good a curator as the London County Council. Why cannot the Board be intrusted to see that the workhouse infirmaries are perfected for these purposes, purposes which they actually now do carry out, without burdening the rates with a new and costly experiment? It should be recognised that though the principle of temporary treatment before committing to an asylum should hold with regard to the poor as well as to the rich, there is no binding necessity that the methods to attain this end should be precisely similar, and therefore that it is no hardship for the poor person to be treated in the workhouse under revised conditions though the richer person may by his wealthier circumstances have the luxury of treatment in the house of a private individual. Let us look facts in the face. The County Council, we know, thinks that it is an objection for poor people to be termed "paupers" and to be treated in a "workhouse," and to obviate these fancied evils it proposes to saddle the ratepayers with elaborate buildings which are for all practical uses houses of restraint in which persons are to be treated at the charge of the rates, and no ostrich-like shutting of the eyes to facts will alter the real truth. If, however, the Bill does become law we hope that advantage will not be taken of its powers to begin buildings on different areas at the same time. Let one be erected in order to gain experience and to test the potentialities of the new ideas.

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Small-pox in Leicester during 1904.

ONE of the most interesting and as yet inexplicable phenomena in the history of epidemiology is the varying prevalence, fatality rate, and degree of infectivity of certain communicable diseases. Why is it that for years diseases such as plague, cholera, and influenza may either remain latent or confined to their endemic centres and then, bursting their bonds, spread over the world in a pandemic wave? Why is it, too, that at times small-pox is attended with a truly terrible fatality rate, while at others the disease, though prevalent, can hardly be detected in the bills of mortality? For several years past small-pox has evinced, not only in this country but also in the West Indies and elsewhere, such a remarkable mildness that, as at Cambridge, the true nature of the malady has been matter for speculation, and such mildness has manifested itself not only in well vaccinated but also in badly vaccinated communities. One of the best illustrations of this fact is to be found in the history of small-pox in Leicester during 1904 as set forth by Dr. C. KILLICK MILLARD in his last annual report. There were in Leicester during last year 321 cases of recognised small-pox and the table below gives certain facts both with regard to the vaccinated and unvaccinated :—

	Cases.	Deaths.	Fatality rate.
Vaccinated	127	1	—
Unvaccinated	192	3	—
Uncertain	2	—	—
	321	4	1·24

The death in the vaccinated group was that of a male, aged 46 years, of drunken habits, in whom the evidence of vaccination was open to doubt. But the point which is of greatest interest is the low fatality rate among the unvaccinated. It is clear, indeed, as we have already said, that small-pox may at times be so mild that inasmuch as there are but very few fatal cases the influence of vaccination is hardly detectable in the death returns. It has, however, to be pointed out that even in mild types of the disease, such as are here in question, the protective effects of vaccination are at once apparent if they are sought for in the proper channel. Although there were in the outbreak under discussion 125 cases under 15 years of age not one of them occurred among the vaccinated class, whereas the three deaths among the unvaccinated occurred in children under ten years of age. To this point Dr. MILLARD bears ample testimony when he says, referring to the figures for both 1903 and 1904, "there was not one single instance of the disease attacking a person who had been recently vaccinated before exposure to infection," but seeing that in 1904 no vaccinated person under 15 years of age was attacked a somewhat elastic use is perhaps made of the word "recent." The records with regard to the hospital staff are equally remarkable and Dr. MILLARD'S observations in this connexion will probably be freely quoted. He tells us that the majority of the staff employed in 1903 were also employed in 1904 and that of the 74 persons so employed every one, with the exception of three who had had small-pox before being engaged, had been recently vaccinated. After recounting the manner in which the staff were brought in contact with the patients and adding that during the two years nearly 700 cases of small-pox passed through the hospital, he is able to report that not a single member of the staff contracted "this most infectious disease." In seeking for an explanation of this immunity he refers to the suggestion which would certainly be made in Leicester that it was secured "by other means which were taken" and not by vaccination. To this he, replies that "as medical superintendent of the hospital and responsible for its management I ought to know what precautionary measures were taken, and I say emphatically that *beyond vaccination no steps whatever* were taken to protect the staff. I knew that with efficient and recent vaccination no other measures were necessary and that without it none would be of avail."

It must not, however, be concluded that Dr. MILLARD is what may be termed an enthusiast in the matter of vaccination. On the contrary, he thinks that in the recent epidemic the anomalous type of the vaccinated cases rendered them very difficult of detection, and to five "unrecognised" cases of this type he attributes the occurrence of no fewer than 40 other cases in the space of four weeks, and although he makes a confession of faith in writing "I believe absolutely in the protective power of vaccination" he thinks it possible (*a*) that the importance of universal vaccination, as also the terrors of small-pox, have been over-estimated; and (*b*) that the objections to vaccination and the efficacy of modern preventive measures have been under-estimated. We presume that this under-estimation argument is not intended to apply to Leicester where we are sure even Dr. MILLARD would admit that the virtues of the "Leicester method" and the terrors of vaccination have been proclaimed *ad nauseam*. It is, however, only fair to Dr. MILLARD to point out that with regard to the "Leicester method" he writes: "I will say at once that I consider it is too soon yet to arrive at a final conclusion as to its value" and he expresses the view that "Leicester's danger lies in the fact that the popular feeling against vaccination is so strong that if a breakdown of the present system did occur it is unlikely that the people would submit to universal vaccination until a very serious catastrophe had occurred." Leicester has, he thinks, succeeded in the past not *because* she has abandoned infantile vaccination but in *spite* of having done so and he regards it as "pitiable" that other communities should copy Leicester in the matter of abstention from vaccination but should fail to copy the other portions of her "method." Dr. MILLARD'S report will, we imagine, be read with very mixed feelings by the members of the Leicester borough council since he frankly tells the antivaccinationists that in trying to disprove the protective value of vaccination they are leading an utterly forlorn hope and he appears to us to suggest that they would do better to throw overboard this plank in their platform and, closing their ranks, to march forward under the "no compulsion" banner. We wish that he could use his influence with the people to adopt the method "made in Germany" rather than that of their own manufacture, and the fact that in Leicester during 1904 40 cases of small-pox are attributed to five "unrecognised" cases should in our view have led Dr. MILLARD to emphasise the need for systematic general revaccination. It is only by this means that the effect of anomalous cases can be guarded against, that business disturbances can be prevented and that the costly expenditure in small-pox hospitals can be obviated.

The Peterhead Hospital.

PROVOST LEASK of Peterhead is a gentleman who has the courage of his opinions. We publish elsewhere the observations which he is reported to have made on the occasion of laying the foundation stone of a hospital for infectious diseases in the burgh over which he presides, observations which appear to show a quite curious want of power to appreciate the real circumstances and necessities of the case. If local authorities in other Scottish ports resemble Provost LEASK, his denunciation of the Scottish Local Government Board may well excite lively feelings of gratitude for its existence and for its activity. His case is that whereas "a small cottage hospital with two or three beds has amply served the necessities of the burgh for the last 20 years or more and has been the only hospital in the place," the local authorities have been compelled by "a body of gentlemen in Edinburgh who had been formed by a grandmotherly government into a sort of moral policemen" to establish an isolation hospital which is to be of the villa type, built in four blocks and containing 16 beds. The worthy provost went on to inform his hearers that the aforesaid "moral policemen" required no knowledge of local needs or local circumstances and that the less they knew of them the better they would be prepared to carry out "cast metal rules and regulations" which they were "privileged to apply and enforce with something resembling the despotism of a Russian Tsar."

The circumstance that Peterhead never had any hospital at all until 20 years ago, and that since then its "small cottage hospital with two or three beds" has "amply served" the requirements of the locality is a statement which may go far to justify Provost LEASK'S praises of the salubrity of the town over which he presides, although it also suggests more than a possibility that the requirements in question may at least be partly supplied by the hospitals of Aberdeen. But the real crux of the question is in the fact that Peterhead is a port, with an extensive export and import trade, and that isolation hospitals at ports form essential portions of the defences of the country against foreign epidemics. According to the latest statistics which we have at hand the population of the burgh is about 12,000, and the shipping entering the harbour amounts annually to some 60,000 or 70,000 tons. This tonnage is more likely to increase than to diminish, because, although the port is no longer a centre of the seal and whale fishery, a new harbour of refuge has been constructed by convict labour, and any increased facilities for commerce are certain to be developed to the utmost by the energetic population of the place. As human nature is constituted it is not impossible that local laxity in the enforcement of port sanitary regulations, especially if rendered inevitable by the absence of the means necessary for carrying them into effect, might be a condition not wholly unattractive to skippers whose crews had been stricken by disease, and might tend to convert Peterhead into a sort of heel of ACHILLES in the general invulnerability of Scotland. The isolation hospital of a busy shipping port is not so much required for the dropping cases of infectious disease which may arise among the residents as for the protection of these residents and of the country generally against the diseases which may be imported from abroad. Energetic action was taken by the Local Government Board for England twelve years ago, in order to obtain the establishment of proper isolation hospitals at all the ports under its jurisdiction which were not already provided with them; and, if Peterhead has been allowed to be content with the possession of "two or three beds" until now, it would seem to us that the action of the Scottish Board should be condemned for its tardiness rather than for its despotism.

History is only too full of evidence, moreover, that the sort of official optimism which seems to prevail at Peterhead is not always a trustworthy indication of the nature of the facts on which it rests. Where there is but an inadequate provision for dealing with certain classes of evils there is likely to arise a general impression that they must remain undealt with, and an acquiescence in the consequences of neglect as if these ought to be regarded as unavoidable. Where little or nothing is done for the mitigation of disease its presence comes to be regarded as part of the order of nature; and where persons in authority have neither the means nor the inclination to act effectively, effective action soon ceases to be either expected of, or demanded from, them. To say that a cottage hospital with two or three beds has been amply sufficient for the needs of an industrial population of 12,000, busily engaged as fishermen, sailors, quarrymen, stone-cutters, ship-builders, and so forth, and liable not only to all the ordinary forms of disease but also to their due proportion of accidents, seems to us to be an incredible proposition, the maintenance of which can only be explained on the ground of ignorance of the amount and kind of provision which like conditions are found to justify and to demand elsewhere. We fully agree with the proposition that the requirements of a central authority should be governed by sufficient local knowledge, but we cannot admit that they should be governed by possibly uninstructed local opinion. Provost LEASK condemns the Local Government Board for "seeming to believe that local men knew nothing about the requirements of their localities or could not be trusted to do their proper duties." It must be conceded, on the one hand, that such a belief may be carried too far but it may safely be maintained, on the other, that it often rests upon a very considerable body of evidence. The recent epidemic of typhoid fever at Lincoln has admirably illustrated the capacity for inaction which may be exhibited by local men in the face of conditions absolutely certain to produce disaster, and the case of Lincoln has been exceptional only as regards the magnitude of the outbreak which has been permitted. Every recurring annual report of the medical officer of the Local Government Board contains accounts of epidemics produced by causes to the existence and character of which the attention of the local authorities had been repeatedly directed, but which had none the less been suffered to remain unchanged; and it is well known to all sanitary administrators that the owner of a dangerous nuisance is almost invariably solicitous to obtain a seat on the board by which this nuisance ought to be suppressed. On such a board, as a rule, his sole function will be the protection of his property against the demands of the inspector or of the medical officer of health. Provost LEASK is, no doubt, plausible but in the face of facts which are well known to all of us, and some of which, indeed, are disclosed by his very arguments, we are unable to say that he is convincing. His criticism will be useful in so far as it may render Local Government Boards careful in their inquiries but it can hardly be said to convict the Board for Scotland of hasty or inconsiderate action. Before many years have passed away the inhabitants of Peterhead will probably have ample cause to congratulate themselves on the consequences of the official pressure of which their provost now complains and to regard their new hospital with a satisfaction based upon experience of its utility.

Annotations.

"Ne quid nimis."

THE DEFICIENCIES OF BRITISH INNS.

THE holiday season is approaching and we constantly hear recriminations addressed to those who choose to spend their holidays abroad instead of in their own country. It is quite true that these islands have objects of interest quite equal to those possessed by foreign countries, but in our opinion the traveller who makes holiday in Great Britain by means of a driving, cycling, or motoring tour is not catered for in anything like the satisfactory way in which he is in even the smaller towns or villages of provincial France. We have received a letter from a correspondent who has recently returned from a tour in the county of Kent which thoroughly bears out our contention. He says:—

> I have recentl [illegible] bridge Wells and send [illegible] to your readers and, I [illegible] hance these lines shou [illegible] hich is famous for one c [illegible] sts an "institute" erec [illegible] light refreshments. [illegible] uash. "We've no lemons," was the answer. I inquired if no lemons could be got in the village, there being a grocer's shop some 20 yards away. "No," said the man in charge, "there's no such thing to be got in ——." So I had to go myself, buy two lemons, and come back, when

I was grudgingly provided with some flat soda-water out of a syphon and some sugar. I rode on *some miles farther and stopped at* ——, where there is to outward seeming a charming inn. There are flowers in the windows, trees with benches outside; inside, a grand piano, two ancient amphoræ in the hall, a photograph of the Duomo at *Florence, a plan of the drains,* a smiling manageress in black silk, and a courteous manager in light grey dittoes and a red tie. I thought this looked promising and asked if I could have some lunch. "No," said the lady in black, "we've nothing in the house. If you like to wait half an hour we can give you a chop or a steak." "Nothing cold," I said. "No, there's no demand for it." Eventually the gentleman in grey said he thought that there was cold tinned tongue. There was, and I had it. There were no lemons, of course, but I had brought one with me. A few days later I rode to another place distinguished for having a church with some excellent modern windows by a distinguished artist, *some* interesting old houses, and an inn the building of which dates back to about 1450 in places. Here an almost exactly similar scene was repeated. Again I was offered a chop or a steak; again I had to put up with a tinned tongue (American); again, warned by experience, I had provided my own lemon. A friend to whom I recounted my experiences told me that just the same happened to him at the principal inn of the place where I had my encounter with the institute keeper. He had taken two friends from America to see the historic house and offered them lunch at the inn. The only thing in the house was a very poor quality indifferently cured ham from Chicago. He was also charged 6*d.* for putting his bicycle in a shed. Is it any wonder, Sirs, that persons who can have but a short holiday prefer to go to Normandy or Brittany where one is always sure, even in a *little village,* of civility, a good omelette, fresh vegetables, and generally a little soup?

We agree with our correspondent. The British innkeeper in the *Home* Counties, at any rate, does not seem to care in the very least about the comfort of his guests. His only object is to sell intoxicating drinks. In many instances this is not altogether his fault for he is the victim of the tied-house system. But the difference between the British inn and the foreign one is very striking and we are sure that if some innkeeper in any one of the interesting old towns to be met with within 40 miles of London would lay himself out to provide travellers with a *simple,* cleanly meal of cold beef, fresh salad, lemons, strawberries, and other fruit when in season, and would not charge 6*d.* for standing a bicycle *up against* a wall, he would reap his reward.

THE METROPOLITAN WATER-SUPPLY.

A LETTER appeared in the *Times* of June 23rd from Mr. R. Brudenell Carter, F.R.C.S., in which he described a sudden cessation of the domestic water-supply of dwelling houses in Clapham, Balham, and Tooting, although the service for watering the roads underwent *no interruption* and although no warning of any probable scarcity had been given to the consumers. The only explanation obtainable by Mr. Carter from "irresponsible clerks" at the district office of the Water Board was that a shortage of supply had been occasioned by the difficulty of filtering water which had been rendered unusually turbid by the recent heavy rains; and that this shortage, although it interfered with the domestic service to cisterns on the upper floors of houses, did not interfere with the service to standpipes at lower levels and thus permitted a sufficient supply to be given to the watering-carts. The excuse was a *foolish* one, because the height to which the water service will reach is almost entirely governed by the quantities which are withdrawn at lower levels, and hence *if the street* service had been temporarily arrested that to the houses might unquestionably have been continued. From inquiries which we have made we learn that no water entered the houses for more than 24 hours, and we regret to add that there is no evidence on the part of the Water Board or of its servants of any adequate appreciation of the character of the failure *of duty of* which they have been guilty or of the consequences possibly attendant upon it. Sir John Simon once called attention to the very imperfect manner in which the public was protected "against certain extreme dangers which the malfeasance of a water company, supplying perhaps half a million customers, may suddenly bring upon great masses of population. Its colossal power of life and death is something for which until recently there has been no precedent in the history of the world; and such a power, in whatever hands it is vested, ought most sedulously to be guarded against abuse." So little has this been done that the safeguards which existed in the time of the companies have practically been entirely withdrawn by the *establishment of* the Board. We are advised that the previous Acts relating to the companies are not expressly incorporated in the Act constituting the Board. It is only provided that the Board shall be subject to all the duties, obligations, and liabilities of the companies in like manner as if it were the companies, and these words do not expressly provide that the penalties which were recoverable from the companies in police-courts for breach of obligations may also be imposed upon the Board. In these circumstances it is doubtful whether a police magistrate would inflict a penalty and if he did the case would unquestionably be taken to the High Court at the cost of the ratepayers, upon whom, in any case, and not upon the delinquents, the penalties would fall. Mr. Carter saw many persons engaged in fetching temporary water-supplies from a pond on Clapham-common in which tramps are in the habit of washing themselves and their clothing, and he referred to the dangers of typhoid fever which the use of such supplies might entail. Apart from this, it is obvious that the complete absence of water from hundreds or thousands of *houses might easily* be productive of fatal consequences in many ways, and if the Water Board continued to fail in the discharge of its duty the verdicts of coroners' juries would be likely before long to direct the attention of Parliament to the necessity of increased provision for the public *safety*. It is obviously the duty of the Board to provide *filtering* areas sufficient for times of unusual turbidity of the supply, and to meet any *unavoidable shortage* (*of the* occurrence of which there is always ample foreknowledge at *headquarters*) by giving such warnings as may be productive of *economy in the* use of water, and by sending round water-carts or by *establishing temporary stand-pipes* in localities where the domestic supply is suspended.

PRECIPITATE LABOUR.

HAPPILY it does not often occur that cases of precipitate labour entail the death of both the mother and child as in the very interesting case recorded by Mr. H. E. Rayner and Dr. W. L. Stuart in THE LANCET of June 17th. Cases of this kind are not infrequent and in quite a number of instances delivery *has occurred* whilst the mother was in the closet. In a case published by Colton a woman aged 25 years felt a desire to urinate and whilst *seated on the closet gave birth to* a child. She had felt no pains and twelve days later is said to have ridden twenty miles to the funeral of her baby. Leonhard describes the *case of* a woman, aged 37 years, who had had six living children and who was pregnant for the tenth time: she had taken an aperient and on attempting to *rise* after the bowels had been opened found herself attached to the closet by the cord. The child lived but the mother died half an hour after returning to bed. *There is* a curious story related by Gould in his book on the "Curiosities of Medicine" of a woman who is said to have been delivered of a child in the lavatory of a railway train, the child afterwards being found alive on the track! In *another* case quoted by the same author a woman, aged 40 years, who had borne two children, was *delivered* so suddenly whilst in a bath that the child *was in* danger of drowning. The question as to whether a healthy woman can be delivered unconsciously is one of much medico-legal *interest. It is difficult* to understand how a woman can mistake the onset of labour for a desire to pass urine or to defæcate. It is interesting to note, however, that patients not uncommonly say that the discomfort experienced by them when the bladder is over-distended is not unlike that felt at the onset of the monthly periods. It is difficult to understand the possibility of an error in these matters, but as such an excuse is often put forward in cases where women are accused of the wilful concealment of birth it is well if possible to give them the benefit of the doubt although the plea is generally not a true one. At the Barking outfall of the London sewers at one time they received an average of five fœtuses a year and it is unlikely that many of them got into the sewers without the knowledge of the mothers. The occurrence of a case of precipitate labour no doubt depends upon the combination of a number of different factors. Winckel as the result of his investigation of some 250 cases of this kind concludes that the most important and constant of these factors are: excessively powerful pains, multiparity, such general affections of the mother as bronchitis and epilepsy, small size and macerated condition of the fœtus, and abnormal shortness of the cord. The most important of all, however, he considers to be the position of the patient at the time when delivery occurs, and as an explanation of the excessive force of the pains he suggests an abnormal development of the muscle of the upper uterine segment over that of the lower segment. He further points out that heredity plays some part, even according to Cazeaux as far as the third and fourth generation, while the condition may recur in the same patient in successive pregnancies. It is difficult to believe, as do the authors of the case recorded in our columns, that the premature separation of the placenta and intra-uterine hæmorrhage could have been the exciting causes of such extremely powerful uterine contractions. This complication of labour tends in the majority of cases to produce inertia of the uterine muscle rather than excessive action. It is uncommon, too, to find a rupture of the uterus; the more frequent complications are acute prolapse or inversion of the uterus and retention of the placenta.

A PRACTICAL INVESTIGATION OF THE EFFECT OF PRESERVATIVES UPON DIGESTION AND HEALTH.

THE remarkable experiments undertaken at the instance of the United States Department of Agriculture by Dr. H. W. Wiley, chief of the Bureau of Chemistry, with the view of determining the effect of certain preservatives upon digestion and health, have been concluded so far as boric acid and borax are concerned. A very interesting and complete account of the experiments, which were conducted on human subjects, has been issued. The report undoubtedly contains the most valuable contribution that has ever been made on this subject. The work has been conducted with admirable care and with a splendid regard to detail. 12 persons were selected for the purpose who were kept under constant supervision, including medical examination directed to the blood, the temperature and pulse, and the body weight. The preservatives were administered in foods which were analysed as regards their contents of water, fat, nitrogen, phosphoric acid, and heat-producing equivalent. The urine and the fæces were analysed. It may be imagined what a great number of analyses were thus involved and also what special difficulties there were connected with the work. While the results showed no startling record of symptoms there was distinct evidence of impairment of normal health in many cases. When boric acid or its equivalent in borax is taken with the food in small quantities not exceeding seven and a half grains a day no notable effects are immediately produced. Long-continued exhibitions of small doses or large doses extending over a shorter period show in many instances a manifest tendency to diminish the appetite and to produce a feeling of fulness and uneasiness in the stomach which in some cases result in nausea, with a very general tendency to produce a sense of fulness in the head often manifested as a dull and persistent headache. In addition to the uneasiness produced in the region of the stomach there appeared in some instances sharp and well-located pains, which, however, were not persistent. These sensations disappeared as a rule when the preservative was withdrawn. The administration of boric acid in quantities of from 60 to 70 grains per diem continued for some time resulted in most cases in loss of appetite and inability to perform work of any kind. In many cases the person became ill and unfit for duty. It would seem, therefore, that 60 grains per day is the limit of exhibition beyond which the normal man may not go. Most of those under observation were able to take 45 grains a day for a somewhat protracted period and still to perform their duties. They, however, felt injurious effects and it would seem certain that the normal man could not long continue to receive this quantity per diem with impunity and in some instances even seven grains per diem appeared to have a disturbing effect upon the normal health. The conclusion seems to be warranted, therefore, that both boric acid and borax when continually administered in small doses for a long period or when given in large quantities for a short period create disturbances of appetite, of digestion, and of health. These results, it seems to us, must gain acceptance considering the eminently practical way in which they were obtained. We look forward with very great interest to the indications which further experiments may give with other preservatives. In the meantime we congratulate Dr. Wiley on the patient, painstaking, and practical way in which he has approached the question and a word of praise is due to those men who voluntarily submitted themselves to the experiments.

LIQUOZONE IN THE CORONER'S COURT.

ON June 26th Dr. W. Wynn Westcott concluded his inquiry into the deaths of Constance Adelaide Sheppard and Dorothy May Sheppard who were alleged to have died from the effects of a patent medicine called liquozone. The proceedings at the opening of the inquiry were summarised in THE LANCET of June 10th, p. 1594. At the adjourned inquiry Sir Thomas Stevenson gave the results of his analysis of liquozone. The principal ingredients were: sulphur dioxide, 0·269 per cent.; and sulphuric acid, 0·848 per cent. The preparation was practically a solution in water of sulphur dioxide which had partly oxidised into sulphuric acid. Taken internally it would act as an irritant and might cause vomiting in a child. Mr. A. J. Pepper said that in his opinion the symptoms were due to food poisoning, possibly watercress, and Dr. A. P. Luff also said that food poisoning was to blame. He did not think that it was possible for liquozone to have caused the deaths. The jury returned the following verdict:—

> Both the children died from exhaustion, after vomiting and diarrhœa, set up by taking liquozone. They further wish to add their deep [illegible] with the parents in the loss of their children. They further [illegible] should be made to the proper autho[illegible] investigation should be made as to the nature of these patent medicines before they are placed on the market.

In the course of the case Mr. Andrews, on behalf of the children's parents, asked Sir Thomas Stevenson: "Should I be exaggerating if I said that the pamphlet was nothing but lies?" To which Sir Thomas Stevenson replied: "Not greatly. It has no foundation in fact." We desire again to insist, as we have done for many years past, that some control should be exercised over patent medicines and the lying statements by which they are puffed in magazines and, we regret to add, even in the better class daily journals. In the advertisement columns of most, if not of all, the popular sixpenny monthly magazines there will be found every kind of quack medicine and so-called medical appliance set out in the most glowing terms. In the June number of one magazine now before us there are over 40 such advertisements. The proprietors of these magazines pocket from £30 to £50 per page of dirty money for these announcements, so that it is obvious that the owners of the quack preparations must make enormous profits to be able to pay such sums. The Government connives at the sale and at the deception by insisting on the use of a 1½d. stamp. Either such quackery should be prohibited or the amount of the stamp should be raised to some prohibitive sum, or still better, any quack trader should be compelled to pay an annual licence to cost, say, £200 per annum. The liquozone quacks apparently keep a qualified medical adviser. Dr. J. R. Wallace It would be in accordance with the traditions of the profession to which he belongs if he severed his connexion with the company.

SMOKE ON THE RIVER THAMES.

WE said last week that the London County Council has done many things, for some of which it has been heartily praised and for others equally heartily condemned. In the former category we placed the recent inauguration of an efficient steamboat service on the Thames, a step which so far has met with considerable success, and we are quite confident that the London County Council would be the last body in the world which would knowingly detract from this success by committing a hygienic blunder. The London County Council is our health authority and amongst its duties in this connexion is the suppression of the smoke nuisance and its energies, backed by the vigilance of the Coal Smoke Abatement Society, have undoubtedly gained for Londoners a purer and a cleaner air. But if the new Thames steamers cannot be improved as regards their fires and stoking arrangements the river bids fair to flow under a dense and offensive pall of smoke, the beauty of the Embankment will be sadly marred, and the pleasure of a journey by water will be utterly destroyed. We are sure that on this matter being represented to the Council it will take steps to set its own house, as it were, in order, otherwise its praiseworthy crusade against manufacturers, the proprietors of hotels and restaurants, and others who commit a smoke nuisance will be nullified by its own neglect in the same matter elsewhere. Perhaps it is that the funnels of the new steamers are shorter than those of the old steamers but the London County Council steamers should be exemplary in this matter and our health authorities will do well to show their sincerity of purpose by demonstrating to others that the furnaces of river steamers need not be producers of smoke and vitiators of the otherwise fresh and pure river air.

PATHOLOGY AT OXFORD.

ON June 20th a deputation representing the graduates in medicine of the University, consisting of Sir William S. Church, Dr. S. J. Sharkey, Dr. G. I. Schorstein, Dr. W. Collier, and Mr. Whitley, presented an address to the Vice-Chancellor in Convocation. The purport of the address was to lay before the University a statement of the steps already taken to further pathological study in the University. The appeal for support, which had so far been limited to members of the profession, had resulted in the raising of a sum of £500 which was allocated to the ultimate endowment of the chair of pathology. It was now intended to appeal to the general public. Sir William Church concluded by asking the Vice-Chancellor to receive the address and an album containing 200 signatures. The Vice-Chancellor, in receiving the address, said that he was pleased that the importance of the chair should be thus emphasised. We are glad to see that the medical graduates of Oxford are doing what they can to place the chair of pathology upon a sound financial footing. But they are comparatively few in number and so we trust that other Oxford men and even members of the general public will contribute. If a sum of £10,000 could be raised which would provide the chair with an endowment of £300 per annum the University chest might make a larger grant than it at present feels justified in doing.

TOXIC SYMPTOMS AFTER OPERATIONS ON HYDATID CYSTS.

THE production of toxic symptoms by operations on hydatid cysts does not seem to have received much notice in English works. Thus the Australian writers, Dr. J. C. Verco and Dr. E. C. Stirling, in Allbutt's "System of Medicine," refer only to an urticarial rash. In the *Archives Générales de Médecine* of May 23rd Dr. Fuster and Dr. Godlewski have published the following case of "intoxication hydatique suraigue tardive." A man, aged 26 years, was admitted into hospital on Feb. 16th, 1905, for a tumour of the liver. He had been a soldier and had served in Africa, where he suffered from malarial fever. In August, 1904, he felt pain in the hepatic region and readily became fatigued. For the previous two months he had noticed a small tumour in the right hypochondrium. Examination showed an ovoid tumour which projected below the end of the seventh rib. The tumour was hard and gave the sensation of a cyst. There were slight hypogastric pain, a continual feeling of hunger, boulimia, constipation, and impeded respiration. On Feb. 22nd an incision was made over the tumour, a trocar was inserted, and a jet of limpid liquid escaped which contained a hydatid vesicle. A tumblerful of fluid flowed out and a solution of formol, 1 in 100, was injected into the cavity. The visceral peritoneum was stitched to the parietal and the sac was opened and 30 hydatid vesicles were extracted from it. The lining membrane of the sac was removed by curetting. A large drainage-tube was inserted and the wound was closed. The patient progressed until the morning of the 27th, when he could not sleep and complained of *pruritus* in the abdomen and limbs. No trace of urticaria could be found. The wound was in good condition and there was not a drop of pus. Clear liquid containing two flattened daughter vesicles was issuing from the tube. At noon the *pruritus* increased and at 3 P.M. the respiration became jerky. The patient perspired profusely and he sat in bed with his head hanging forward and could not raise it. The jaws were closed as if from trismus but could be opened easily. Kernig's sign was present. At midnight the head was maintained in the same position by slight contracture. The perspiration was diminished and there were jerky and convulsive movements of the limbs. There was a good pulse of 100 and the temperature was normal. At 9 A.M. on the following day the symptoms persisted, the intelligence was preserved, the respiration was of diaphragmatic type and jerky, and there was hiccough. There were asphyxial crises, cyanosed lips, local asphyxia of the extremities, and cold sweats. Convulsive movements took place. There were trismus, contracture of the neck, and involuntary grimacing. The patient replied to questions but no longer saw anything and the corneæ lost their lustre. The crises occurred more frequently, the respirations became more convulsive, the pulse became slower, and death occurred at 2 P.M. The necropsy showed a hydatid cyst of the size of the fœtal head growing from the right lobe of the liver and intimately adherent to the duodenum, the pancreas, and the posterior surface of the pylorus. It contained no vesicles and there was not a trace of pus. The wall was very vascular. The other abdominal organs were normal except that the spleen was large. The meninges and brain were congested and the latter was œdematous. It is noteworthy that symptoms did not appear until five days after the operation. Several cases have been recorded in which death occurred immediately after operation on a hydatid cyst, but such a late appearance of symptoms is rare. However, cases have been recorded in which symptoms appeared on the third and on the fifth days. Older writers (Cadet de Gassicourt and Frérichs) thought that such symptoms were due to a subacute inflammatory or septic process. But in this case there was no trace of peritonitis and there was no pyrexia. The most rational hypothesis is that the symptoms are a toxic effect of the hydatid fluid. Mr. Thomas Bryant has recorded a case in which some seconds after puncture of a hydatid cyst vomiting, syncope, and epileptiform convulsions occurred.[1] Chazoulière has reported the case of a man, aged 38 years, who had a hydatid cyst for 20 years. Four days before admission into hospital he was attacked with hiccough, fever, rapid respiration, and convulsions of the upper limbs. On admission the temperature was 104·9° F. On the following day there were coma and contracture of muscles and death occurred during an epileptiform fit. The necropsy showed diaphragmatic peritonitis and hydatid fluid in the peritoneal cavity. Chauffard has described the case of a vigorous man, aged 35 years, who had a hydatid cyst of the liver. After an exploratory puncture there followed malaise, anguish, and agitation. The patient suddenly scratched the neck, internal surfaces of the thighs, and lower abdomen. Two minutes later there was involuntary grimacing, with tonic contraction of the limbs, spasms of the face, cyanosis, and foaming at the mouth. After an interval of a minute a second attack of convulsions occurred and was followed by asphyxia and death 25 minutes after the puncture. The liquid of hydatid cysts seems to contain toxins which some have described as ptomaines, others as toxalbumins. The experimental injection of the liquid into the peritoneal cavity of animals has given variable results. Sometimes no effect was produced. In other cases such phenomena as fever, convulsive movements more or less generalised, and slow and difficult respiration followed. Intravenous injection causes more acute symptoms. These facts agree with the clinical observations that the symptoms of hydatid intoxication are variable. Pruritus, accompanied or not by urticaria, and erythema have been observed. Gastro-intestinal symptoms, such as nausea, vomiting, or diarrhœa, may occur. The most frequent results are collapse and syncope accompanied by cold sweats and coldness of the extremities. Often the pulse is strong and slow. Sometimes there is also acute dyspnœa ; there may be crises of asphyxia with slow respiration, which may be suspended, and cyanosis of the face and extremities, or there may be distressing hiccough. The crisis lasts two or three minutes. Death may occur from asphyxia or syncope. Absorption of the hydatid fluid seems to take place either through the peritoneum or through the wound. No method of operating furnishes a safeguard against such accidents which, however, are rare.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: ELECTION OF MEMBERS OF COUNCIL.

A somewhat unusual event has occurred in connexion with the approaching election at the Royal College of Surgeons of England. Mr. W. Bruce Clarke was one of the candidates; he had been nominated and his name had been placed on the voting papers, but he has now withdrawn. The reason for this has been given in a circular letter which he has addressed to the Fellows. Mr. Bruce Clarke states that when he became a candidate for the Council he was not aware that Mr. Harrison Cripps, who is his senior colleague at St. Bartholomew's Hospital, had decided to stand; but when he found that Mr. Cripps had been nominated he decided to withdraw. Under the regulations of the College Mr. Bruce Clarke's name will still have to come before the electors, as a candidate who has been nominated cannot withdraw his name, but, of course, Mr. Bruce Clarke's intimation that he does not wish to stand will have almost the same effect—the electors will not give him any votes. As the case now stands there will be only one unsuccessful candidate and this is certainly a condition of things which has never existed before at the Royal College of Surgeons. It is necessary that six Fellows should be present before the counting of the votes can begin and we would therefore suggest that any Fellows who can spare the few minutes needed should attend at the College to assist in the election. The time of the commencement of the election is 2 P.M. on Thursday, July 6th.

THE ORDER OF ST. JOHN OF JERUSALEM IN ENGLAND.

On June 22nd the celebration of the annual festival of the Order of St. John of Jerusalem in England was inaugurated by a sermon preached in St. John's parish church, Clerkenwell, London, by Archdeacon Sinclair. Referring to the work of the British Ophthalmic Hospital at Jerusalem, the Archdeacon of London said that the hospital contained 42 beds and that 560 in-patients were admitted in four months. The new out-patient cases numbered 6945. The operations performed were 1710, 898 of which were serious enough for the administration of anæsthetics Such work was better than all the conquests of the most heroic Grand Masters of ancient days. The ambulance branch of the Order was constantly performing public service and the Order was diffusing the spirit of health and healing among the community. Subsequently the members of the Order paid a visit to the crypt and adjoining chapel erected by the Knights Hospitallers *circa* A.D. 1170. The altar of the chapel has recently been provided with a hanging of old needlework presented by Lady Galway and believed to have adorned originally the chapel of St. John in the cathedral of Florence. Later, the annual general assembly was held in the St. John's Gate, Clerkenwell, under the presidency of Lord Egerton of Tatton, Chancellor of the Order, and on the following morning Holy Communion was celebrated in St. John's parish church.

DR. ARMAND BERNARD AND THE LIVERPOOL ROYAL INFIRMARY.

Much regret was manifested in professional circles in Liverpool when it became known recently that Dr. Armand Bernard, surgeon to the lock department of the Liverpool Royal Infirmary, and for some time the senior member of the staff of the hospital, was about to resign in consequence of his having completed his term of office as defined by the laws. It was felt that Dr. Bernard deserved some special consideration from the fact that at the time of the rebuilding of the infirmary he relinquished his wards which were utilised for medical cases during the four years from the closure of the old infirmary in 1887 to the opening of the new infirmary in 1891. As the lock wards were not rebuilt Dr. Bernard received no compensation for disturbance in the shape of improved accommodation, and the four years were, therefore, a dead loss to him. The committee of the Royal Infirmary has therefore decided that Dr. Bernard shall continue in office for two years longer. It should be pointed out, as justifying this resolution, that there is no assistant surgeon to the lock department, so that it does not keep back the promotion of any junior member of the staff and also that Dr. Bernard is clinical lecturer on venereal diseases in the University of Liverpool and the only systematic clinical teacher in that subject in the city. His Saturday morning demonstrations constitute an important part of the clinical teaching of the infirmary and are highly appreciated by the students and it is a matter for congratulation that they are to be continued.

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[1] Transactions of the Clinical Society, 1877-78, p. 230.

"CHEMIST-OPTICIANS."

A RECENT number of our esteemed contemporary the *Pharmaceutical Journal* contains evidence that the curious hybrid designation above printed is shortly to come into use among dispensing chemists and that the action of spectacle-sellers in setting themselves up as practitioners in ophthalmology is bringing into the field a body of rivals who intend to dispute with them the profits of the new calling. "A Chemist-Optician Candidate" has been communicating to the *Pharmaceutical Journal* the particulars of an examination to which he has been subjected by the Spectacle Makers' Company and he relates his success in diagnosing and in prescribing for a case of compound myopic astigmatism and a case of "4 D. of esophoria in each eye." It seems unkind on the part of the spectacle makers thus to raise up rivals to the members of their own fraternity, and it is difficult to say at what point the influence of their proceedings will be stayed. Obviously, no "counter prescribing" will for the future be complete unless it takes due account of "eye-strain"; and before long we may have "*modiste*-opticians" who will undertake to supply fashionable ladies with glasses not only adapted to the requirements of their eyes but also so tinted and so constructed as to be in harmony with their successive variations of costume.

"RETURN" CASES OF SCARLET FEVER.

THE occurrence of so-called "return" cases of scarlet fever—that is, fresh cases apparently due to infection from individuals discharged from isolation hospitals as cured and non-infective—demands a careful consideration of the duration of the infective stage of the disease and the conditions which tend to prolong it. That such cases occur there seems to be no doubt, and Dr. Egerton H. Williams in his annual report of the infectious disease hospitals of the city of Sheffield for the year 1904 gives some interesting statistics. In a total of 1981 cases discharged from the hospitals after scarlet fever 70 were associated with the reappearance of that disease in the houses to which they returned or its development among persons coming in contact with them. On investigation of these 70 cases, however, it was ascertained that in a certain number other sources of infection could be found, so that Dr. Williams was able to eliminate 24 of them. Of the remaining 46, 19 were regarded as "improbable return" cases, leaving 27 "possible" cases—that is, cases in which no other source of infection could be traced and which were therefore probably true "return" cases. The importance of this matter is emphasised by a recent legal action in the Court of *Nisi Prius* before Mr. Justice Walton which is noticed in the issue of the *Times* of June 13th among notable law cases. The son of the plaintiff in this action when suffering from scarlet fever was removed to the hospital for infectious diseases provided by the Liverpool corporation. On his return home from the hospital he is stated to have spread the disease among his brothers and sisters. The jury found that there was a want of reasonable skill and care on the part of the medical practitioner appointed by the corporation in discharging the patient, and it was contended that the corporation was answerable for his acts. The judge, however, ruled otherwise, stating that the practitioner, though a servant of the corporation for some purposes, was not such for others; in discharging patients he acted merely as the adviser of the corporation. It is now very generally admitted that the discharges from the nose, throat, and ears of patients convalescing from scarlet fever are more infective than the desquamating cuticle except perhaps that first shed, while the secondary desquamation which occurs in some cases is probably not infectious at all. In Dr. Williams's interesting report previously referred to, it was found on investigation of the 70 individuals suspected of causing "return" cases that 13 had discharging ears, 14 a discharge from the nose, and five a sore mouth or nose, the remainder showing no abnormal conditions. At the time of discharge from the hospital all were noted as being perfectly healthy with the exception of the 13 ear cases. In the Sheffield fever hospitals cases with discharging nose or ears are isolated and if the discharge does not clear up while in hospital in ear cases arrangements are made with the parents of patients prior to discharge about their subsequent treatment. During the year 1904 303 cases were thus isolated, 112 going out cured. Of the remaining 191 only the 13 cases just referred to were suspected of producing "return" cases and on investigation of these seven were definitely proved not to have done so. These figures show the importance and the relative frequency of "return" cases; in other series of cases the frequency has been found to be from 1 to 1·86 per cent. They illustrate also the difficulties in determining when the period of isolation of cases of scarlet fever may be safely terminated not only in institutions but also in private practice. The Medical Officers of Schools Association advises that isolation should be maintained for "not less than six weeks from the date of the appearance of the rash provided convalescence is completed and desquamation has ceased, and there is no sore throat, discharge from ear, suppurating glands, or eczematous patches." Dr. Williams's figures and the experience of others show, however, that in spite of careful examination of cases before discharge "return" cases may occur even after prolonged isolation, the average stay in hospital of his 70 cases being 54·3 days. Unfortunately at present there is no bacteriological or other test available for determining whether cases are infective or not and no infallible means of disinfection are known—facts which make it difficult to endorse the views of the jury in the case mentioned above.

CERTIFICATES OF PROFICIENCY IN VACCINATION.

THE provisions of the Vaccination Order of 1898 required that any medical practitioner before he could enter into a contract with a board of guardians for the performance of public vaccination should produce a certificate of proficiency in vaccination. If he had not obtained such a certificate as a condition of obtaining his degree, diploma, or licence, he had to obtain one from some person duly authorised by the Local Government Board, and this could only be done after the applicant had been duly instructed and examined in the practice of vaccination by such duly authorised person. The Local Government Board has now issued an Order amending that of 1898 and in a circular accompanying that Order the Board sets forth the reasons which have induced it to issue the amending Order as follows:—

> It has been represented to the Board, however, that under this provision a person who took a diploma or degree from an examining body at a date wher [illegible] not require as a condition of such diploma [illegible] of the prescribed certificate of [illegible] the Order of 1898 to devote a [illegible] instruction in vaccination, although, as [illegible] may be fully conversant with the practice of vaccination and competent to perform the work of a public vaccinator. With a view of meeting this point, so far as can properly be done, the Board have decided to vary the provisions of the Order, so that in certain cases of the kind the certificate of proficiency may be obtainable by a practitioner after examination only and without a special course of instruction immediately before the examination.

The "certain cases of the kind" are defined as follows; such certificates may be issued—

> (*a*) To any registered medical practitioner who possesses a diploma, licence, or degree conferring the right of registration under the Medical Acts, and granted by an examining body in England and

> Wales or Scotland prior to the date at which the examining body first required, as a condition of obtaining the diploma, licence, or degree, a certificate of proficiency in vaccination given by a person authorised by us to act for the purpose; and (b) to any registered medical practitioner who possesses a diploma, licence, or degree which confers the right of registration under the Medical Acts and which has been or may be granted by an examining body in Ireland, before Jan. 1st, 1906.

The circular accompanying the Order gives the names of persons who have been authorised by the Local Government Board to give certificates after examination only and the stations where such examinations are held. They are eight in number, situated respectively in London, Birmingham, Bristol, Liverpool, Newcastle-on-Tyne, Aberdeen, Edinburgh, and Dublin. The London certificates after examination may be obtained at Tolmers-square Institute, Drummond-street, N.W.

WOMEN AS PHARMACISTS.

THERE can be no reasonable objection to the employment of women in pharmacy so long as they are duly qualified and the qualification of the Pharmaceutical Society to dispense medicines should be insisted upon as much in their case as in that of men pharmacists. Temptations there are, no doubt, open to qualified persons to offer their services to a company of unqualified persons in order to carry on for them a pharmaceutical business. The temptation has extended to women pharmacists and we learn that a company has been promoted with a qualified woman chemist and druggist on the directorate to conduct amongst other things a department of pharmacy. The real nature of the business may be gathered from the fact that "the other things" include the businesses of apothecaries (?), engineers, journalists, moneylenders, house agents, bill-posters, coal merchants, grocers, printers, dentists, and tobacconists.

THE LOCATION OF THE FIBRES FOR TEMPERATURE AND PAIN IN THE TRACT OF GOWERS.

MANY writers think that the sensations of pain and temperature are conveyed in the spinal cord by the tracts of Gowers but the evidence is not conclusive. In the *Journal of Nervous and Mental Disease* Professor W. G. Spiller has recorded a case which appears to give the best evidence yet offered of this view. A man, aged 23 years, came under observation on Sept. 1st, 1904. Four months previously he began to have pain in the lumbar region and abdomen. Soon numbness was felt in the feet and gradually involved the legs below the knees. There was extreme genu valgum which had existed for about five years. On the abdomen were scars which the patient said were due to painless burns in childhood. In the lower limbs resistance to passive movements was slightly diminished and sensibility to touch was normal or nearly normal, while sensibility to pain was abolished or almost abolished. Sensibility to temperature was almost lost below the knees and was much impaired in the thighs and lower part of the trunk. There was slight kyphosis about the tenth dorsal vertebra. After a fall backwards down a flight of steps the patient became completely paralysed in the lower limbs. Sensibility to touch was then lost in the right lower limb for a time. Sensibility to temperature and pain was absent in the right leg and foot and in the left foot. The knee-jerks were increased and Babinski's sign was present. Later sensibility to touch was found everywhere in the lower limbs and sensibility to pain was irregularly present, the response being very uncertain, and sensibility to temperature was much impaired. The patient died four months after the accident. The necropsy showed tuberculous meningitis and caries of the vertebræ and a small tubercle in the right lateral column at the lower end of the thoracic cord involving Gowers's tract. About an inch higher another small tubercle was found involving the left tract of Gowers. There was some myelitis which evidently had chiefly developed after the fall, for previously the weakness in the lower limbs was slight.

CONVERSAZIONE AT UNIVERSITY COLLEGE, LONDON.

A RECEPTION and conversazione were held at University College, Gower-street, W.C., on June 28th. The proceedings were a great success and there was a large company present attracted by the excellent programme provided and the specially interesting character of the scientific exhibits. The visitors were received on the grand staircase by the Treasurer, the Principal, the Dean of the Faculty of Arts and Laws, the Dean of the Faculty of Science, the Dean of the Faculty of Medicine, and the President of the Union Society. Amongst the exhibits which excited considerable interest were Professor J. Norman Collie's Chinese and Japanese art collection; antiquities from Egypt and Sinai, by Professor Flinders Petrie; radio-active phenomena, by Sir William Ramsay; mathematical instruments and models, by Professor Karl Pearson; trypanosomata, by Dr. D. N. Nabarro and Dr. T. H. C. Stevenson; and a botanical collection, by Professor F. W. Oliver. During the evening short lectures were given with lantern illustrations. The occasion provided a perfect feast of things literary, historic, artistic, and scientific.

PROPOSED NATIONAL LEAGUE FOR PHYSICAL EDUCATION AND IMPROVEMENT.

A DINNER was given at the Hotel Cecil on June 24th under the chairmanship of the Bishop of Ripon, a number of representatives of the press throughout the country being invited to meet the members of the proposed National League for Physical Education and Improvement. After the usual loyal toasts, "Success to the Proposed National League" was proposed by Sir Henry Craik, K.C.B., who referred to the objects of the movement and to the part played by Sir Lauder Brunton in its inception. General Sir Frederick Maurice, K.C.B., in proposing the toast of "The Press," appealed to the patriotic and altruistic sentiments of those members present to help forward the movement, which was one of truly national importance. Sir Hugh Gilzean-Reid, in reply, recognised the importance of the work proposed to be undertaken by the League and foretold success for it. In reply to the toast of his health, proposed by the Rev. Russell H. Wakefield, Mayor of Marylebone, the Bishop of Ripon referred in eloquent words to the need for such a movement and the useful part the League could play in correlating and extending existing agencies, in promoting the best interests of the nation and improving the standard of national health and physique. The objects of the proposed League are such that all medical men will wish it hearty success and the need for its existence is emphasised by the report of the interdepartmental committee and by the percentage of rejections of those offering themselves for military service.

WE regret to announce the death of Surgeon-General James Macnabb Cuningham, C.S.I., I.M.S., Honorary Surgeon to the King, which took place on June 27th; and of Inspector-General Alexander Turnbull, R.N. (retired), at the age of 67 years, on June 22nd. Inspector-General Turnbull, as staff-surgeon of the *Bacchante* in 1880–82, was in medical charge of the late Prince Albert Victor Duke of Clarence and of Prince George (now Prince of Wales) on board that vessel.

THE distribution of prizes to the students of St. Bartholomew's Hospital will be held in the great hall of the hospital on Wednesday, July 12th, at 3.30 P.M. The prizes will be distributed by the Right Honourable Lord Ludlow.

MEDICINE, ITS PRACTICE AND ITS PUBLIC RELATIONS.

CHAPTER XVIII.[1]

THE PUBLIC AND THE MEDICAL PROFESSION.

Bad Effects of the Want of Concord among Medical Men.—Medical Etiquette and Medical Ethics.—The Public Conception of Medical Duties.

IT is an especially unfortunate commentary upon the great good which would follow upon medical organisation that at the present moment certain sections of the medical profession should be, or should so often appear to be, directly pitted against each other. There is a tendency on the part of certain general practitioners whose grievances are undoubtedly the hardest to bear to regard consulting practitioners and the General Medical Council, acting separately or in combination, as their natural enemies. They consider and write that "the prestige of the general practitioner has been lowered" because from the many circumstances which have been narrated his emoluments have decreased. This is a most unlucky use of the word prestige, the only lowering of prestige that has taken place being that which must follow upon the public exhibition of professional bad feeling. The general practitioner has the sympathy of all the profession who see him preyed on by quacks and irregular workers in medical fields and they are only opponents to reform—that is, they perpetuate the bad things now existing—who represent all consulting medical men and all public medical officials as the oppressors of the general practitioner, or who suggest that the General Medical Council has no care for his wrongs.

There are unscrupulous consultants who do their calling, as well as the public, great disservice by endeavouring to remain in sole attendance upon patients who have been brought to their attention by general practitioners. Any attempt to undermine the confidence of the public or to supplant the general practitioner will surely bring the system under which the family medical adviser is wont to obtain an independent and perhaps specialised opinion upon a difficult case into disrepute. The public is so largely a gainer by the readiness with which medical men, as a rule, are willing to submit the diagnosis and treatment of cases under their charge to the critical inspection of their colleagues, that the consultant practitioner who attempts to secure a patient for himself, by replacing the family man who first introduced the patient to him, not only commits a dishonourable act but injures the public in a very direct manner. The position so seldom arises that to describe the consulting medical man as living by piratical excursions into the territory of his brethren is ridiculous, and mischievous as tending to lower the public estimate of the medical profession. The same may be said of violent diatribes against medical officers of health and public vaccinators. Undoubtedly both the medical officer of health and the public vaccinator are by the circumstances of their offices sometimes placed in an antagonistic position to the general practitioner, but these are matters to be discussed temperately with a view to their amendment and not to be accepted in a sweeping way as proofs that the general practitioner is wantonly maltreated by his fellows. The monopoly which has been created in behalf of the public vaccinators is unfortunate and there is no reason why it should not be done away with, but to effect this arguments will have to be employed. The bald statement that public vaccinators receive fees which should be shared among their brethren cannot possibly stir any legislature to action, while not to recognise the arduous, delicate, and valuable work that is being done by public vaccinators is blind—as blind and ignorant as it is to represent all public vaccinators as overpaid plutocrats. The medical men who talk in this way and who regard more temperate views as cowardly are committing a serious error. At a time when there are many real and necessary reforms awaiting initiation they insult the intelligence of those who might be willing to help.

The growth of a general desire among medical men to form a united profession must occur before many of the disabilities under which the profession lies will be removed, but it is certain that the public would more often be on the side of the medical man in his demands for intelligent and sympathetic treatment if the public had a clearer conception of his difficulties. Next to union among medical men public sympathy is required. The various circumstances which conspire to press hardly in different ways upon different sections of the profession are not in the least understood by the public, who regard anything in the nature of a cry for reform among medical men either as a proof that the ranks of the profession are overcrowded or as a design upon the part of certain operatives, banded together by a mysterious tie called medical etiquette, to strike for higher pay. With respect to the alleged overcrowding of the medical profession the figures, already quoted,[2] show that there is misconception on this point. There are too many medical men in certain places trying to do the same thing—that is to say, that the distribution of medical men is faulty both as regards their economic position and as regards their public utility—but the numerical ratio of the population to the medical profession has not fallen. And similarly it is a grave mistake to suppose that the members of the medical profession are in corrupt league to extract money out of the public, though it is not difficult to see how this conception had origin. The most evident examples of union among medical men have been the local combinations to resist the tyranny of medical aid associations and of workmen's clubs. The battle having been fought in these cases largely upon the question of remuneration the public has been led to believe that this is the only question at issue and does not see the underlying difficulty, viz., that the lay employer—whether this be a Government department, a municipality, or a miner's foreman—frequently fails to regard medical service as in any way differing from the service of the tradesman in response to a wage. There are coroners of the same turn of mind who regard the wish of medical men to give evidence where it would conduce to the return of a just verdict as proof of hunger for a fee; and there are barristers and even judges who consider that every expression of opinion from a medical witness must be made in deference to his retainer as an expert. Judges, barristers, and coroners give voice to these views, certain journals give prominence to them, and lo! there is the medical profession branded as a venal association that is ever working for its own aggrandisement against the public weal. What reform would such a profession be likely to ask for save such as would put money in its purse?

The deduction is fair enough but it is made from an incorrect observation of facts. What, then, is medical etiquette? It is the behaviour entailed upon medical men by the observance of medical ethics, and the rules regulating medical conduct are designed with a view of marking the difference between the profession of medicine and a trade. There is no need more than to indicate the distinction, for the comparison has been drawn so frequently. A profession and a trade have this in common—each is a vocation in which a man seeks to make a livelihood by serving the public. But in trade the rivals can compete for public favour by asserting that their methods of ministering to their clients are better than those of others following the same calling. They can do this without taking an unfair advantage of the public, for the public can judge whether the wares sold to them are what they want, are up to sample, and are in accordance with advertised claims. In a profession these assertions cannot be made without a risk of deceiving the public, because the public cannot judge of their truth. The specialised work of a medical man cannot be gauged by any who have not special knowledge, so that for the protection of the public medical men have agreed not to make any public claims to skill or learning. In this way the loud pretender is, at any rate to a great extent, defeated, but from this situation arises the fact that medical men must trust each other a great deal and must maintain between each other a high code of honour. They must treat each other as they would be treated.

The public belief that medical men are guided in their behaviour by a set of quaint and secret rules designed to maintain medical interests at the expense of the popular purse receives confirmation from the fact that many medical men appear to want to regulate their conduct towards each other and towards the public by some elaborate code which shall meet any professional difficulties that may arise. They do not find it a sufficiently explicit position merely to say that obedience to the dictates of medical ethics implies application to the ordinary chances of professional life of the excellent rule that a man should do as he would be done by. If only medical men and the public would see that the gist of medical ethics lies in that sentence the medical attitude in public affairs would be better comprehended. Aphoristic by-laws designed to meet special cases are often useful and it is not intended to decry the value of one or two codes of ethics that have been published, but such books are likely to mislead the professional man as much as the public, if their limitations are not recognised, by causing both to think more of special instances than of general principles. Take, for example, this common situation. A medical man is in attendance upon a patient and the patient desires to discharge him and to employ somebody else. The patient finds that there is difficulty in obtaining the service of the second medical man who, though prepared perhaps to assist in any acute emergency, declines to take over the case save from the hands of the previous medical man. The patient complains that obstacles are placed in the way of his obtaining the medical advice that he wishes to have, and blames "medical etiquette." His view is supported by the unfortunate circumstance that many medical men write and speak as if they believed that, having once been called in to see a patient, they had obtained a vested right in that patient and could on no account be dislodged from his bedside. Now clearly a patient has the right to see whatever medical man he likes, but it has been thought advisable by the medical profession, in the interests as much of the patient as of the medical man, to lay it down that a second medical man should not attend until the first medical man has been definitely discharged from the case, when the second medical man would receive from the first medical man a statement of the circumstances. The reason for this is obvious. The patient being without medical learning cannot know that the treatment, which is apparently doing him no good, is the wrong treatment, and cannot tell a second medical man even what that treatment has been. If the second medical man does not consult with the first he is treating the case without being in possession of the facts necessary to make a diagnosis. If the case goes well he will obtain credit at the expense of a brother practitioner which he may not deserve, and mark—he will obtain the credit even though he repudiates its justice. If the case goes ill it will be considered that the preliminary mismanagement of the first medical man had dictated the bad issue. Now let the second medical man consider whether he himself would like to be placed in the position in which the patient has placed the first medical man. This is but one example of situations that may arise by the score and most the others can be similarly solved by the simple application of the same rule. A code-book undoubtedly has its uses if too much is not expected of it, but however well drawn up it may tend to elaborate and to obscure what should be simple, while any attempt to meet all cases by special decisions must fail. As life in general gets more and more complicated it becomes more and more impossible to lay down cut-and-dried rules to meet all sorts of emergencies.

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[1] Chapters I., II., III., IV., V., VI., VII., VIII., IX., X., XI., XII., XIII., XIV., XV., XVI., and XVII. were published in THE LANCET of Feb. 18th (p. 447) and 25th (p. 517), March 4th (p. 593), 18th (p. 736), and 25th (p. 817), April 1st (p. 877), 15th (p. 1017), 22nd (p. 1089), and 29th (p. 1151), May 6th (p. 1218), 13th (p. 1287), 20th (p. 1375), and 27th (p. 1449), June 3rd (p. 1533), 10th (p. 1584), 17th (p. 1651), and 24th (p. 1741), 1905, respectively.

[2] See Chapter III.

The belief that the medical profession is governed by a set of rules framed with a special design to exploit the public is blended in the public mind, to the detriment of the profession, with a very different idea. The public conceives that medical service must be in a sense a poor thing because so much of it is rendered gratuitously. The public view—at any rate the view of the poorer section of the public—of the connexion of a member of the medical staff of a hospital with his institution is a comically paradoxical one. First it is thought that the medical officer is paid for his work and is greedy to make money out of the afflictions of his fellows. On learning that he is not paid at all the public at once thinks meanly of his exertions, not being able to understand that good work can be unpaid work. It is not understood that gratuitous work is done by medical men because the experience so gained is valuable to mankind and because only in this way can material for scientific progress be obtained, every whit as much as because, without the experience furnished by hospital wards, few medical men can become great and very few can become successful. Legitimate ambition and legitimate desire to be properly paid for good work play their part in inspiring the honorary staffs of our great free hospitals, for the value of the hospital connexion is realised to its full; but the desire to increase the stock of the world's wisdom and to decrease the sum of human misery, the love of science for itself and affection for the medical profession,—these things also confirm medical men in their willingness to serve the sick poor without reward in money, indeed at a vast expense of valuable time and knowledge. This is the professional conception of the situation and it should be understood by the public.

But undoubtedly those who see in this altruism of the medical profession a confession of weakness, and who are influenced accordingly to treat the members of the medical profession as of no particular account, receive from other circumstances frequent support. For it is not only the member of the hospital staff who works for nothing but all medical men are constantly serving the public gratuitously. The General Medical Council, which does work of paramount importance to the State, receives no subsidy whatever from the State and has accordingly been in considerable pecuniary trouble. When the country decided that the registration of midwives was necessary machinery in the shape of the Midwives Board was devised for the proper examination of candidates, for maintaining an official roll of the women, and for exercising disciplinary powers over them. In the constitution of the Midwives Board every precaution was taken to guard the interests of the public and to secure fair play for the registered midwife, but there was no provision made for paying the Midwives Board. The work is done for the State by busy medical men and busy public-spirited women and should be paid for by the State. Again, under the Midwives Act the midwives are in certain circumstances required to seek medical coöperation, but the Act contains no provision for the payment of the medical man, it being apparently taken for granted that he will give his services if the patient cannot afford to pay. The same thing is seen throughout our social scheme, the same very flattering but very embarrassing reliance upon the altruism of the medical profession, and so much has it become the spirit of medical men to give their work away that even such a protest as I am now making will be voted vulgar and "tradesmanlike" by some superior spirits. Why should a medical man be expected to sign dozens of gratuitous certificates? School boards want certificates to explain the absence of their scholars, sick clubs want certificates to guide them in making allowances to their members, life assurance offices want certificates to assist their regular officers to estimate risk; in the last case a minute fee is usually proffered by the office when it is not possible to make the proposer for a policy pay, in the other cases the work is done by the medical profession for nothing. I say "the work" advisedly, for sometimes the filling up and signing of these certificates wastes a serious amount of time and involves considerable writing. All such sick certificates should be paid for either by the persons who want to show them or by the persons who insist upon their being shown. It would be logical to go further and say that death certificates should be made the subject of a fee to medical men. There would be in some respects difficulty in supporting this claim but we may be perfectly certain that nobody but a medical man would ever be expected to give death certificates for nothing. The copies of them, which are not made by medical men, are subject to a fee.

In all public affairs parsimony towards the medical man exists. The scale of remuneration of medical witnesses is ridiculously low. This is acknowledged by everyone but as yet there has been no remedy. Municipal bodies, whose spendthrift policy in every direction is notorious, frequently attempt to get their official sanitary work done on the cheap; a certain class of coroner delights in dispensing with the attendance of a medical man at inquests, alleging with perfect gravity his position as guardian of the public purse in extenuation of his recklessness. Yet surely anyone who thinks must see that the cause of economy is not really served by making the busy medical man unable, save by fining himself a substantial sum of money, to give evidence in a law court, nor by sweating the man on whom the public health of the community exists, nor by increasing the inevitable percentage of unjust verdicts delivered by coroners' juries. Not long ago it was proposed in a certain rural sanitary district that measles should be raised to the dignity of a notifiable disease, when the rural council in a light-hearted manner resolved to call upon the medical men of the neighbourhood to notify all cases occurring in one household for one fee. The first idea of the authority, in making a proposal believed to be for sanitary progress, was to save a part of the money due for the sanitary assistance of medical men! Why should the first idea of a public body planning a development under an Act of Parliament be to invite the medical practitioners of the neighbourhood to break the law with the view of receiving smaller fees than Parliament has awarded them? Why? First, because it is ingrained in public bodies to try to get medical assistance for nothing; and secondly, because the public, knowing nothing whatever of the details of medical life, believes that an epidemic of measles brings a fortune to the medical men of the neighbourhood. Medical men in a rural district do not make money by the prevalence of measles; on the contrary, an epidemic may leave them out of pocket. Their work is enormously increased but the remuneration, though in the aggregate larger, does not keep pace with the increased expenditure. This is not a theory, it is a fact, and one that it would be just of the public to remember.

I will give one more example of popular misunderstanding of the position of a medical man. It frequently happens that a medical man cannot come to a patient when he is summoned. Sometimes he is under an engagement to go elsewhere at too short an interval, sometimes he is too fatigued, sometimes he declines to come unless his fee is paid. If, unfortunately, the patient dies a coroner's jury almost invariably censures the medical man, the coroner frequently allows them to do so without protesting, and many newspapers, especially those that are conspicuous for printing the indecent advertisements of quacks, join in denunciation of the "callous doctor." In a moment a citizen who perhaps does more work for the public at a low rate of remuneration than anyone else in the community finds to his bewilderment that the simple exercise of his right to attend a case or not has earned him the reputation of a Nero in the neighbourhood. The rider of an ill-informed jury charges him with gross inhumanity in not attending the patient or holds him up to odium because he wanted to be paid for his onerous services. Yet if members of the public would only think they would detect the gross injustice of such a proceeding. In every instance where to do so is a matter of real urgency the medical man goes if possible wherever and whenever he is summoned, and it is a distinct hardship upon the medical profession that the contrary opinion should be held. Although a large proportion of a medical man's practice is unpaid, yet, when it is made clear to him that he is wanted to stand between death and a fellow creature, he goes. He does not think of his fee, he goes. He does not think of his convenience, he goes. But where the imminence of the case is not made clear he does not necessarily attend without a fee. It is not only unfair to expect the reverse but—and this is the point on which emphasis should be laid—it is unfair to those of the community who do pay their medical man that he should be at the beck and call of those who do not. A medical man has rarely any spare time and every extra visit made means a visit the less in some other direction. When a witness at an inquest tells of "a cruel doctor who wouldn't come until his fee was paid down," inquiry (which is so rarely made) would almost invariably elicit that the serious nature of the case had not been made clear.

It would not be difficult to continue to give instances showing that the medical profession does not obtain fair play at the hands of the public, but I think it may be taken as established that such is the case. These things are not narrated in any spirit of grumbling—there has been too much grumbling among medical men. They are set out as indications that the medical profession is very much misunderstood by the public and it seems to me that no effort should be spared to alter this state of affairs. The formation of local medico-ethical societies or the discussion of ethical affairs at local medical societies appears to be the best way of arriving at the solidarity of opinion that must necessarily be a prelude to any real and substantial reform. Such debates might also afford an opportunity of clearing up many points of difficulty, for removing many causes of friction between the medical profession and the public. On nursing questions, on question of hospital administration, on such social questions as the promotion of temperance and the prevention of racial deterioration medical men and laymen constantly confer and with mutual advantage. The assistance of laymen at debates upon questions of professional ethics might be useful; the good feeling evinced by such invitations and acceptations would certainly be very valuable.

If the first step towards the reform of the admitted abuses in the medical profession is the establishment of solidarity among medical men the second is the establishment of confidence between the medical profession and the public. When these two consummations exist reform will be imminent.

(To be continued.)

EPSOM COLLEGE.

THE annual general meeting of the governors of Epsom College was held at the office in Soho-square on Friday, June 23rd, the treasurer, Sir Constantine Holman, M.D., being in the chair. He was supported by a large number of governors, including Sir William Church, Bart. (the chairman of the council), Sir Arthur T. Watson, Bart., K.C., Mr. J. Paul Bush, C.M.G., Mr. G. H. Makins, C.B., Mr. John H. Morgan, C.V.O., Mr. Reginald Harrison, Dr. P. W. Latham, Dr. F. Needham, the Rev. E. W. Northey, and Dr. J. Roberts Thomson. The scrutineers (Dr. Roberts Thomson, Dr. Needham, and Mr. Makins) reported the result of the voting for pensioners and foundation scholars to be as follows:—

PENSIONERS.

Name.	Votes.	Name.	Votes.
1. Mary A. Paul	6370	3. Catherine Reese	5887
2. Mary Sewell	6052	4. Elizabeth Matthews ...	5766

FOUNDATION SCHOLARS.

Name.	Votes.	Name.	Votes
1. Kenneth T. K. Wallington	9147	5. William O. Deacon ...	8324
2. Robert K. MacRoberts...	9058	6. Ronald H. Kershaw ...	7505
3. Bernard S. Pullan... ...	8990	7. Bernard S. Lidiard ...	6352
4. Royale S. Dutton... ...	8867	8. Alexander L. H. Ferguson	5118

The report of the council stated that in order to bring the sanitary arrangements of the College into accordance with modern requirements it had been necessary to undertake works which would probably cost in the aggregate from £4000 to £5000. This very large outlay was to a great extent the result of the imperfect system of laying drains which was in vogue many years ago, and of the omission to remove from the ground disused drains, some of which might ultimately be a source of danger. Moreover, the ventilation of the drains and many of the sanitary fittings needed amendment. As the council deemed it unwise to part with any of the stock belonging to the general purposes fund, it had decided early in the present year to increase the mortgage on the College property from £10,000 to £14,000. Attention was drawn to the fact that the annual general meeting had this year been convened a month later than usual, in order to enable governors who live abroad to vote at the annual election of pensioners and foundation scholars. The council noted with much pleasure the large increase in the number of governors, both annual subscribers and life donors, who reside abroad. Two alterations in the by-laws to be proposed were referred to, one of which will be of great interest to supporters of the charitable side of the institution. Hitherto a donation of ten guineas has had to be given in not more than two payments in order to entitle the donor to be registered a life governor. The council suggested that the stipulation of two payments should be done away with, which will enable one vote for life to be given for each sum of ten guineas, in however many separate sums the money is presented. The council was glad to be able to report satisfactorily on the school, the health of the boys having been on the whole good, the discipline having been excellent, and the usual school games having been played with success. The rifle corps continued to be most successful and the natural history society and other school institutions were flourishing. Nine boys had since the last general meeting passed the whole or a part of the preliminary scientific examination for the degree of M.B., B.S., of the University of London: four boys had passed the University of London matriculation examination in Division 1 and seven in Division 2; seven boys had gained the higher certificate of the Oxford and Cambridge schools examination board with one distinction and 17 had gained the lower certificate; seven boys had gained the second-class certificate of the College of Preceptors, two boys had obtained the first class certificate for drawing (freehand and model) in the art examinations held under the direction of the Board of Education, and seven had obtained the second-class certificate. After careful inquiry the council had inaugurated a pension scheme by which the assistant masters at the College would have suitable provision made for them at the age of 60 years.

In moving the adoption of the report Sir Constantine Holman referred to the fact that this was the jubilee year of the opening of the College and he expressed the opinion that the founder of the College, the late Mr. John Propert, would have been in every way satisfied with the work as at present carried out, and the late Mr. Lumsden Propert, his son, had held the same opinion. He referred to the never-ending appeals which were necessary in order to continue in full the work of the benevolent side of the College, which required a sum of about £8000 a year, and gave in detail the sums which had had to be spent to maintain buildings at Epsom in proper repair. Having referred to the great services which Sir Joseph Fayrer had rendered for so many years as chairman of the council he congratulated the governors on having secured the services of Sir William Church. He stated that the council had recently decided to follow the example of most of the public schools of the country by giving all the boys meat breakfasts and this alteration had been in force during the current term. In conclusion, he referred to the remarkable result of the voting for pensioners and foundation scholars, 11 out of the 12 candidates recommended as the most urgent cases by the selection committee having been elected.

The report was duly adopted, and other formal work having been carried out, Mr. Stamford Felce, who recently resigned his seat on the council, was elected a vice-president in recognition of his services for many years as a member of the council and as chairman of the finance and selection committees. In moving a vote of thanks to the chairman Sir William Church observed that Sir Constantine Holman had had one wish realised in the change of the official name of the institution to "Epsom College," and he hoped that he would soon have his two other wishes granted—namely, that the institution should be free from debt and that the College should be full.

At the meeting of the council held subsequently Mrs. Swales, the highest on the list of unsuccessful candidates for pensionerships, was elected a pensioner, a vacancy having arisen, and Dr. William Collier, President of the British Medical Association, was elected a member of the council.

Looking Back.

FROM

THE LANCET, *SATURDAY*, June 30, 1827.

HOUSE OF COMMONS.

Wednesday, June 20, 1827.

ROYAL COLLEGE OF SURGEONS.

Mr. WARBURTON presented a Petition from the Royal College of Surgeons, complaining of the Regulations of the College. Ordered to be printed.

Mr. WARBURTON proceeded to make the motion of which he had given notice, respecting the Royal College of Surgeons. He observed that, all the evils which usually resulted from a close corporation of any kind, had manifested themselves in the Institution in question. The interests of the many were sacrificed for the benefit of the few. The enactments of the Corporation, of which the commonalty complained, were as follows:—In 1796, a former Corporation, out of which the present Corporation grew, was, in consequence of some irregularity, dissolved. In 1797, an application was made to Parliament for the purpose of establishing the Corporation anew; and a Bill was brought in for that purpose, granting the proposed Corporation many powers, among which was the extraordinary one of monopolising the lecturing on surgery in London, although at that very time many schools of surgery were in existence in the metropolis. After the Bill had passed through the House of Commons, and through several stages of the House of Lords, great secrecy being observed with respect to its provisions, this strange clause was at length discovered, and the Bill was immediately scouted, as it well deserved to be. In 1800, the College of Surgeons obtained their present Charter from the Crown. It was true that the Charter did not contain any such power as that involved in the clause which he had just described; but the College endeavoured, by means of by-laws, to obtain a similar authority. The evil was, that the individuals of whom the Council of the College consisted, were, more or less, connected with the Hospitals, and with the lectures delivered in those Hospitals; and therefore had a direct interest in framing the by-laws in question. By those by-laws it was declared, that the only regular schools of anatomy and surgery were the hospitals of London, Dublin, Edinburgh, Glasgow, and Aberdeen; that no certificate of a pupil could be received unless he had studied in one of the above, containing a hundred patients, for a year; or in a provincial hospital, containing the same number of patients, two years. It was well known, that in the provincial hospitals it was exceedingly difficult to obtain subjects. London, Dublin, and Glasgow, were the only places in which they could be had with any facility. Formerly, it had been considered as the just reward of a surgeon who distinguished himself at the regular hospitals, that if he established himself as a lecturer in private, his class was likely to be numerously attended. It was not enough now, however, for a young man to produce a certificate of attendance on any of these gentlemen, or even of attendance at foreign hospitals; such as those of Paris, Vienna, &c. He had to complain on behalf of the petitioners, that the examinations by the College were private, and it would be readily conceded that great advantages were in almost all cases attendant upon publicity. The petitioners were no advocates for rendering admission into the profession more easy than it at present was, their object being only to make examinations more fair, and the persons admitted more highly qualified for the duties they would be called upon to perform. The examiners were at present appointed for life; and it happened that the science often got the start of them, and they were behind the knowledge which their younger contemporaries possessed. The examinations were often of a very superficial description; and the Admiralty and Military Boards were so dissatisfied with the examinations of the College, that they were obliged to subject persons to a further scrutiny, to ascertain whether they were fit for the public service. It was considered by the College, that all persons who practised the obstetric branch of the profession, as well as all apothecaries, were less qualified than others for the honours and advantages of that institution. Another complaint was, that the College had passed a by-law, which required every student, before examination, to produce a certificate that he had attended a course of winter lectures. This extraordinary by-law was not confined merely to dissection, but it extended to surgery and anatomy. This was the means of depriving of pupils, and consequently of suppressing the lectures which many able men had been accustomed to give in the summer. It was justly complained that the College had made an invidious distinction as to the entrance granted to members and to students into the Theatre. The Museum was opened only twice a week, and then only two hours on each day. This museum was purchased in 1799, and was removed to its present place of accommodation in 1806, and yet no catalogue of its contents was published, and the collection was consequently rendered useless. At the time of making the purchase, the collection contained many MS. of the late John Hunter; and these, from a certain degree of neglect in the council, had been suffered to be destroyed. He regretted that it was now too late to refer these matters to a committee of the house. At an early period of the next session, if the petitioners continued in the same mind as at present, he should certainly move for a committee to inquire into the subject. In the meantime he should move for certain papers, which would afford the necessary information for the guidance of the house. The honourable member concluded by moving for a return from the College of Surgeons, of all public money lent or granted to the College from 1799 to the present time, for the purchase of the Hunterian Museum, and for building, purchasing, repairing, and improving the said College, with the appropriation and expenditure thereof—the regulations under which the members and students are admitted to the

Hunterian Museum, and to the Library of the College—the number of persons examined for practice in surgery—and an account of all moneys received by the College in 1825 and 1826, on account of the members.[1]

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 9369 births and 3877 deaths were registered during the week ending June 24th. The annual rate of mortality in these towns, which had been 14·7, 13·5, and 13·4 per 1000 in the three preceding weeks, further declined last week to 13·0 per 1000. In London the death-rate was 11·7 per 1000, while it averaged 13·5 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 6·7 in Wallasey, 6·8 in Hornsey and in Handsworth (Staffs), 7·4 in Croydon, 7·6 in Tottenham, 8·2 in King's Norton, 8·3 in Willesden, and 8·6 in Southampton; the highest death-rates were 18·1 in Sunderland, 18·4 in Ipswich, 18·5 in Burnley and in Tynemouth, 20·3 in Preston, and 24·2 in Oldham. The 3877 deaths in these towns last week included 348 deaths which were referred to the principal infectious diseases, against 410, 413, and 355 in the three preceding weeks; of these 348 deaths, 127 resulted from measles, 74 from whooping-cough, 67 from diarrhœa, 39 from diphtheria, 23 from scarlet fever, and 18 from "fever" (principally enteric), but not any from small-pox. In Croydon, Leyton, Hastings, Brighton, Norwich, Walsall, Stockport, Huddersfield, and in 11 other smaller towns, no death from any of the principal diseases was registered last week; they caused the highest death-rates in Walthamstow, Northampton, West Bromwich, Coventry, Bootle, Sheffield, and Sunderland. The greatest proportional mortality from measles occurred in Northampton, West Bromwich, Smethwick, Coventry, Barrow-in-Furness, Sheffield, and Sunderland; from scarlet fever in Bootle; from diphtheria in East Ham, Middlesbrough, and South Shields; from whooping-cough in Walthamstow and Oldham; and from diarrhœa in Hanley, Wigan, and Blackburn. The mortality *from "fever"* showed no marked excess in any of the large towns. No death from small-pox was registered either in London or in any of the large provincial towns. The number of small-pox cases remaining under treatment in the Metropolitan Asylums Hospitals, which had been nine, nine, and seven at the end of the three preceding weeks, had further fallen to six at the end of last week; one new case was admitted during the week, against one, three, and three in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday, June 24th, was 2427, against 2268, 2285, and 2356 on the three preceding Saturdays; 325 new cases were admitted during the week, against 351, 269, and 292 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory organs, which had been 235, 191, and 189 in the three preceding weeks, further declined to 144 last week, but were three above the number in the corresponding period of last year. The causes of 55, or 1·4 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Bristol, Leicester, Salford, Bradford, Leeds, and in 41 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Blackburn, Preston, Barrow-in-Furness, Sheffield, Sunderland, Gateshead, and Newcastle-on-Tyne.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 16·9, 16·4, and 15·7 per 1000 in the three preceding weeks, further declined to 15·1 per 1000 during the week ending June 24th, but was 2·1 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 9·6 in Leith and 11·8 in Aberdeen to 16·8 in Perth and 18 6 in Greenock. The 508 deaths in these towns included 18 which were referred to measles, 18 to whooping-cough, 15 to diarrhœa, four to diphtheria, three to "fever," and two to scarlet fever, but not any to small-pox. In all 60 deaths resulted from these principal infectious diseases last week, against 80, 62, and 74 in the three preceding weeks. These 60 deaths were equal to an annual rate of 1·8 per 1000, which was 0·6 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 33, 17, and 26 in the three preceding weeks, declined again last week to 18, of which 12 occurred in Glasgow, four in Edinburgh, and two in Perth. The deaths from whooping-cough, which had been 24, 23, and 29 in the three preceding weeks, decreased to 18 last week, and included 11 in Glasgow, three in Edinburgh, and three in Dundee. The fatal cases of diarrhœa, which had been 16, 14, and 15 in the three preceding weeks, were again 15 last week, and included eight in Glasgow, three in Edinburgh, and three in Aberdeen. The deaths from diphtheria, which had been one, four, and one in the three preceding weeks, rose again last week to four, of which two occurred in Glasgow. The fatal cases of "fever," which had been three, three, and two in the three preceding weeks, rose again to three last week and included two, one being a case of typhus, in Greenock. The deaths referred to diseases of the respiratory organs in these towns, which had been 88, 89, and 63 in the three preceding weeks, rose again last week to 74, and were 10 in excess of the number in the corresponding period of last year. The causes of 22, or more than 4 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 19·4, 19·3, and 17·2 per 1000 in the three preceding weeks, rose again to 17·9 per 1000 during the week ending June 24th. During the past four weeks the death-rate has averaged 18 5 per 1000, the rates during the same period being 13·4 in London and 15·9 in Edinburgh. The 130 deaths of persons belonging to Dublin registered during the week under notice were five in excess of the number in the preceding week and included six which were referred to the principal infectious diseases, against eight, five, and three in the three preceding weeks; of these, two resulted from measles, two from diarrhœa, one from diphtheria, and one from "fever," but not any from small-pox, scarlet fever, or whooping-cough. These six deaths were equal to an annual rate of 0·8 per 1000, the death-rates last week from the principal infectious diseases being 1·2 in London and 1·7 in Edinburgh. The 130 deaths in Dublin last week included 21 of children under one year of age and 37 of persons aged 60 years and upwards; the deaths both of infants and of elderly persons were considerably in excess of the respective numbers recorded in the preceding week. Six inquest cases and four deaths from violence were registered; and 52, or two-fifths, of the deaths occurred in public institutions. The causes of six, or nearly 5 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: D. D. Turner to the *Pembroke* for disposal; A. C. Bean to the *Egmont* for the *Maine;* and P. T. Nicholls to the *Thetis.*

ARMY MEDICAL STAFF.

Surgeon-General W. F. Burnett is placed on retired pay (dated June 21st, 1905).

ROYAL ARMY MEDICAL CORPS.

The undermentioned Majors are placed on retired pay (dated May 30th, 1905): Arthur O. Fitzgerald, Frederick D. Elderton, and Robert I. Power.

INDIAN MEDICAL SERVICE.

The undermentioned Lieutenant-Colonels to be Colonels: Roderick Macrae (dated Feb. 12th, 1905) and Robert D. Murray (dated March 29th, 1905).

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[1] The Editor states in a leading article in the same issue of THE LANCET that he has purposely selected the reports of the speeches from the daily press and that Mr. Warburton's speech is taken from the *Chronicle* and Mr. Peel's from the *Times*. The speeches by Mr. (Sir Robert in May, 1830) Peel, ex-Home Secretary, and by Mr. W. Smith and Sir Joseph Yorke have not been transcribed. The report concludes as follows: "After a few words from Lord Binning, Mr. H. Gurney, Mr. Maberly, Mr. Secretary Bourne, and Mr. Warburton, the motion was put and agreed to."

ARMY MEDICAL RESERVE OF OFFICERS.

Lieutenant J. S. Warrack, Royal Army Medical Corps (Volunteers), to be Surgeon-Lieutenant (dated June 24th, 1905). Surgeon-Major E. T. Crouch to be Surgeon-Lieutenant-Colonel (dated June 20th, 1905). Surgeon-Captain H. Dickie to be Surgeon-Major (dated June 17th, 1905).

ROYAL ARMY MEDICAL CORPS (MILITIA).

Welsh and Midland Command: Lichfield Company: Lieutenant (Honorary Lieutenant in the Army) H. J. L. Bullen to be Captain (dated Feb. 26th, 1905). Irish Command: No. 3 Belfast Company: The promotion to the rank of Captain of Lieutenant (Honorary Lieutenant in the Army) S. T. Beggs bears date June 19th, 1904.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Suffolk and Harwich: Surgeon-Captain T. E. Stuart to be Surgeon-Major (dated Nov. 26th, 1904). 2nd East Riding of Yorkshire: Surgeon-Captain J. Soutter to be Surgeon-Major (dated June 24th, 1905).

Rifle: 1st Volunteer Battalion the East Yorkshire Regiment: Surgeon-Captain H. G. Falkner is borne as Supernumerary whilst attached to the Yorkshire Volunteer Infantry Brigade Bearer Company (dated June 24th, 1905). 1st Lanarkshire: Surgeon-Captain J. G. Andrew resigns his commission (dated June 24th, 1905). 1st Volunteer Battalion the King's (Shropshire Light Infantry): Surgeon-Major W. H. Packer is granted the honorary rank of Surgeon-Lieutenant-Colonel (dated June 24th, 1905). 17th (North) Middlesex: Surgeon-Lieutenant F. H. Gervis to be Surgeon-Captain (dated June 24th, 1905).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Northern Command: Manchester Companies: Lieutenant-Colonel W. Coates is granted the honorary rank of Colonel (dated June 7th, 1905). Eastern Command: Maidstone Companies: Lieutenant J. M. Rogers-Tillstone to be Captain (dated April 12th, 1905). Scottish Command: Aberdeen Companies: Surgeon-Lieutenant P. Mitchell, from the 5th (Deeside Highland) Volunteer Battalion the Gordon Highlanders, to be Lieutenant (dated June 10th, 1905). Scottish Command: Glasgow Companies: Lieutenant (Surgeon-Lieutenant, Army Medical Reserve of Officers) J. T. K. Thomson resigns his commission (dated June 10th, 1905). South Wales Border Bearer Company: Thomas Donovan to be Lieutenant (dated June 12th, 1905).

THE INDIAN ARMY COMMAND.

As our "service" readers are aware a serious official conflict of opinion has of late been taking place between the Viceroy of India and General Sir E. Elles, the military member of Council, on the one part and Lord Kitchener on the other with the result that a great and radical change is about to be carried out in our Indian military system. Substantially it is that proposed by Lord Kitchener and among other things it may possibly affect the position, although, as it appears to us, only nominally, of the Indian Medical Service. The Commander-in-Chief in India is henceforth to be recognised as the one military adviser of the Indian Government and is to be directly responsible for everything connected with war and the preparation for it. The Military Department, on the other hand, will be limited to the control of contracts and purchases, and the management of military works and of the increasing manufacturing departments, with charge of the Indian Medical Service and the Indian Marine. The business function of supplying the army with necessaries is henceforth to be kept altogether distinct from the military function of command.

THE ROYAL NAVAL HOSPITAL, STONEHOUSE.

A number of members of the St. John Ambulance Association at Bolton, who have engaged to serve with the sick berth staff of the Royal Navy in the event of war, are undergoing a week's training at the Royal Naval Hospital, Stonehouse (Plymouth).

DEATHS IN THE SERVICES.

Surgeon-General James Macnabb Cuningham, C.S.I., I.M.S., Bengal (retired), Honorary Surgeon to the King, on June 27th.

Inspector-General of Hospitals and Fleets Alexander Turnbull, R.N. (retired), on June 22nd, aged 67.

THE WAR IN THE FAR EAST.

There is no medical news connected with the war to be recorded this week. According to a Washington telegram the peace plenipotentiaries of the Japanese and Russian Governments will meet early in August but no action has yet been taken in regard to an armistice.

The *Maine* hospital ship arrived at Plymouth on June 23rd with invalids from the Mediterranean station. 20 medical and 13 surgical cases, together with one lunatic, were taken to the Royal Naval Hospital, Stonehouse.

The Army Council has decided that from July 1st all Staff and departmental officers serving at home and abroad (except India) shall, in common with regimental officers, have the option of drawing their pay either through the agents or through the local accountant or paymaster.

Correspondence.

"Audi alteram partem."

THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY: THE PRESIDENTS' PORTRAITS.

To the Editors of THE LANCET.

SIRS,—I am anxious, if possible, to complete our collection of portraits of past Presidents and should be very grateful to anyone who would put me in the way of making good our deficiencies. I subjoin a list of those Presidents of whom either we have no portraits or only very poor ones. While, of course, I should be glad to receive, and would gratefully acknowledge, gifts, I am quite willing to pay a fair price for any good portraits that may be offered to me.

I am, Sirs, yours faithfully,
J. Y. W. MACALISTER.

20, Hanover-square, W., June 23rd, 1905.

Portraits Wanted by the Royal Medical and Chirurgical Society.

President in—		President in—	
1813	Sir Gilbert Blane.	1869	Sir George Burrows, Bart., M.D.
1815	Henry Cline.	1871	Thomas Blizard Curling.
1841	Robert Williams.	1877	Charles West, M.D.
1843	Edward Stanley.	1879	John Eric Erichsen.
1855	Cæsar Henry Hawkins.	1881	Andrew Whyte Barclay, M.D.
1857	Sir Charles Locock, Bart.	1882	John Marshall.
1865	Sir James Alderson, M.D.	1886	George David Pollock.
1867	Samuel Solly.		

"TRANSCENDENTAL MEDICINE."

To the Editors of THE LANCET.

SIRS,—"Cheops, M.B.," in his letter under this cryptic title raises questions of great interest for the general practitioner There is truth in his contention that we are apt to miss much of present-day thought by devoting a too-concentrated attention to our own voluminous and intricate subject. To a certain extent this state of matters is largely inevitable but that it should make us intolerant and narrow in ou outlook should not follow. That this danger threatens ha been made clear by your correspondent. Are we not apt t be too sectarian and to look with Philistine eyes upo those within and those without our cloisters who have bee so unorthodox as to cross the borderland and wander in un covenanted byways? In the empire of the intellect ther is no place for the "Little Englander," and it were a pity i such a spirit found disciples within our ranks. Have we a all times extended to the stranger within our gates tha intellectual hospitality which it is ours as a learned pro fession to proffer? While "Cheops, M.B.," hints that w have not always done so, other thinkers not of our craft ar quite sure about this point. They complain, to take a instance, of our impatience with any non-physiologic explanation of psychical phenomena.

Your correspondent makes mention of *Professor James* Gifford lectures. In his eulogy of them I heartily concu Professor James in his own breezy way hits off the situa tion thus: "We are all familiar in a general wa with this method of discrediting states of mind for whic we have an antipathy. We all use it to some degr in criticising persons whose states of mind we regar as over-strained. But when *other* people criticise our ow more exalted soul-flights by calling them 'nothing but' expressions of our organic disposition we feel outraged and hurt for we know that whatever be our organism's peculiarities our mental states have their substantive value as revelations of the living truth, and we wish that all this medical materialism could be made to hold its tongue." "Medical materialism," continues Professor James, "finishes up Saint Paul by calling his vision on the road to Damascus a discharging lesion of the occipital cortex, he being an epileptic. It snuffs out Saint Teresa as an hysteric, Saint Francis of Assisi as an hereditary degenerate. George Fox's discontent with the shams of his age and his pining for spiritual veracity it treats as a symptom of a disordered colon. Carlyle's organ-tones of misery it accounts for by a gastro-duodenal catarrh. And medical materialism then thinks that the spiritual authority of all such personages is successfully undermined." Many of us must feel grateful to "Cheops, M.B.," for the warning he has sounded. We shall be aided in our endeavour "to sometimes take a glance at the country round about" by a more diligent perusal of THE LANCET where this very grace of intellectual hospitality abounds.

I am, Sirs, yours faithfully,
W. E. HENDERSON.
June 19th, 1905.

THE TREATMENT OF RINGWORM OF THE SCALP BY THE X RAYS.

To the Editors of THE LANCET.

SIRS,—I have read with much interest Dr. H. G. Adamson's article on this subject in THE LANCET of June 24th and I should be glad if he would give us the benefit of his experience with regard to the liability to burn in different individuals. I have lately had three very instructive cases, all treated at the same time, with the same current, and the same tube. Case 1.—A lady, aged 96 years, with malignant ulceration had one exposure of 13 minutes. She was unable to come again but eight days after showed definite signs of a burn. Case 2.—A lady with lupus of the nose had seven exposures of 12 minutes. On the fifteenth day from the first exposure she showed definite signs of burning which increased for several days. Case 3.—A lady with a small rodent ulcer has had 12 exposures of 12 minutes and shows absolutely no signs of any burns. Will Dr. Adamson kindly say where Sabouraud's pastilles can be obtained?

I am, Sirs, yours faithfully,
WINWOOD SMITH.
Cockington, Torquay, June 26th, 1905.

DUST-BORNE TYPHOID FEVER.

To the Editors of THE LANCET.

SIRS,—The epidemic of typhoid fever at Bridgend is of special interest from the fact that the medical officer of health attributes it to the blowing about of infected particles in dust. Can any of your readers refer me to other recorded instances of dust-borne typhoid outbreaks?

I am, Sirs, yours faithfully,
HERBERT JONES.
Hereford, June 13th, 1905.

THE NEW COUNTY HISTORY OF NORTHUMBERLAND.

To the Editors of THE LANCET.

SIRS,—On behalf of ourselves and a considerable number of other medical men assembled at a meeting called for the purpose of considering the following matter, we wish, if you will allow us, to bring it in your pages before our professional brethren in order to elicit as far as practicable their collective opinion about it—viz., whether it is correct ethics or otherwise for medical men to allow their names with personal histories or biographies and photographs, all furnished by themselves, to be published in a work now being brought out which purports to be a county history of Northumberland at the opening of this century, with contemporary biographies and which is advertised by its publishers as "A Romance of Commercial Enterprise and Business Ability"?

We may say, as throwing some light upon the methods adopted in bringing out this publication, that some of us have been given to understand by the agent of the publishers, when he called, that our names, &c., would only be admitted to its pages if we were willing to subscribe for a copy of it at £5 5s., although this, when mentioned to the publisher himself, who has come north to further the enterprise, has been stated by him not to be correct; however, the fact remains that when several of us as a test question asked his local agent whether our names, biographies, and photographs would be inserted if we did not subscribe for copies, we were told that it was purely a business transaction and that they would not be inserted on other conditions, with the result that the agent withdrew when this was not agreed to. We also have been told that the selection of those who are considered to be "men of standing" sufficient for this publication is made according to the advice of some "local man" who is therefore the arbiter to say who is eminent enough to have his personal biography and photograph admitted to the pages of this so-called "County History."

To the plain man this enterprise will, we think, appear to be only a form of self-advertisement for which many, if not all, would have to pay in the way above indicated in order to be included. We recognise, of course, that numerous eminent public men are included in these volumes (for other counties also have been dealt with) but as much of the history of such men is public property it is difficult to see how they could be kept out even if it were desirable, which we do not assert. We cannot for our part distinguish between the supplying of professional details by professional men in order that they may be published in a book of this kind and any other advertisement for which one would have to pay, if such a thing were not forbidden up to the present time by what we have always understood to be the canons that govern the conduct of all members of the learned professions of this country.

We are, Sirs, yours faithfully,
R. S. PEART, *Chairman.*
LACHLAN FRASER, Honorary Secretary.
North Shields, June 20th, 1905.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

To the Editors of THE LANCET.

SIRS,—Will you kindly extend to me the hospitality of your columns in order to notify all diplomates of the Edinburgh Colleges that a petition will shortly be sent round for signature praying for the addition of a Membership to the existing R.C.S. Ed. qualification. As the expense of the petition will necessarily be very heavy I should be glad to acknowledge any subscriptions sent by diplomates in favour of the movement.

I am, Sirs, yours faithfully,
DAVID WALSH,
Honorary Secretary of the Association of Medical Diplomates of Scotland.
18A, Hanover-street, London, W., June 27th, 1905.

WOOD *v.* BAILEY.

To the Editors of THE LANCET.

SIRS,—In your article on the above case published in THE LANCET of June 24th the following statement occurs:—

> It would, nevertheless, be satisfactory to the profession to hear from him [Dr. Cowper] that he had endeavoured to prevent a defence which he must have foreseen to be futile and that he had striven to enlighten Mr. Bailey with regard to the true nature of his position and his responsibilities.

In reply to this I may state that the first intimation I had that the above case was pending was when Mr. Bailey called on me a few days before the trial. I told him plainly that the defence was absurd and that he would certainly lose the case. I said to him: "If it were possible for you to win a case like this the practice of medicine would be impossible." I pointed out to him that we (medical men) were in the same position as other professional men and asked him if he had ever heard of a barrister being refused his fees because he had not conducted his case differently to what he had done. I told Mr. Bailey's solicitor the same thing and I further said that I declined voluntarily to go as a witness.

You state the plaintiff, Dr. Wood of Shanklin, &c. I may say Dr. Wood practises at Sandown, where the patient resides, whereas my partner and I practise in Shanklin. I may say that my partner (Dr. Hammond) gave Mr. Bailey's solicitor advice similar to that which I gave him.

I am, Sirs, yours faithfully,
JOHN COWPER.
Shanklin, June 28th, 1905.

CERTIFICATION UNDER THE LUNACY ACTS.

To the Editors of THE LANCET.

SIRS,—I should be much obliged if you would kindly inform me whether, in the event of a club patient having to be sent as a pauper to an asylum, it is usual for the relieving officer to obtain the lunacy certificate from (*a*) the Poor-law medical officer or from (*b*) the medical man in attendance. I am, Sirs, yours faithfully,

June 15th, 1905. A. B. C.

⁂ To determine the exact procedure required in order to get an insane person who, by reason of his mental infirmity, has become chargeable to his parish or union into an asylum is a perennial source of trouble to medical men. This is a natural consequence of that difficulty in interpreting the provisions of the Lunacy Acts which results from the ambiguity of the language of those statutes. We have frequently had occasion to deal with this topic, but the above letter shows that there are still rough places to be made smooth. Our correspondent asks whether, in the event of a club patient having to be sent as a pauper to an asylum, it is usual for the relieving officer to obtain the necessary medical certificate from the Poor-law medical officer or from the medical man in attendance. The question indicates some misapprehension of the relieving officer's position. It is not the business of this officer to obtain a certificate at all. His duty under the Act of 1890, as laid down in Section 14, subsection (2), consists in giving notice to a justice having jurisdiction that there is an alleged lunatic to be dealt with. Section 16 directs the *justice* to call in a medical practitioner and no restriction is placed upon the choice which the justice may make except that Section 32 prohibits the employment of an interested person. It is, however, quite a common thing for boards of guardians to arrogate to themselves the selection of a medical man. Acting through their relieving officer they require their own medical officer to certify and make the fees which they have to pay for the certificates a part, and sometimes a considerable part, of his salary. Justices often, it would appear, through ignorance of the extent of their own powers, acquiesce in the arrangement. There is no doubt that this course is productive of much annoyance to the general practitioner, especially in the case of club patients, who are not ordinarily sources of much profit to their medical attendants, but it must be remembered that the Poor-law medical officer has also some right to be considered and that any departure from the customary routine which a justice might see fit to make would involve an already badly paid official in pecuniary loss for which the Lunacy Acts provide no compensation. —ED. L.

MEDICAL CERTIFICATES IN RESPECT OF SCHOOL ATTENDANCE.

To the Editors of THE LANCET.

SIRS,—The education committee of the Surrey county council last year introduced tentatively a scheme for the certification of absentee school children by the medical officers of health of a few of the Surrey districts. A fee of 5*s*. was paid for a visit to the home of the child. Although in some of the districts this might involve a journey of eight miles some of the members of the committee considered the fee excessive and the scheme was abandoned. The school attendance committee of the petty sessional division of Guildford then approached some of the medical men practising in one part of its district with a view to their examining children at their surgeries and giving the necessary certificate for a fee of 1*s*., or visiting the children at their homes for a fee of 2*s*. The offer was accepted by two practitioners, although the district in question comprises some 21 square miles! The commendable action of the Sevenoaks division of the British Medical Association mentioned by Dr. O. D. Marriott in THE LANC of June 24th might with advantage be extended to th district. I am, Sirs, yours faithfully,

X.

THE HOUSE OF LORDS COMMITTEE O THE SANDGATE "SANATORIUMS" NUISANCE.

(BY OUR SPECIAL SANITARY COMMISSIONER.)

THE minutes of proceedings taken before the Select Co mittee of the House of Lords on the Sandgate Urb District Council (Sanitary Powers) Bill go far to confi what has been said in these columns concerning the p tended out-door treatment of patients suffering from tub culosis at the homes of the late Mr. J. J. Jones of Sandga The more sensational features of the case were, it is tr somewhat toned down. The fact that the author of t whole grievance is dead and that his successors seem to ha endeavoured to effect improvements suffices to explain t more considerate attitude adopted. There was a very natu desire to avoid as far as possible hurting the feelings the youthful and comparatively irresponsible successor the management. Much trouble has recently befallen t family. The late Mr. J. J. Jones had somehow succeed in gaining possession of 19 properties at Sandgate and so 30 houses. The son who helped him to manage this proper died suddenly and in dramatic circumstances. Shor afterwards Mr. J. J. Jones fell ill and died in March, 19 Another son, Mr. P. H. Jones, had been sent directly fr school to Paris and had been in business there for sev years. Suddenly he was called upon to give up Paris business and to take in hand the management of t homes and properties at Sandgate. This Mr. Jones, thou only 26 years old, seems to have acquired some busin capacity as an administrator, but he could not have a technical knowledge as to sanatoriums or any perso knowledge of the Sandgate business. He does seem, ho ever, to have realised that this business was not carried on a very correct manner. Notably, he felt that the medic control was not sufficient and also that it was folly pretend that the treatment was similar to that given Nordrach, Davos, and Leysin. He consequently destroy 10,000 circulars which made this assertion and which father had printed. In these circumstances there was general desire to deal gently with Mr. Jones, jun. Nev theless, the main principles at issue remain unaltered a attempted reforms made to-day are no guarantee for t future. Such reforms may be due to an honourable des to remove grievances or merely to fear engendered the actual and very general outcry. In either case a char of management or a change of disposition may produ other alterations and there is nothing to prevent matt from becoming as bad as, or worse than, they were in t past.

As an example of such instability the late Mr. J. J. Jor wrote to me on July 21st, 1903, giving a list of five hou containing 126 beds which, he stated, were "used strictly a exclusively for phthisical patients." He also mention three other houses with 80 beds for children and co valescents from infirmaries. That these figures might altered and probably increased is shown by the fact th Mr. Jones further remarks in this letter that "the numb stated are as accurate as we can give you at the prese time," and adds: "We calculate we can receive af the end of this week when the transfers have been made a the enlarged accommodation in use, about 23 more patient Thus it seems as if the late Mr. Jones contemplated receivi 149 tuberculous patients. At that time apparently it w the policy to exaggerate rather than to minimise the numb of cases of tuberculosis taken into the homes at Sandga The late Mr. Jones even succeeded in convincing the medi officer of health, Dr. C. E. Perry, that he had received his homes during the year 1903 no less than 880 tuberculo patients. Now Mr. Jones, jun., appears before the Hou of Lords Committee and states that there are only 1 beds available for tuberculous cases and that he has look through his father's books and can only find trace of 5 tuberculous patients as having been received in the hom during the year 1903. The number of deaths, however, is not challenged and the fact that 43 patients died out of 518 may be considered as creating a greater danger for the surrounding population than if there had been 43 deaths among 880 patients. It shows that the patients were in a more advanced stage of the disease and therefore less suited to the sanatorium methods of treatment; at all events measures were taken to check this state of affairs, letters being written to boards of guardians complaining as to the condition of the patients whom they sent to Sandgate.

Of the various criticisms made in the original indictment published in these columns,[1] that which seems to have been most taken to heart was the denunciation of the fact that there was no medical control. Prospectuses were so worded as to infer that there was responsible medical supervision; but Dr. W. L. Chubb, whose name was mentioned in this connexion, explained to me that though he was called in to give advice to patients he was no more responsible for the condition of the homes than he would be for the drainage or the diet of an ordinary hotel where one of the visitors might fall ill and send for him. Indeed, the position was such that ultimately, and to put an end to all misunderstanding, Dr. Chubb refused to have anything more to do with the late Mr. J. J. Jones and his patients. An agreement was then drawn up, dated September, 1903, with Mr. A. J. Gore, which was produced in evidence to show that now, at least, the homes were under proper medical control. The post given to Mr. Gore is described in that document as that "of consulting and acting physician and doctor to the said Sandgate Sanatoria and Convalescent Homes aforesaid." The document specifies that "the said medical superintendent shall have the full control of all matters relating to, or in connexion with," and "shall be solely responsible for the general comfort and welfare of the said patients and for all medical attendance, prescriptions, and dietary instructions." If the matrons and nurses do not carry out the instructions given they can be dismissed by the medical superintendent. So it would seem as if something like medical control had at last been established and for this Mr. Gore was to receive a retaining fee of £104 a year and certain other fees which brought up the total to £287 last year. But it appeared in evidence that this deed was drawn up on behalf of Mr. J. J. Jones, who is dead, by his son, Mr. F. T. B. Jones, who also is dead, and is now carried out by Mr. P. H. Jones who has no legal right whatsoever in the matter. There are five members of the family who claim the estate of the late Mr. J. J. Jones. They propose to draw up a deed of partnership and they propose to appoint Mr. P. H. Jones to manage the estate, but as yet they have done nothing of the sort. Finally, instead of an estate representing a valuable property they find that there are £10,000 of debts. Then, again, even if all prospered and the agreement mentioned was renewed in a proper and legal manner it contains a clause by which it can be revoked after a three months' notice. Thus it will be seen that there is no guarantee whatsoever that proper medical control will be permanently established. Nor can it be said that the appointment of a medical man in control is a sufficient guarantee. That medical man remains the servant of an employer to whom business and not the treatment of disease is the primary object. If the medical attendant is a poor man and receives from this one source about £300 a year it puts him in a position of great dependence. It is not fair to expect anyone to be ready to give up his means of existence because his instructions are not properly carried out. It is not reasonable to expect that the medical attendant would endeavour to carry out methods of treatment involving such expense as would be almost certain to entail his dismissal. On the other side, the manager of a commercial concern whose sole aim is financial success would endeavour to find a medical man ready to assume the responsibility of control, while at the same time making that control as little expensive and irksome as possible. Evidently such matters should not be subordinated to the financial interests of either the employer or the employed. Therefore the Bill will be useful if, as proposed, it lays down a set of rules and regulations which must be carried out in sanatoriums and this independently of the opinions or desires of the owners of such establishments or of the medical attendants appointed to treat the patients. Indeed, it must also be borne in mind that outdoor treatment and sanatoriums for tuberculous patients have brought into existence a comparatively new technique that has been developed within the last few years. It therefore does not follow that any and every qualified medical practitioner knows all about this new subject.

The evidence given by some of the medical witnesses before the House of Lords Committee showed that technical knowledge of sanatoriums is not general. For instance, Mr. Gore himself stated in evidence that he had had no experience of public institutions. Some years ago and by courtesy he had attended the practice of the out-patients' department of the City of London Hospital for Diseases of the Chest, Victoria Park, but this, of course, has nothing to do with sanatoriums. In regard to the technique of sanatoriums the general rule is that there should be a classification of cases and according to Dr. Walters's and Dr. Ransome's works there should be one medical attendant for every 40 patients. The temperature of these patients should be taken three times a day and they should be carefully watched at meals. At the Jones's homes there are actually 215 beds and there is no law to prevent tuberculous patients being placed in all these beds, and in that event there is no law to compel the employment of a proportionate number of medical attendants. It was stated in evidence that it was doubtful whether more than 100 beds were occupied at any one time by tuberculous patients. Still, even this is a good deal in excess of the 40 patients which it is supposed are enough for one medical attendant. Then, as these patients are, or were, lodged in five different houses the one medical attendant cannot watch over all the meals and see that each patient gets exactly what he needs. As a matter of fact, it is, of course, preposterous to suppose that constant and personal surveillance over the meals can be exercised in such circumstances. Mr. Gore said in his evidence that he had seen the patients at all their meals and doubtless he has done so once or twice, but the conditions of the patients change from day to day and one of the advantages of a sanatorium is that day by day and hour by hour the patients are being watched by highly qualified medical men. Mr. Gore, however, has a private practice outside Sandgate, he does not even live at Sandgate; and if he did he could not reside in five different houses at one and the same time; so it results that there is no resident physician whatsoever. Yet, on the other hand, there are 100 or so patients and these are not cases in the incipient stage. The patients had in many instances reached so advanced and dangerous a stage that Mr. Gore related, in his evidence, how he had written to the boards of guardians protesting against such desperate cases being sent to Sandgate. Nevertheless, in 1904 there were 24 deaths out of a total of 441 patients who spent some part of the year at Sandgate. To be single-handed with so many patients is not in keeping with the practice of well-regulated sanatoriums. On the other hand, it is difficult to see how a commercial enterprise of this description can be made to pay if a sufficient staff of medical officers is engaged.

The financial problem becomes all the more difficult in the face of the strange evidence of Mr. Jones, jun. He declared that he had given up all intention of taking in paying patients. The late Mr. Jones declared to me that he had spent some £1500 to refurnish, to decorate, and to convert Farleigh House into a sanatorium for the reception of what he qualified as first-class paying patients. These were to pay 35*s.* a week, or 45*s.* if they had a private room. Then there were also second-class patients who paid 25*s.* a week, or 33*s.* if they had a private bedroom. Finally, there were the patients from the workhouse infirmaries and for them the board of guardians paid at the rate of £1 1*s.* per week. The 34 beds in Farleigh House, the 15 beds in Lymington House, and the 14 beds in Ontario House were all to be occupied by paying patients and the late Mr. Jones boasted that more than 2000 paying patients had availed themselves of the advantages which he offered. Now we are told that the result of this business is £10,000 of debts. Then we are told that with two exceptions all the paying patients are gone, that no effort is being made to attract others, and that the business is now limited exclusively to pauper patients who occupy even Farleigh House in spite of the £1500 recently spent in luxurious furniture and decoration. It is perhaps not surprising that paying patients should have become scarce, but the extraordinary thing is that the late Mr. Jones with his hundreds of paying patients is said to have made debts to the amount of £10,000, while the present Mr. Jones though but new to the business and dependent solely on pauper patients is actually making such profits that he hopes in time to pay off his father's debts. Thus it is stated before a committee of the House of Lords that paupers for whom not more than 116 beds are now available receive proper medical attendance, sufficient milk and food of good quality, and healthy house accommodation, with no overcrowding, all for one guinea a week; and further, that out of this one guinea per head per week the margin of profit is so large that hopes are entertained of paying off an enormous debt of £10,000. *Does this seem rational?* And if such profits accrue what will be the fate of the patients? Is it not time that the patients should be protected by a law establishing rules for the management of sanatoriums?

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[1] THE LANCET, August 22nd, 1903, p. 565.

That is what the Bill *proposes*. Such establishments must have a licence. The licence will not be given unless rules and regulations approved by the Local Government Board are applied, and therefore the owners of unsuitable private dwellings in which tuberculous patients are huddled together as if they were tenants of a common lodging-house will no longer be allowed to receive such cases. So far so good, but the Lords Committee insisted on adding a clause giving a double compensation. If a licence is refused to the owner of a house for tuberculous patients and he is not allowed to take in any more patients then he is to be compensated for the cost of structural alteration incurred in putting his house to some other purpose. As a case in point the removal of the cubicles from Grosvenor House, where the paupers are partitioned off from each other, was mentioned. Secondly, and this is a much more serious matter, the owner is to be compensated for disturbance in his business for, as it were, the loss of the "goodwill" of the business.

Before the sanitary and medical aspects of this particular Sandgate business were taken up in these columns *Truth* had been following for some ten years the career of the late J. J. Jones, denouncing his religious begging-letter impostures and demanding some control over the donations which he obtained from charitably disposed persons. By methods thus publicly challenged a nuisance has been created which has seriously injured the prosperity of Sandgate and depreciated the value of property in that town. But it is not the Jones family who are called upon to pay compensation to the town of Sandgate for the unquestioned harm they have done; it is, on the contrary, the ratepayers of Sandgate who have to compensate the Jones family if they try to do away with this mischief. This is what *Truth* qualifies as "a monstrous state of things," and it adds:—

> The Jones family have created and carried on this business under conditions which the law ought never to have tolerated. Sandgate has thereby been heavily damaged as a seaside resort, yet the noble lords constituting this Select Committee now actually insist that the unfortunate ratepayers, if they seek to interfere with the cause of the mischief shall pay compensation to the parties responsible for it' The decision virtually recognises a vested interest in a public nuisance.

The ratepayers and district council of Sandgate, instead of being mulcted in this manner, merit the gratitude and some sort of substantial support and recognition on the part of the entire United Kingdom. Great Britain in respect to sanatoriums for the treatment of tuberculosis and to laws regulating the same is much behind several continental nations. The local authorities at Sandgate at their own risk and cost have taken the first step towards obtaining for the country some sort of legislation on the subject. Of course, their Bill only affects their district but it is obvious that it will serve as an object lesson and a precedent for the rest of the country. And at present what is the lesson? First, that it is advantageous to join some religious body and under the guise of charity to obtain possession of house property and land. Then the next step is to create a nuisance on that property and to persist in the nuisance till the neighbours are compelled at any cost to abolish the nuisance. In that event there will be compensation forthcoming and thus ample means will be provided to begin the whole process over again elsewhere. If the younger generation of the Jones family had the enterprise and energy of the late J. J. Jones they would already be purchasing property at Hythe or some other similar place so as to transfer their business from Sandgate and wait there till another Bill, with the complacent aid of the Lords, gave them another claim for further compensation.

In spite of the decision of the Lords Select Committee it is difficult to see where the claim for compensation comes in. No one proposes to confiscate any of the property belonging to the Jones family. In certain towns, notably in Ireland, the inhabitants keep pigs in their private dwellings. In England poultry is kept. Then these places grow in size and rules are enacted to the effect that pigs and poultry must not be kept in the crowded and central parts of such towns. Is compensation paid to the people who have created a nuisance with their pigs and poultry? Then again factories or mills are started. In the course of time it is found that many accidents occur and laws and regulations are enacted stipulating that machinery shall be railed off or protected by netting, &c., so as to prevent accidents. In some cases the machines were so awkwardly placed that this could not be done, so it was necessary to stop working the machines or to remove them elsewhere. In other cases expensive apparatus for better ventilation or the carrying off of dust had to be introduced. Was compensation claimed and given? The Jones family have created a new industry at Sandgate. This industry is proved to be a danger and a nuisance. The demand is that their dangerous machinery shall be fenced off; in other words, that the houses in which, for industrial or money-making purposes, they herd together tuberculous patients shall be separated from the rest of the community by a large open space. Further, the demand is that they shall not profess to give outdoor treatment when they have no outdoor space at their disposal, that they shall be made by law to act up to their professions and promises, and if they cannot do so then that they must give up the business. Where in all this lies the claim for compensation? It will be a very dangerous thing if a precedent is established giving right of compensation to all who succeed in creating some novel kind of nuisance which was not foreseen and specified by laws enacted previously to the invention or discovery of the new process giving rise to the novel means of endangering public security. What is required at Sandgate does not differ from that which already exists on the continent and it is a serious matter if we cannot bring ourselves up to the continental level without having to pay compensation to the authors of nuisances. It is a pity that more evidence was not given before the Lords Select Committee as to what is being done on the continent; the members of that committee might then have been more anxious to facilitate the acquisition in England of laws, regulations, and methods that would compare more worthily with those which exist abroad.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

University Intelligence.

THE fifth degree congregation will be held in the large lecture theatre of the Birmingham and Midland Institute on Saturday, July 8th, at noon. The vice-chancellor will confer degrees and in the afternoon the pro-vice-chancellor will give a garden party —The council has decided to invite Sir Archibald Geikie to deliver the Huxley lecture in 1906.—The dean of the Faculty of Medicine (Professor H. G. Barling) has presented to the University a portrait in oils of Dr. John Tomlinson Ingleby, in memory of whom the Ingleby lectures and scholarships were established by his son, the Rev. Charles Ingleby.

Presentation to Dr. E. Rickards.

The retirement of Dr Rickards from the office of honorary physician to the General Hospital has been considered by his friends and colleagues a suitable occasion to testify to the regard in which he is held and to the gratitude which they feel for his long and valued services to the charity. The presentation took the form of a grandfather's clock in carved oak and brass finishings and an illuminated address containing a record of the resolution passed by the board of management at the time of his resignation. The address was in the twelfth century style and into the various borders were introduced water-colour sketches of the old and new General Hospitals. The volume was bound in dark green morocco. An engraving of Dr. Rickards was also presented to the hospital accompanied with the request that it might be hung in the Medical Common Room as a permanent record of his faithful and valuble services. Mrs. Rickards was the recipient of a diamond necklace and a copy of the engraved portrait of her husband.

"Reformatory" Conference in Birmingham.

The triennial conference of the Reformatory and Refuge solely on pauper patients is actually making such profits that he hopes in time to pay off his father's debts. Thus it is stated before a committee of the House of Lords that paupers for whom not more than 116 beds are now available receive proper medical attendance, sufficient milk and food of good quality, and healthy house accommodation, with no overcrowding, all for one guinea a week; and further, that out of this one guinea per head per week the margin of profit is so large that hopes are entertained of paying off an enormous debt of £10,000. Does this seem rational? And if such profits accrue what will be the fate of the patients? Is it not time that the patients should be protected by a law establishing rules for the management of sanatoriums?

That is what the Bill proposes. Such establishments must have a licence. The licence will not be given unless rules and regulations approved by the Local Government Board are applied, and therefore the owners of unsuitable private dwellings in which tuberculous patients are huddled together as if they were tenants of a common lodging-house will no longer be allowed to receive such cases. So far so good, but the Lords Committee insisted on adding a clause giving a double compensation. If a licence is refused to the owner of a house for tuberculous patients and he is not allowed to take in any more patients then he is to be compensated for the cost of structural alteration incurred in putting his house to some other purpose. As a case in point the removal of the cubicles from Grosvenor House, where the paupers are partitioned off from each other, was mentioned. Secondly, and this is a much more serious matter, the owner is to be compensated for disturbance in his business for, as it were, the loss of the "goodwill" of the business.

Before the sanitary and medical aspects of this particular Sandgate business were taken up in these columns *Truth* had been following for some ten years the career of the late J. J. Jones, denouncing his religious begging-letter impostures and demanding some control over the donations which he obtained from charitably disposed persons. By methods thus publicly challenged a nuisance has been created which has seriously injured the prosperity of Sandgate and depreciated the value of property in that town. But it is not the Jones family who are called upon to pay compensation to the town of Sandgate for the unquestioned harm they have done; it is, on the contrary, the ratepayers of Sandgate who have to compensate the Jones family if they try to do away with this mischief. This is what *Truth* qualifies as "a monstrous state of things," and it adds:—

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"Reformatory" Conference in Birmingham.

The triennial conference of the Reformatory and Refuge afterwards the new premises in Rye Hill were declared open by Lord Armstrong. The house which has been acquired for the hospital has been for years the residence of successive vicars of Newcastle. The accommodation includes two wards, one for each sex, with five beds in each, as well as spacious consulting and waiting rooms and an operating theatre. Last year 2364 new patients were treated and of these 1717 contributed £373 to the funds, a fact which has been favourably commented upon more than once by the supporters of the institution. There is at present a deficiency of £2400 on the new premises fund account. only £600 having been subscribed so far. Professor Sir George Hare Philipson and Professor Frederick Page were elected honorary consulting physician and surgeon respectively and Dr. R. S. Hindmarch was appointed honorary anæsthetist.

June 26th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Medical Fees under the Midwives Act.

IT has long been felt that some provision should have been made in the Midwives Act for the payment of a medical man who is called in by a midwife in those cases where she herself is not permitted to act alone. The Cardiff Medical Society and the Cardiff division of the British Medical Association have both discussed the question and the opinion has been generally expressed that the supervising authority should pay a fee to the practitioner who is called in upon such occasions. In Cardiff the supervising authority is the health committee of the corporation and the medical officer of health (Dr. E. Walford) is intrusted with the administration of the Act. After conferring with the medical men in the town the authority has decided to recommend to the corporation that a fee of one guinea should be paid to a medical practitioner called in by a midwife if he is unable to obtain payment from the patient or from the board of guardians. The payment is only to be made, however, in cases of flooding, convulsions, and rupture of the uterus.

The Medical Officer of Health of Chipping Sodbury.

The circumstances attending the secession of Chipping Sodbury from the combination of districts for which Dr. F. T. Bond has been medical officer of health during the past 32 years have already been referred to in THE LANCET. The Chipping Sodbury rural district council having elected as medical officer of health a local practitioner it was necessary to obtain the sanction of the Local Government Board to his appointment in order to obtain from the county council funds a moiety of his salary. The Board withheld this sanction until a meeting had been held of representatives of the councils constituting the combination. This meeting was held on June 19th, when delegates from all the constituent councils attended with the exception of the Chipping Sodbury council, a formal resolution refusing to be represented having been passed by that council Two resolutions were passed at the delegates' meeting, one regretting that the Chipping Sodbury council contemplated withdrawing from the combination and urging in the most friendly spirit a reconsideration of the matter. The other resolution expressed the opinion that no evidence had been submitted to justify any alteration in the arrangements hitherto existing for the maintenance of the combination and that it would be to the advantage of the districts forming the combination that it should be continued on the same conditions as heretofore. The Local Government Board has now, therefore, a formal representation as required by Section 286 of the Public Health Act and can make an order for the compulsory combination of the districts concerned, but it is to be hoped that wiser counsels will prevail with the members of the Chipping Sodbury council and that they will follow the advice of their neighbours and reconsider the matter.

Typhoid Fever at Bridgend.

During the week ending June 17th there were 19 cases of typhoid fever notified in Bridgend and in the previous week there were 13, making a total of 65 cases since the beginning of the outbreak in the third week of May. Four of the cases have ended fatally. The district council has asked the Local Government Board to send a medical inspector to investigate the cause of the epidemic.

The Sale of a Medical Practice in Bideford.

At the Newcastle bankruptcy court on June 22nd his honour Judge Greenwell granted an application made by Dr. Alexander Lane of Newcastle for his discharge from bankruptcy. The applicant became a bankrupt as the result of an action brought against him at the Devon assizes last February by Mr. Ellis Pearson of Bideford, which case was reported in THE LANCET of Feb. 18th, p. 465. His honour remarked that he could not help thinking that the legal action over the sale of the practice should never have been brought and that the verdict was wrong, and as that action had brought about the debtor's bankruptcy and as the petitioning creditor (Mr. Pearson) was the person who was responsible for the proceedings, he thought he was justified in saying that the bankruptcy was brought about in the terms of the section by a misfortune which it was not in the power of the debtor to avoid and therefore he gave him his discharge at once.

June 26th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University Reform.

FOR some time a scheme has been on foot to institute in the Scottish universities a three-term session instead of the present winter and summer sessions. During the early part of last century the old arrangement of winter and summer sessions was no doubt an advantage to the student. All courses of lectures which were essential to graduation could be taken out during the winter, while the summer session was devoted more especially to tutorial classes and more advanced lectures intended for those who were aiming at an "honours" degree. The advantage of this arrangement was considerable when one recollects that the average Scotch student was by no means wealthy and that it was in many cases only with the greatest difficulty that he could raise the money necessary for his fees. Under the old arrangement he was free during the summer months and it was the common practice for students, by teaching or otherwise, to make enough money during these months to carry them through the ensuing winter months at the University. It was only by resorting to this plan that men like William Cullen and William Hunter were enabled to complete their education. But nowadays the condition of affairs is completely altered. So many subjects need to be taught that the summer as well as the winter months are required by the university teachers to enable them to cover all the work. On the other hand, the student of the present day can better afford to pay the fees and even if he cannot assistance can be obtained from the Carnegie Fund. The Scottish universities have determined that the time has come to make some alteration and a meeting of delegates from the four universities recently took place in Glasgow to consider the question of the proposed three-term session in place of the present winter and summer sessions. The meeting was held in private but it is understood that the opinion was decidedly in favour of the proposed change. Before the alterations can be carried out a good many difficulties will have to be overcome owing to the cumbrous machinery which needs to be set in motion before any such reform can be effected, but no doubt the matter will be pushed forward as rapidly as possible. Students of the arts curriculum will probably benefit most by the new arrangement. In medicine it will make but little practical difference, for, owing to the multiplication of subjects and the necessity for holding practical and laboratory courses, the summer months have already come to be considered by the student as important a part of the university year as the winter months.

Tramcar Life-guards.

The tramways committee in Glasgow has been experimenting with various kinds of life-guards with a view to find if any improvements can be made on the one which is attached to the cars at present. Extensive experiments were made with the guard which has been adopted in Dundee on the strong recommendation of the Board of Trade. The committee came to the conclusion that the one at present in use in Glasgow is the best and by corresponding with the various municipalities it has ascertained that this same guard has been fitted on to 90 per cent. of the cars at and to provide recesses in connexion with the library. Increased space will be provided for storing books and also for a pathological room and patients' waiting rooms. The resident librarian's house which adjoins will be absorbed in the building, thereby allowing for a large increase of space which is necessary for the comfort of members.

The Liverpool Royal Infirmary.

Mr. Charles Thurstan Holland has been appointed medical officer in charge of the electrical department of the Royal Infirmary. Mr. Thurstan Holland is the president of the Röntgen Society, London.

June 27th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Non-notification of Small-pox at Accrington.

A WEEK or two ago it was mentioned that proceedings were to be taken by the Accrington corporation against a medical man and an ex-town councillor for the non-notification of small-pox, from which disease children of the latter were suffering. At first one of the cases was mistaken for chicken-pox but "further developments of the disorder" led to communication with the medical officer of the corporation by telephone—which, it is stated, is not a legal notification—asking him to call at the house and to see the patients. As a result of this all the affected members of the family were taken to the hospital and the others were isolated. The health committee had the medical man before it and passed a resolution that the head of the family—not of the medical man's family—should be admonished for "regrettable neglect." Next, when the town council met an antivaccinationist member asserted that the patients taken to the small-pox hospital had not got small-pox. To uphold the authority of the council and its medical officer it was determined to prosecute the medical man and the others implicated and to sue the head of the family for the recovery of the cost of treatment at the hospital. However, "all's well that ends well." The medical man has written to the town clerk a letter for submission to the council admitting that he must have made a mistake, which has been accepted as a satisfactory vindication of the authority of the medical officer and of the action of the health committee, and all the contemplated prosecutions are to be dropped, "it being considered that sufficient publicity has been given to the requirements of the statute." Best of all, the borough is now said to be free from small-pox. Preston, however, which only got rid of the disease a few months since, is now again threatened with a serious outbreak, 16 cases being in hospital a fortnight ago. A further increase has taken place since then, making the number of recent cases about 34, and on June 23rd 21 cases—five men and 16 women—were still in hospital. The medical officer of health says there is no reason to attribute this fresh outbreak to certain "show" people, as had been rumoured. He adds, however, the somewhat uncomfortable remark that it is very likely due in a great measure "to the contact of the healthy with the infected in streets, railway carriages, and elsewhere during the holiday season." There is no doubt that the early diagnosis of small-pox from chicken-pox is sometimes far from easy but the "shottiness" of the former eruption rarely fails to afford help. Still mistakes occur and at Todmorden a tradesman threatens an action for compensation because his daughter has been taken to hospital as suffering from small-pox, while he contends that she only had a serious attack of chicken-pox.

Births and Deaths in Cheshire.

In his annual report to the Cheshire county council Mr. F. Vacher gives some interesting facts. Of the municipal boroughs Macclesfield had the lowest birth rate (22·6 per 1000) and the highest death-rate (20·4 per 1000), while Crewe, which is the largest municipal borough in the county, had the highest birth-rate (30·9 per 1000) and the lowest death-rate (14·6 per 1000). In the other urban districts Hoole, near Chester, had the highest birth-rate (38·6 per 1000), while its death-rate was 20 per 1000. The causes of these differences are not self-evident. Crewe is a busy town of railway workers, on a flat plain, pretty well provided with clay. Macclesfield is hilly and situated where the plain rises to the almost mountainous division between Cheshire and Derbyshire, while Hoole again is on the plain and has a good proportion of well-to-do people. But the statisticians say that the birth-rate among this class of people tends to fall. The population of the county is now estimated at 609,316, the county area being 644,180 acres, giving a little over an acre to each person.

June 27th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

New Appointments at the Royal Infirmary, Newcastle-upon-Tyne.

UP to the present time the assistants in the special departments of the Royal Infirmary, Newcastle-upon-Tyne, have either been senior students or qualified men who were willing to devote their time to the work without official recognition. It has now been decided by the infirmary committee that these appointments shall only be held by fully qualified men who are engaged in the practice of the specialty of the department with which they are associated. For some years the committee has unofficially recognised the *locus standi* of the gentlemen who have been assisting in the throat and skin departments by allowing their names to appear in the annual reports of the two departments as having given valuable assistance. This has placed certain members of the committee in rather an awkward position with regard to the throat department where there were several candidates for an appointment, because they naturally felt that they were bound to support the gentleman who for so long had been unofficially connected with the department. This really made little difference in the present instance, for Dr. S. S. Whillis, who secured the position, was in any case a very popular candidate, but it shows the difficulty in which a committee may be placed by unofficially recognising the services of gentlemen who are allowed to work in any department of a hospital without being properly appointed. Dr. D. W. Patterson was appointed assistant to the skin department, there being no opposition.

Medical Association for Haltwhistle.

This is a movement which is just in its infancy at Haltwhistle for it was only on June 17th that steps were taken to form a committee to discuss the rules and regulations and accordingly a president, treasurer, and secretary were appointed.

Memorial to the late Dr. James Murphy.

A movement has been already started in Sunderland to raise a sum of money to provide a memorial to the late Dr. James Murphy. It is suggested that an ambulance should be procured for the town and that any surplus should be used for some form of memorial more conspicuous. A vacancy which his death has caused in the surgical staff of the Sunderland Infirmary has been filled by the appointment of Dr. William Robinson. For several years Dr. Robinson has been physician to the infirmary and by his transference to the surgical side a vacancy has been created for which there are already several candidates in the field.

The Prevention of Consumption.

The annual meeting of the local branch of the Association for the Prevention of Consumption and other Forms of Tuberculosis was held on June 19th in the College of Medicine Newcastle-upon-Tyne. Lord Armstrong presided and there was a fairly representative gathering. The secretary (Dr O. W. Ogden) was able to state that the erection of the sanatorium at Barrasford-on-Tyne was progressing steadily and if only the necessary funds were forthcoming the building, with accommodation for 50 patients, would be ready by the end of the year. To make this possible it would be necessary to raise £7000 without delay. After the business part of the meeting Sir Isambard Owen delivered an address in the course of which he pointed out that the question of establishing a sanatorium for consumption was not a matter of charity but a matter of sound public economy. On the motion of the chairman the name of Sir Isambard Owen was added to the list of vice-presidents.

Newcastle Throat and Ear Hospital.

The twenty-seventh annual meeting of the supporters of this hospital was held on June 19th and immediately

PARIS:

(FROM OUR OWN CORRESPONDENT.)

Abolition of the Internat en Pharmacie.

THE general council of the Seine has decided to pension f at an early date the senior (*doyen*) *pharmacien en chef* of e lunatic asylums. The vacancy thus created will not be lled and the event betokens an impending reform in e pharmaceutical department of the hospitals, a reform hich will in various ways effect a considerable aggregate aving. In a new asylum which the prefectoral administration, has in hand just now there will be neither *harmacien en chef* nor *interne en pharmacie* but the work of dispensing medicine will be done by assistants under he immediate control of a pharmaceutical chemist in the eighbourhood of the institution. If this experiment proves atisfactory the system will probably be extended to all the departmental lunatic asylums. The director of the Assistance Publique seems to be about to take a similar course, as may be inferred from the recent abolition of the position of *interne en pharmacie* in the hospitals of Brévannes, of Berck, and of Issy-les-Moulinaux.

Treatment of Pityriasis Versicolor.

At a meeting of the Therapeutical Society held on June 14th M. Gallois mentioned that painting a very extensive eruption of pityriasis versicolor with tincture of iodine might cause symptoms of iodism. Oxygenated water, on the other hand, presented a variety of advantages for this purpose. In addition to being a mild microbicide and harmless in other respects it was capable of dissolving albumin so that it might be expected to cleanse the skin and promptly to destroy the microsporon. M. Gallois has treated several patients in this way and always with success.

The Eyesight of Cyclists and Motorists.

At a meeting of the Academy of Medicine held on June 13th M. Chauvel read a report on a work by M. Mirovitch, entitled "Some Considerations on the Impairments of Vision due to Cycling and Motoring and on Methods of Remedying them." According to M. Mirovitch, the injurious influences in question were, especially in cyclists who maintain a high speed, the abnormal position of the head and the straining of the eyeballs in the effort to obtain distant vision. The action of the compression exercised by the air on the visual organs was less evident. The whole body was injuriously affected in cases of excessive speed, for the heart, the lungs, and the brain suffered as well as the eyes. M. Mirovitch recommended that the eyes should be protected by means of spectacles which permittted the circulation of air. These appliances seemed, however, to be too heavy for the use of cyclists and to be hardly available except for the drivers of motor-cars.

Sea Water in the Treatment of Tuberculosis.

M. René Quinton showed last year, as the result of a long investigation, that sea water ought to be considered as the true normal physiological medium for living creatures. It was in sea water that the most elementary of them were developed in the origin of species; it was also in a special manner the cradle of life on our earth, and throughout the complicated succession of living forms in evolution it has remained the nutrient fluid perpetually available. At a meeting of the Academy of Medicine held on June 6th M. Quinton, proceeding to consider some practical applications of his views, said that he had made a trial of sea water in the treatment of some pathological conditions characterised by alterations in the chemistry of the tissues, and that, assisted by M. Simon, he had commenced with tuberculosis. They first rendered sea water isotonic by diluting it with pure water until its saline component fell to 7 per 1000, the only proportion in which the fluid when brought into contact with the tissues of the human body did not cause changes in them. They then sterilised the fluid in the cold and injected from 50 to 300 cubic centimetres under the skin every three or four days. This treatment was employed for 18 tuberculous patients and showed unquestionable tonic properties from the very first. The patients gained weight steadily at an average rate of 27 grammes per day. Of the 18 cases, three who were treated at too advanced a stage were not materially benefited, but the remaining 15 were greatly improved, both in their general condition and also as regards the special lesions, whether in the lungs or the glands. The expectoration diminished and the bacilli in it were reduced in number.

Venereal Diseases.

The Director of the Assistance Publique has just taken a step which is worthy of notice. By means of posters distributed throughout Paris he has made it known to the populace that gratuitous advice with regard to the treatment of venereal diseases will be given at certain definite hours during the morning or the afternoon at 21 dispensaries. It is to be hoped that the municipal council will shortly arrange for evening consultations for the sake of those who cannot get away from their work during the day.

June 28th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Weather.

"SUMMER set in with its wonted severity," wrote Horace Walpole of Scotland, where, according to compatriot admission, "there is no climate but only weather." Is Italy tending to be a candidate for such sinister meteorological distinction? One might be pardoned for entertaining the misgiving if the experience of the last six months is to be repeated year by year. "Within the memory of the oldest inhabitant" (who, in spite of Mark Tapley, sometimes remembers something) such a winter as the last was never known, either for intensity or duration. During January and February the central provinces might have been a landslip from Siberia, and Florence, with the Arno frozen between the Ponte Vecchio and the Ponte Trinità, might as well have called herself Tobolsk. In the sunny, subtropical south we were little better off, looking out at Taormina, for instance, on steady snowfall, while (aggravating thought!) we read in the English papers that Brighton and Hastings were basking in delicious warmth. Spring brought little change for the better and we passed from the "chilled shot" of Boreas to the drenching hose of Jupiter Pluvius, till the customary stampede from Rome or Florence to the Lago di Como or Maggiore was arrested by the fact that the "Lakes" had met the stampeders more than half-way. Italy, indeed, must (meteorologically speaking) be on her better behaviour if she is to retain her character for azure skies and genial warmth and to attract to her cities and her seaboard that enriching flood of "forestieri" which is, to her shrivelled "circulation" what the rising of the Nile is to parched Lower Egypt. Even as I write, at the latter third of June, there is a steady rainfall, and not only is "Our Lady of Flowers" in an exceptionally lacrymose mood, but from every province, particularly in the Alta Italia and the Romagna, comes news of destructive hailstorms and persistent downpour with overflowing streams and battered vineyards, involving agricultural and winegrowing interests alike in something little short of ruin.

National Hygienic Competition.

In one of the masterly digests which the late Sir James Coxe used to prefix to the annual reports of the Scottish Commissioners in Lunacy he commented on the urgent need of elementary instruction in hygiene in our public schools, so as (in his own happy phrase) "to make every young man and young woman the intelligent custodians of their own health." The wholesome suggestion is bearing fruit in Italy. Your readers may remember the tragic death of the leading surgeon of the Tuscan school, Professor Colzi, as narrated in THE LANCET of April 25th, 1903, p. 1205. Well, the sum raised to form a perennial memorial of him has been devoted to the purpose well known to have been near his heart—that of training the youth at the public schools in the laws of health—and, with that object, to the bestowal of a prize, open to general competition, for the best manual of elementary hygiene. The judges were chosen from the "Società Toscana d'Igiene," who, after a careful perusal and comparison of the many treatises sent in, awarded the prize to Captain Giuseppe Cigliutti, M.D., of the regiment of mountain artillery quartered at Turin. The treatise, or manual, admirably well adapted for its purpose, will, it is understood, be introduced into the national schools and prizes will be periodically given for proficiency in its contents. A beginning has thus been made in a direction long lying unutilised in Italy, while Florence has "scored present running in Great Britain. In the course of discussion in the town council on the subject it was stated that during a period of three and a half years in Dundee 21 persons had fallen under the platform of the cars without any fatality occurring, while in Glasgow during the same period several fatalities had occurred. Unfortunately, since that statement was made Dundee's good record has been broken, as within the last few days a little girl in that city was knocked down and killed by having her neck caught between the cow-catcher and the ground. The larger number of fatalities in Glasgow can be understood when one considers the enormous development of the tramcar system in Glasgow. During the last 12 months 195,767,519 passengers were carried and the total mileage was 17,943,595. There is no doubt that the number of accidents has diminished since the first year or two after the introduction of electric cars and this can be attributed to the cultivation of the "car traffic sense" in the public and also to the increased expertness of the drivers. Although accidents will always occur it is possible that with an improved life-guard none of them need be fatal.

Greenock Vaccination Statistics.

The vaccination statistics for Greenock during 1904 should prove a somewhat indigestible morsel for the antivaccinationist to swallow. During the recent epidemic from figures at disposal it is shown that of 1000 persons in Greenock last year with good marks of early vaccination 3·4 took small-pox, while of 1000 with no marks or imperfect marks 19·8 took small-pox, or nearly six times as many. Again, 13·9 per cent. of successfully vaccinated persons took the disease in a severe form, while 62 per cent. of those with no marks suffered severely. Of 215 cases with good marks of early vaccination only four died, two of these from complications and of 50 persons with no marks 12 died, all from small-pox.

Peterhead New Fever Hospital.

On June 17th the foundation stone of the new infectious diseases hospital for the burgh of Peterhead was laid, with full Masonic honours, by Provost Leask. The hospital, which is situated on the north side of the town, beyond the fishing village of Buchanhaven, is being built after plans by the burgh surveyor. It is of the villa type, built in four blocks, including administrative and observation blocks, and will contain 16 beds. A small cottage hospital with two or three beds has served the necessities of the burgh for the last 20 years or more. The local authority, owing to the pressure put upon it by the Local Government Board, has, however, been compelled to make better provision in case of possible contingencies; and with a bequest of £1500 from the late Miss Hector, Prince-street, it has been able to put up a place that will not only meet the requirements of the town but will afford provision for the Deer District Committee dealing with patients in the more easterly part of its jurisdiction. The cost of the hospital, one block of which has already been built, is estimated at about £4000. Addressing the company after the ceremony had been performed, Provost Leask is reported to have said in the course of his speech:—"The old place was not much to look at. As a piece of elegant architecture it left something to be desired; but the outside was not always the best part of buildings, any more than of men and those who had put themselves, as he had done, to the trouble of learning from personal observation something about the internal arrangements of the old place, and who knew how many poor creatures had been tenderly cared for and nursed back to health in it, might be justified in hesitating to accept the change as an unmixed blessing, until experience had proved it to be so. Why, then, had it been found necessary to make this change? He would tell them. There was a body of gentlemen in Edinburgh who had been formed by a grandmotherly Government into a kind of moral policemen, with special reference to the preservation of public health throughout the country. For the performance of their duties any knowledge of local needs or local special circumstances was quite unnecessary. Indeed, the less they knew of these things the better they were able to carry out the cast-metal rules and regulations, and these they were privileged to apply and enforce with something resembling the despotism of a Russian Tsar. They seemed to have a belief that local men knew nothing about the requirements of their localities, or else could not be trusted to do their proper duties...... If he were asked to say something specially complimentary of their good town, he thought it would be that the fact that they had been able during the long period of upwards of 300 years to do without a hospital and for the last 20 years to supply their needs with what perhaps was the smallest epidemic hospital in the world, was proof of how remarkably healthy and desirable a place of residence Peterhead was. In vain they of the town council pointed out that Peterhead never had any fevers, and that they had already accommodation ample for their needs, and that should occasion ever arise they could satisfy any temporary requirements in a much better way; and in vain did they lay before them the difficulty that was being experienced in the matter of a suitable site, and so on."

June 27th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Typhoid Fever Epidemic in Newtownards.

IT is satisfactory to learn that the recent typhoid fever epidemic in Newtownards has been completely stamped out. The public health committee [illegible] the urban council to put before t[illegible]ard schemes for introducing a good water-supply from outside the town precincts.

The Small-pox Wards in Lurgan Workhouse.

Mr. R. Agnew, Local Government Board inspector, has been holding an inquiry on oath at Lurgan workhouse into a series of charges made by Mr. W. M'Mullan of Portadown in connexion with his treatment and that of his family when patients in the small-pox hospital of Lurgan workhouse. It would appear that a child of Mr. M'Mullan, who is an insurance agent, was on Sept. 28th, 1904, pronounced by Dr. J. A. Corbitt of Portadown to be suffering from small-pox and subsequently the medical officer of health of the district, Mr. J. L. Rowlett, intimated that the whole family would have to go to the workhouse hospital. The ambulance in which they were conveyed was a two-wheeled van, loose in the springs, and caused anyone sitting in it to be jolted. In his evidence Mr. M'Mullan said that there were not sufficient beds in the place so he, with the nurse, sought some in another part of the building. Here they found articles of bedding scattered about the floor and covered with feline filth, lime crumblings from the ceiling, and dust intermixed with mildew. The bed which the witness finally got was a wooden one with a mattress only about one and a half inches thick. There was no pillow for the child's bed and the mother had to use a bundle of rugs as a substitute. The child died next day at 4 A.M., Dr. J. S. Darling having only seen the patient once in the witness's presence. The clothes given to himself and family were damp and so also were the walls of the building. Whilst they were there the nurse was very ill with neuralgia and the witness attributed this to the dampness of the building. The three boys were forced to sleep in one bed, no other being provided, and one had to use a bundle of clothing for a pillow. Since leaving the hospital his wife had been very ill. There was a difference of medical opinion as to the prognosis in the case. Dr. Corbitt in his evidence said that the child had had the disease for nine days, had practically passed all the most dangerous stages, and was on the way to recovery when he saw the patient on the day of the removal. Dr. Darling, medical officer of the Lurgan workhouse, said that in his opinion the removal in the ambulance (which he considered an improper vehicle) did not make any difference to the child, who was suffering from confluent hæmorrhagic small-pox and would have died as soon at home. The child was already doomed to die before removal. He had great difficulty in fixing the responsibility on anyone for the unpreparedness of the hospital for the patients' reception and as a fact he did not know of it until ten days afterwards. Dr. Martha Adams, resident medical officer, said that the person responsible for the unpreparedness of the hospital was one of the nurses who disobeyed her in not going to the [illegible] Both she and a nurse declared that th[illegible] admitted and that there was no [illegible] taking place. Dr. Samuel Agnew of Lurgan said that he considered that a case of confluent small-pox, which was assuming a hæmorrhagic character, between the seventh and eighth days could not have passed the critical or dangerous stage. Several other witnesses having been examined, the inquiry ended on June 23rd. Mr. Agnew will put the evidence before the Local Government Board with which the decision rests.

June 27th.

account says that after the men had gone away the widow, who was some 50 yards distant, suddenly threw off her "sarce," made a rush for the funeral pyre, flung herself face downwards on it, and was burnt to death. No attempt was made to rescue her. There is little doubt that the whole affair was pre-arranged. The men do not in the ordinary course go right away before the cremation is completed and that a woman can run 50 yards and be burnt to death in the view of numbers of men without any attempt to stop her or to save her shows that the law was intentionally broken. These barbarous relics of an ancient custom will continue to recur unless the Government punishes more summarily and more severely the guilty relatives.

Cigarette Smoking among the Natives of India.

The tirade against cigarette smoking, which has been reported in one of the States of the American Union, is in curious contrast with the extraordinary development of this habit among the natives of India. The trade in cigarettes is increasing enormously. Last year no less than 584,000,000 were imported—an increase of 24·3 per cent.—and valued at 21 lakhs of rupees. The habit has caught on and the Indian demands the cheapest article. The cheapest cigarettes are imported from Shanghai and Ceylon—the former selling at R.1 A.9 pies 4 per 1000, whereas the Ceylon cigarettes fetch about 2½ annas per 1000 more. There is an enormous importation from the United Kingdom—some 385,000,000—which sell at about 5*s.* per 1000 and in addition some 111,000,000 are imported from the United States which sell at a little less. This is in excess of the local manufacture, which is considerable and increasing. If tobacco smoking in the form of cigarettes could replace the disastrous tastes for Indian hemp and cocaine it would be a blessing. Unfortunately, however, the fancy for cigarettes is rather the result of the higher wages now obtainable in all the chief towns and must be looked upon as a small luxury indulged in by the native as a consequence of his improved position.

June 9th.

Obituary.

ARTHUR DAVID GRIFFITHS, M.D. BRUX., L.R.C.P. LOND., M.R.C.S. ENG.

MEDICAL men are unfortunately not always sufficiently careful of their own health, although it is matter of common knowledge that the fatigues and anxieties of a busy practice are decidedly trying to the constitution. A sad example of sudden and untimely death is afforded by the case of Dr. Arthur David Griffiths of Bridgend, Glamorganshire, who was found to be seriously ill in his own house on the early morning of June 15th and expired in less than an hour after the discovery was made. Typhoid fever has been prevalent in Bridgend for several weeks, Mrs. Griffiths, who is still suffering from the disease, being among the first cases that occurred. Dr. Griffiths was attending 35 of these patients immediately before his death and the heavy work thereby entailed, together with anxiety respecting his wife, materially contributed to the fatal result. He had for some days been complaining that his heart was causing him trouble and on the evening before his death he telephoned to a relative in Bristol on the subject. At the inquest, which was held by Mr. Howell Cuthbertson, the district coroner, on June 16th, evidence was given by Miss Olive Griffiths, sister of the deceased, and by the nurse in attendance on Mrs. Griffiths. Mr. William E. Thomas of Bridgend, who is the family medical attendant, attributed the death to heart failure from overwork and a verdict to this effect was accordingly returned.

Dr. Griffiths who was 34 years of age at the time of his death, received his medical education partly in the Bristol school and partly in King's College, London, taking the diplomas of L.R.C.P. Lond. and M.R.C.S. Eng. in 1894. In 1897 he obtained the degree of M.D. at the University of Brussels. He commenced practice in the Forest of Dean in Gloucestershire, afterwards proceeded to Ramsgate, where he was an honorary surgeon to the Ramsgate Dispensary, and about four years later removed to Bridgend, where he held several appointments and had an extensive practice. In September, 1904, he had the misfortune to be made the object of a vile conspiracy planned by an electrician and his wife—a couple named Faithfull. The facts of the case are outlined in THE LANCET of Dec. 17th, 1904, p. 1733. The woman asked advice of Dr. Griffiths for some gynæcological ailment in 1903 and again in September, 1904, the husband being each time aware of the consultations. On the second occasion he rushed into the room during the examination of the patient, making serious allegations against Dr. Griffiths, who brought an action against him at the Swansea assizes for assault and slander. Neither the defendant nor his wife put in an appearance and a few days before the date of the trial their solicitor stated that he did not know their whereabouts. The jury awarded Dr. Griffiths £500 damages and the public opinion of the district was in sympathy with this vindication of his innocence. Dr. Griffiths, however, did not receive any payment in respect of the damages awarded him, while his legal expenses for the action amounted to about £205, and a fund to defray the latter was collected by a committee, consisting of the chairman and honorary secretaries of the Cardiff division of the British Medical Association and of the Cardiff Medical Society respectively, together with Dr. A. P. Fiddian of Cardiff and Dr. R. S. Stewart and Mr. W. Randall of Bridgend. Subscriptions to this fund were acknowledged by Dr. Fiddian in our columns on various occasions from Jan. 21st, 1905, to the beginning of April, and a considerable sum was in the result handed to Dr. Griffiths.

Of sunny, kindly personality, straight and genuine in every sense, he was one who instinctively was all that was honourable. He will be sadly missed not only by his more immediate friends but especially by the St. John Ambulance Brigade, in whose work he had long been enthusiastically and actively interested, and particularly so will this be the case in the No. 7 district in which he held staff rank. All his brother officers will assuredly feel a keen sense of personal loss in the untimely ending of a life which, to quote the motto of the order, was sacrificed "for service in the cause of humanity."

WILLIAM ALDER, L.S.A.

WE regret to announce the death of Mr. William Alder which took place at Monkwearmouth on June 19th. He had been in failing health for some time and had quite recently returned from a sojourn at Bournemouth which unfortunately had been without benefit. The deceased was an old Guy's Hospital man and a Licentiate of the Society of Apothecaries (1893). For two years after qualifying he served as surgeon on board the s.s. *Esquimaux* and s.s. *Eclipse*, vessels engaged in the whaling trade. After this he settled in Monkwearmouth and soon acquired a large practice and became very well known in the district. For a period of three years from 1896 he served on the town council but did not afterwards seek re-election. He was about 40 years of age. Death was due to chronic nephritis.

A HOSPITAL TENT.—A very interesting feature of the annual camp of the National Fire Brigades Union, held at the Crystal Palace, is the hospital tent, which has been fully equipped by Messrs. Carter of New Cavendish-street, W., on the most improved principles. The aseptic furniture and hospital appliances are of the latest description and members of the medical profession and visitors in any way interested in ambulance work should take the opportunity of inspecting the tent.

HEALTH CONDITIONS IN THE FAROE ISLANDS.—In his report for the year 1904 Mr. Villiers, British consul at Thorshavn, writes: "The condition of health in the islands cannot be regarded as altogether satisfactory. In spite of the natural salubrity of the mid-Atlantic isles, with their pure polar breezes, diphtheria and typhoid fever constantly appear in epidemic form in various villages, cases having occurred in all the larger islands in recent years. The health authorities find it difficult to enforce hygienic regulations among a population that seem to fail to realise the risk of infection. Sanitary arrangements are most primitive and what was possible without being pestilential when inhabitants were scarce and houses less clustered becomes impossible in the rapidly growing villages. Should fishing vessels enter and wish to have communication with the shore in places where infectious diseases are prevalent the master, when reporting his vessel to the quarantine officer, will in future be warned by him of the existing danger. Animals have also been attacked by disease, a blindness having befallen sheep on Ostero and on Sudero. The sheep had been free from this disease for many years. As the sheep here are neither folded nor herded blindness is fatally dangerous on the precipitous coasts of these islands."

again" in having been the prime mover in what may be hailed as an educational "Instauratio Magna."

The Medical Profession in Parliament.

In Latin countries the physician and the surgeon are oftener represented in the legislature than in those of Teutonic or Slav nationality and Italy in particular owes much of her best statesmanship to the intervention of such experts in her Chambers, Upper and Lower. Not only in general politics has she to thank her medical Premier Giovanni Lanza for much wise legislation and for the crowning service of "planting the colours of the House of Savoy on the Capitol," but, in special fields, like public health, she is indebted to Agostino Bertani, surgeon-general under Garibaldi, for a masterly "codice" which now forms part of the statute book. Baccelli, too, has done signal work in raising the standard of education, medical and lay, and has exercised a wise conservatism in arresting the retrograde faddism which has its place in Italy as elsewhere—"anti-vaccination"—to cite one instance out of many. The latest addition to the professional ranks in the Chamber of Deputies is that of Dr. Queirolo, professor of clinical medicine in the University of Pisa, just returned at a bye-election for that seat of learning by a sweeping majority. Dr. Queirolo, an active and able participant in the annual congresses of internal medicine, is welcomed by all parties as a distinct acquisition to the legislative body, in token of which he was entertained on June 22nd at a banquet by his constituents, including many of the Senatus Academicus and the leading citizens of Pisa and its province.

June 26th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Prevention of Tuberculosis among Negroes.

A SUBCOMMITTEE of 21 coloured physicians and clergymen has been organised by the New York Charity Organisation Society's Committee on the Prevention of Tuberculosis to fight tuberculosis among the coloured people of New York. The New York health board is coöperating with the movement and has placed its dispensary under the supervision of the medical members of the subcommittee for three evenings a week. A course of illustrated lectures treating of tuberculosis will be given shortly in the churches for coloured congregations. It is stated that there are between 60,000 and 65,000 coloured persons in New York city and that their death-rate from tuberculosis is 5·33 per 1000, as against 2·37 per 1000 among the whites.

Yellow Fever in the Isthmus of Panama.

Yellow fever is still present in the Isthmus of Panama. Several fresh cases have been reported by Governor Magoon, while a passenger from Colon to New York was found to be suffering from the disease upon his arrival in New York and has since died.

Patent Medicines.

Mr. Bok, the editor of the *Ladies' Home Journal*, has been carrying on for some time past a crusade against what he terms the patent medicine curse in America and has contributed an able letter on the subject to the *Journal of the American Medical Association* of May 20th. He points out that although various Bills have been introduced into the legislatures of several States having for their object the regulation of the sales of injurious patent medicines or the compulsory printing of the ingredients of these medicines on the label of each bottle, under penalty of fine or conviction, the passage of such Bills has been defeated by the active opposition of the proprietors of some patent medicines. The proprietors of patent medicines are, as a rule, rich, and by means of the expenditure of large sums they have been able to employ skilful lawyers to defeat measures aimed at their products. On the other hand, according to Mr. Bok, the chief advocates of the repressive Bills have been members of the Woman's Christian Temperance Union, whose zeal usually exceeded their discretion and whose advocacy, although well-intentioned, has consequently been ineffective. Members of the medical profession took no active part whatever in upholding Bills to control the sale of certain patent medicines. Mr. Bok believes that so long as the medical fraternity exhibits so little interest in the matter the public in general is not likely to urge effective legislation against injurious patent medicines. He therefore contends that medical men throughout the country should coöperate in this legislative work.

Rush Medical College, Chicago.

The announcement has been made that Rush Medical College, beginning with the session of 1905-06, will add a fifth year to the curriculum, which, however, for the present will be optional. The work of this additional year will be that of (*a*) a fellowship in one of the departments of the College, or (*b*) an interneship in the hospital under the following conditions—namely (1) that each student taking such work will be under the supervision of the Faculty, by whom the hospital in which the interneship is taken must be approved; (2) that the student must present evidence of thorough clinical work and, if possible, an exhaustive study of a selected group of clinical cases involving original work; and (3) that he will be required to pass a special examination at the end of the year. When he shall have successfully completed the fifth year he will be given the degree of Medicinæ Doctor *cum laude*.

June 21st.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Adoption of a Standard Time for India.

THE Government of India has issued instructions for the introduction of a standard time on all railways and in telegraph offices to come into force at midnight between June 30th and July 1st, 1905. This standard time will be exactly five and a half hours in advance of Greenwich and nine minutes in advance of the Madras time which has hitherto been in use for the railways. The Rangoon time will be six and one-eighth hours ahead of Greenwich and five minutes 23 seconds earlier than the present Rangoon time. It is not proposed to prescribe the extension of the new system beyond the sphere of the railways and telegraphs but there is little doubt that it will come ultimately to be adopted everywhere. Calcutta, Bombay, and Karachi now follow the local time of their respective longitudes and if there be a desire expressed the Government will be prepared to order the new standard at all Government institutions.

The Decline of the Plague Epidemic.

The plague mortality throughout India is happily on the decline. During the week ending May 27th the total fell from 35,992 to 23,088. The principal figures are: Punjab, 16,612 against 25,340; United Provinces, 2941 against 5132; Bengal 894 against 1069; Rajputana, 1171 against 2142; Bombay districts 441 against 585; Burmah 110 against 58; Kashmir 138 against 200; Bombay city, 497 against 594; Calcutta, 146 against 172; and Madras Presidency, 11 against 19. It will be noticed that the numbers of deaths and not cases are generally taken in India for the statistical records of plague. As a matter of fact the cases returned exceed the deaths by a very small proportion, by which it is not to be inferred that the mortality is so excessively high but simply that a very large number of cases fail to be discovered. Take, for example, the latest returns for Rangoon, which has had its first outbreak this season. From Feb. 5th to May 31st 1341 cases with 1197 deaths are recorded, a case mortality of 89 per cent. The real mortality from plague is about 75 per cent., so that it is almost certain some 250 cases of plague in Rangoon were undiscovered. The same experience is met with in Calcutta, Bombay, and other infected cities.

Extended Period of Study for the Medical Degree of the University of Calcutta.

It is reported that the period of study for the medical degree in the University of Calcutta is shortly to be raised from five to six years. It has been five years for a long time, even when the period of study in England was four years. Now a corresponding increase of one year is to be made in the local university. Few will question that it is a change in the right direction.

A Case of Suttee.

Now and again an instance of suttee is reported in some outlying district showing how the barbarous instinct still lingers amongst the superstitious and ignorant people who live outside the influence of Western control. On May 10th in a village named Shahjahanpur in the Sitapur district a man died and his body was burnt in the usual way. The account says that after the men had gone away the widow, was some 50 yards distant, suddenly threw off her rce," made a rush for the funeral pyre, flung herself face nwards on it, and was burnt to death. No attempt was de to rescue her. There is little doubt that the whole ir was pre-arranged. The men do not in the ordinary rse go right away before the cremation is completed and t a woman can run 50 yards and be burnt to death in view of numbers of men without any attempt to stop or to save her shows that the law was intentionally ken. These barbarous relics of an ancient custom will tinue to recur unless the Government punishes more mmarily and more severely the guilty relatives.

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Of sunny, kindly personality, straight and genuine in every sense, he was one who instinctively was all that was honourable. He will be sadly missed not only by his more immediate friends but especially by the St. John Ambulance Brigade, in whose work he had long been enthusiastically and actively interested, and particularly so will this be the case in the No. 7 district in which he held staff rank. All his brother officers will assuredly feel a keen sense of personal loss in the untimely ending of a life which, to quote the motto of the order, was sacrificed "for service in the cause of humanity."

WILLIAM ALDER, L.S.A.

WE regret to announce the death of Mr. William Alder which took place at Monkwearmouth on June 19th. He had been in failing health for some time and had quite recently returned from a sojourn at Bournemouth which unfortunately had been without benefit. The deceased was an old Guy's Hospital man and a Licentiate of the Society of Apothecaries (1893). For two years after qualifying he served as surgeon on board the s.s. *Esquimaux* and s.s. *Eclipse*, vessels engaged in the whaling trade. After this he settled in Monkwearmouth and soon acquired a large practice and became very well known in the district. For a period of three years from 1896 he served on the town council but did not afterwards seek re-election. He was about 40 years of age. Death was due to chronic nephritis.

A HOSPITAL TENT.—A very interesting feature of the annual camp of the National Fire Brigades Union, held at the Crystal Palace, is the hospital tent, which has been fully equipped by Messrs. Carter of New Cavendish-street, W., on the most improved principles. The aseptic furniture and hospital appliances are of the latest description and members of the medical profession and visitors in any way interested in ambulance work should take the opportunity of inspecting the tent.

HEALTH CONDITIONS IN THE FAROE ISLANDS.—In his report for the year 1904 Mr. Villiers, British consul at Thorshavn, writes: "The condition of health in the islands cannot be regarded as altogether satisfactory. In spite of the natural salubrity of the mid-Atlantic isles, with their pure polar breezes, diphtheria and typhoid fever constantly appear in epidemic form in various villages, cases having occurred in all the larger islands in recent years. The health authorities find it difficult to enforce hygienic regulations among a population that seem to fail to realise the risk of infection. Sanitary arrangements are most primitive and what was possible without being pestilential when inhabitants were scarce and houses less clustered becomes impossible in the rapidly growing villages. Should fishing vessels enter and wish to have communication with the shore in places where infectious diseases are prevalent the master, when reporting his vessel to the quarantine officer, will in future be warned by him of the existing danger. Animals have also been attacked by disease, a blindness having befallen sheep on Ostero and on Sudero. The sheep had been free from this disease for many years. As the sheep here are neither folded nor herded blindness is fatally dangerous on the precipitous coasts of these islands."

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are some of the principal amounts received at the Mansion House, or notified directly to us as having been collected on behalf of the Metropolitan Hospital Sunday Fund up to Thursday morning, when the sum paid in exceeded £30,000, including a donation of £12,500 from the executors of the late Mr. Wyndham Francis Cook.

	£	s.	d.
St. Michael's, Chester-square	1351	0	0
Charles Morrison, Esq.	1000	0	0
William Herring, Esq.	1000	0	0
Sir Savile Crossley	500	0	0
St. Paul's Cathedral	369	0	0
Theistic Church (first instalment)	270	0	0
Christ Church, Chislehurst	212	0	0
Messrs. Watts, Watts, and Co.	210	0	0
"A. G. P."	200	0	0
"A. W."	200	0	0
St. Michael's, Paddington	172	0	0
Brixton Congregational Church	123	0	0
St. Peter's, Brockley	112	0	0
St. John's Presbyterian Church, Forest Hill	101	0	0
W. D. Graham Menzies, Esq.	100	0	0
Alexander Miller, Esq.	100	0	0
Mr. and Mrs. C. E. Layton	100	0	0
"T. G. D."	100	0	0
Messrs. J. S. Morgan and Co.	100	0	0
St. Mary's, Shortlands	92	0	0
[illegible] road	86	0	0
[illegible] nts', Streatham	84	0	0
[illegible]	80	0	0
[illegible] Church, Frognall	80	0	0
[illegible]	75	0	0
St. George's, Perry Hill	75	0	0
Chislehurst Wesleyan Chapel	66	0	0
St. John the Divine, Kennington	65	0	0
[illegible]	59	0	0
[illegible]	58	0	0
[illegible]	58	0	0
[illegible] ch	56	0	0
[illegible]	53	0	0
[illegible]	52	0	0
[illegible] n	51	0	0
[illegible] Chapel	51	0	0
Earl of Cranbrook	50	0	0
[illegible]	50	0	0
[illegible] lackheath	48	0	0
[illegible]	44	0	0
[illegible]	43	0	0
St. Anne's, Highgate Rise	40	0	0
St. John's, Sidcup	40	0	0
St. Augustine's, South Kensington	39	0	0
Farm-street Roman Catholic Church	37	0	0
All Saints', Friern Barnet	37	0	0
Chiswick Parish Church	37	0	0
[illegible]	37	0	0
[illegible]	36	0	0
[illegible]	36	0	0
[illegible]	36	0	0
St. Mildred, Lee	35	0	0
St. [illegible]	35	0	0
St. [illegible] e Newington	35	0	0
[illegible]	35	0	0
[illegible]	35	0	0
[illegible]	34	0	0
[illegible]	34	0	0
[illegible] urch	31	0	0
[illegible]	30	0	0
[illegible] hurch	30	0	0
[illegible]	28	0	0
[illegible] e Newington	28	0	0
[illegible]	28	0	0
[illegible]	27	0	0
[illegible]	26	0	0
[illegible]	26	0	0
[illegible]	25	0	0
Brixton Unitarian Church	25	0	0
Christ Church, Greenwich	25	0	0
Launcelot Fletcher, Esq.	25	0	0
Carmelite Church, Kensington	25	0	0
[illegible]	25	0	0
[illegible]	25	0	0
[illegible]	24	0	0
[illegible]	24	0	0
Magdalen Hospital, Streatham	24	0	0
Harrow Weald Church	22	0	0
All Saints', Leyton	22	0	0
St. Paul's, Canonbury	21	0	0
St. Dionis, Fulham	21	0	0
[illegible]	21	0	0
[illegible]	20	0	0
[illegible]	20	0	0
[illegible]	20	0	0
[illegible]	10	0	0
[illegible]	10	0	0
[illegible] sellschaft	10	0	0
[illegible]	10	0	0
Messrs. Ladenburg			

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in June the following candidates passed in the subjects indicated:—

Surgery.—A. Beeley (Section II.), Leeds; G. N. Biggs (Sections I. and II.), St. Thomas's Hospital and Durham; V. H. Blake (Sections I. and II.), St. George's Hospital; H. R. Grellet (Section II.), Guy's Hospital; F. E. Gubb (Section II.), Royal Free Hospital, A. H. Hughes, Bristol; H. A. Parker (Section I.), St. Thomas's Hospital; J. W. Peatt (Section I.), London Hospital; T. R. St. Johnston (Sections I. and II.), Birmingham; N. A. Stutterheim (Sections I. and II.), Utrecht; A. L. Walters (Sections I. and II.), St. Thomas's Hospital; and J. M. Wilson, Middlesex Hospital.

Medicine.—M. B. Dawson (Section II.), Middlesex Hospital; F. E. Gubb (Sections I. and II.), Royal Free Hospital; P. A. Hendley (Sections I. and II.), St. Mary's Hospital; F. J. Macnhal (Sections I. and II.), Liverpool; [illegible] and II.), Birmingham; and J. M [illegible]

Forensic Medicine.—J. J [illegible] Hendley, St. Mary's Hospital; F. [illegible] y, London Hospital; G. B. Messen [illegible] B. Miles, London Hospital; R. H. Terry, Guy's Hospital; and J. M. Wilson, Middlesex Hospital.

Midwifery.—G. N. Biggs, St. Thomas's Hospital and Durham; V. H. Blake, St. George's Hospital; H. S. Burnell-Jones, Cardiff, Leeds and London Hospital; W. L. Crabtree, Leeds and Charing Cross Hospital; E. B. Miles, London Hospital; and H. M. Waller, St. Bartholomew's Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—A. Beeley, J. J. Commerell, W. L. Crabtree, M. B. Dawson, H. R. Grellet, F. E. Gubb, P. A. Hendley, and A. H. Hughes.

TRINITY COLLEGE, DUBLIN.—At the final examination in medicine held in Trinity term the following candidates were successful:—

Section A.—Cecil Conyngham, Edward C. Stoney, Albert T. J. M'Creery, Henry P. Hart, John W. Lane, Eleanor E. Finegan, Arthur E. Knapp, Wallace D. Mitchell, Herbert R. N. Fowler, George H. Stack, John Gray, and James G. M. Moloney.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE: THE BACTERIOLOGICAL DEPARTMENT.—During the last 12 months 1474 specimens have been examined in the bacteriological department of the University of Durham College of Medicine, Newcastle-upon-Tyne, showing an increase of 352 over the previous year. The great majority of the specimens were examined for the various county councils and public institutions in the neighbourhood. Out of 774 specimens of sputum examined for tubercle bacilli, 39 per cent. were found to be positive. Out of 421 cases of suspected diphtheria, 38 per cent. were found to be positive, whilst from 149 specimens of blood from suspected enteric fever 47 per cent. were positive. 48 samples of water were examined quantitatively for bacteria and six samples of milk [illegible] Urine was examined in 25 cases for [illegible] with five positive results. Ten specimens of blood were examined for anthrax with seven positive results. One sample was examined for glanders with a positive result and one sample of brawn was examined for bacillus enteritidis with a positive result.

NATIONAL SANATORIUM FOR CONSUMPTION AND DISEASES OF THE CHEST.—The annual general meeting of governors of the National Sanatorium for Consumption and Diseases of the Chest at Bournemouth in Hampshire was held in London on May 11th at the Westminster Palace Hotel, the Earl of Eldon (the president of the association) being in the chair. This sanatorium was founded in 1855 for the reception of patients from all parts of the kingdom. The report presented at the meeting showed that the ordinary income for the year ended Dec. 31st, 1904, amounted to £2999 and the ordinary expenditure to £3094. The balance sheet showed a deficit of £426 and in addition to this indebtedness there were at the end of the year several accounts still unpaid amounting to over £1000. In April, 1904, the committee came to the conclusion that owing to the increasing demands for admission an extension of the institution could not be longer delayed if its work was to be efficiently carried on. The carrying out of these necessary improvements caused a temporary interruption in the reception of patients but owing to their completion the sanatorium is now able to receive 85 patients (43 men and 42 women), the dining rooms have been enlarged, six more baths have been added, and sash windows in the sleeping apartments have been replaced by casements. The outlay incurred, including furnishing, amounted to £3000, towards which only about £2000 have been contributed, and it is mainly on this account that the institution is so heavily in debt. The sanatorium is now ering upon the fiftieth year of its existence and in er to celebrate the event the committee is making a cial jubilee appeal for the extinction of the debt for new annual subscriptions, so that the permanent ome may be sufficient to meet modern requirements. The ients remaining in the sanatorium on Jan. 1st, 1904, were men and 37 women and during the year 104 men and 116 men were admitted. There were three deaths and among patients of both sexes who were discharged the results re: much improved, 78; improved, 105; no improvement, . The bankers of the institution are Messrs. Barclay and ., Limited, Pall Mall East, London, and the Wilts and rset Bank, Bournemouth. Inquiries should be addressed the Secretary at the National Sanatorium, Bournemouth.

British Electro-Therapeutic Society.—Dr. nald Baynes, President of the British Electro-Therapeutic ciety, took the chair at the annual dinner of this society, ld in the Prince's Rooms of the Criterion Restaurant, ndon, on June 23rd. The society consists of about 0 medical men interested in the treatment of disease by ectrical methods. One of the objects of the society is educate the profession in the matter of electro-therapeutics d to endeavour to put a stop to the present encourage- ent given by prominent members of the profession to the nployment of unqualified assistance in the treatment of eir patients by electricity and other physical agents. The uncil of the society is now engaged in taking into very rious consideration medical electrical treatment by un- ualified persons and it is hoped that its efforts may meet ith some success. Monthly meetings are held and in the urth annual report of the council it is stated that the verage attendance of the members is very satisfactory. fter the loyal toasts had been duly honoured the chairman roposed the toast of "The British Electro-Therapeutic ociety." He entered in some detail into the grievances of he members of the society and particularly referred to ten edical men whose names were announced as recommending certain individual for the treatment of obesity by the com- ined light treatment, of nervous troubles by blue lights, and f gout, rheumatism, sciatica, lumbago, &c., by the combined bath. Dr. H. Lewis Jones, in responding to this toast, advised the members of the society to concentrate their efforts in the direction of learning how to cure diseases that now were considered incurable. He mentioned with regret that Guy's Hospital had issued a circular from its light department offering to treat paying patients at an inclusive fee of six guineas, stating as a reason that the hospital wished to pay for certain apparatus. Other toasts followed and the proceedings terminated at a late hour.

Hospital Extension at Tottenham.—Two foundation stones of the extensions of the Tottenham Hospital were laid on June 20th—one of a north wing to the front of the hospital as a residential block for the resident medical and surgical staff in its lower part and in a self-contained upper part for a portion of the nursing staff, and the other of an extension to the rear of the hospital, consisting of two new wards and an operating theatre to be called the Drapers' Block. The Lord Mayor and Sheriffs, who drove in state from the Mansion House to the hospital, were received by Sir Francis Cory-Wright, chairman of the hospital, with representatives of the hospital board of management and medical staff. Sir F. Cory-Wright in his address to the Lord Mayor before the stone-laying said that when six years ago the hospital was reconstructed it was in a languishing condition, with only 17 patients to occupy the 73 beds. Since then the needs of the district had grown to such a great extent that it had become absolutely necessary to increase their accommodation. It was his belief that one day their institution would become a second London Hospital. The King Edward's Fund and the Drapers' Company had come forward with most generous support and they looked forward confidently to raising the sum of £6000, which would enable them to bring up the number of beds to 130. The Lord Mayor, who was presented with a silver trowel by Mr. Rowland Plumbe, the architect, on behalf of the hospital, declared the foundation stone of the front block well and truly laid. A vote of thanks to the Lord Mayor and Sheriffs was proposed by Mr. J. P. Beavan, honorary treasurer to the hospital, and seconded by Mr. J. Cloudsley. The vote was acknowledged by the Lord Mayor, and on behalf of the sheriffs in a felicitous speech by Sheriff Vezey Strong. A similar ceremony was performed in the rear of the building, where the foundation stone of the Drapers' Block was laid by Mr. J. Tolhurst, the Master of the Drapers' Company, a silver trowel being also handed to him by Mr. Rowland Plumbe. The chairman of the hospital in his address stated that towards the £20,000 required for the present extensions the Drapers' Company had given £6000. A vote of thanks to the Worshipful Master and Court of Assistants was proposed by Mr. John Langton, chairman of the medical committee, and seconded by Mr. Charles Churchill, vice-chairman of the hospital. The members of the medical staff were present in their academic robes and a large concourse of the supporters of the hospital witnessed the ceremony. Afterwards the guests inspected the wards of the hospital and walked through the grounds, which extend to several acres. The extension includes not only the two new blocks but also the enlargement of two of the present wards, containing 12 beds, so that they will hold 24 beds each; an x ray and electrical department, and a new pathological department, consisting of a spacious museum and a laboratory. The latter part of the scheme is largely owing to the generosity of one of the members of the honorary surgical staff.

Donations and Bequests.—Dr. Thomas Trollope, of St. Leonards-on-Sea, by will bequeathed £1000 to the Hastings and St. Leonards and East Sussex Hospital; £1000 to the vicar and churchwardens of Christ Church, St. Leonards-on-Sea, for the benefit of the sick and poor of the parish; and after making further bequests, provided that his estate be sufficient, a further £1000 to the East Sussex Hospital.—The Zunz trustees have granted to the Friedenheim Home, Hampstead, £3000 on condition that the sum of £600 is raised by other subscribers.—An anonymous donation of £500 has been sent to the Bristol Royal Infirmary.—Miss Symers of St. Helen's has given £1000 to the building fund for enlarging the nurses' accommodation at the Victoria Hospital, Dundee.

Hospital Appeals.—In March last an appeal on behalf of Guy's Hospital was issued asking first, for £100,000, the balance of the funds sought to be raised in 1901 and urgently needed to carry Guy's Hospital through present straits; and secondly, for annual contributions of sufficient amount to enable the hospital to maintain its present work in continued efficiency. This appeal has been met in many quarters by most generous help. Towards the £100,000 required on capital account the response up to date is, roundly, £49,000. But in analysing this sum we find some striking and curious facts. 138 contributors, in sums ranging from £25 to £5000, gave about £46,000. 220 contributors of sums under £25 subscribed rather more than £1000 and the balance is provided by contributions from the million shillings fund. The appeal has been sent into the offices and homes of over 100,000 of the well-to-do classes in the metropolis and in addition personal letters have been addressed to some thousands of those who were considered likely to subscribe, yet a direct response has been received from only 358 persons. Mr. H. Cosmo O. Bonsor, the treasurer, in a letter which we have received from him, earnestly asks those who "have this world's goods" to "help us now and also to remember Guy's Hospital in their wills. Experience has taught us how much the permanence and prosperity of our charitable foundations depend on this kindly forethought for the needs of others on the part of those who are no longer among us."—The committee of University College Hospital has issued a special appeal for funds, contributions from the public not being sufficient to meet the requirements of the hospital. Quite recently it has been necessary to sell out stock to produce £2000 to pay pressing tradesmen's bills. The committee finds itself placed in further difficulty owing to the new building having been handed over to it in an unfinished state by the executors of the late Sir J. Blundell Maple. The sum placed by him at the disposal of the executors for the completion of the building has been exhausted, and they have no power to expend further money on it. The committee is therefore compelled to provide a sum of about £3200 for the execution of absolutely essential work. The committee most earnestly appeals for donations to enable it to meet the cost of this work and also for contributions, in the form of annual subscriptions and donations, for the maintenance of the hospital so as to avoid further sales of stock and the consequent diminution of the permanent income of the charity. The appeal is signed by the Duke of Bedford, President, Lord Monkswell, treasurer, and the chairman and vice-chairman of the hospital committee.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

New Medical Bills.

AT this advanced period of the session it is useless to expect to make progress with Bills introduced by private members but there is an obvious advantage in having the text of a Bill printed and circulated even although the prospect of legislation is not immediate. No doubt it is with a view to gaining this advantage that Sir JOHN BATTY TUKE has this week introduced two Bills affecting medical men and dentists. The object of one is to prohibit joint-stock companies from acting as physicians, surgeons, or medical practitioners, and the other is to prohibit joint-stock companies from carrying on practice as dentists except by means of duly qualified persons.

Medical Affairs in Scotland.

When the Scotch estimates were considered in the House of Commons on June 22nd some references were made to medical affairs in the northern kingdom. It was a matter of complaint that there was only one Local Government Board medical inspector, whereas Ireland has seven, and the suggestion was put forward that if the Board did its duties more thoroughly many schools, particularly in the Highlands and Islands, would not need to be closed so frequently on account of epidemics. In his reply on the debate the LORD ADVOCATE explained that so far as the Local Government Board was aware one medical inspector was able sufficiently to discharge the duties that fell upon him, and there was no justification for appointing additional inspectors. Another complaint was that humanised lymph was still used in some districts. The LORD ADVOCATE stated, however, that *some parents preferred humanised lymph rather than calf lymph* and the Board fell in with their wishes. For those vaccinators who asked for it a small supply of humanised lymph was always available.

HOUSE OF COMMONS.

MONDAY, JUNE 26TH.

Removals from Medical and Dental Registers.

Mr. WEIR *asked the Secretary of State for the Home Department* whether having regard to the fact that during recent years 20 names had been struck off the Medical Register for infamous conduct in a professional respect, whilst six names were removed from the Dental Register for a similar cause, he would state in how many instances the names were removed on charges of adultery.—Mr. AKERS DOUGLAS replied: From the Medical Register in four cases; from the Dental Register in none.

TUESDAY, JUNE 27TH.

Lymph Calves as Food.

Mr. SYDNEY BUXTON asked the Secretary to the Local Government Board whether the carcasses of calves inoculated for lymph at the Local Government Board vaccine station were sold for food in London, and if so, whether he would give instructions to have such carcasses destroyed instead of being returned to the contractors.—Mr. GERALD BALFOUR answered: As I stated in reply to a question put to me by the honourable Member for Ross and Cromarty on the 30th ult. I am advised that there is no evidence whatever that the carcasses of animals used for the [illegible] thoroughly examined by a veterinary surgeon *before being allowed to be sold for* food.

Coccidiosis in Rabbits.

Mr. MORRELL asked the President of the Board of Agriculture whether he had information as to the existence of disease of the nature of tuberculosis affecting the liver of the rabbit, specially prevalent this year, and if so whether he would cause inquiry to be made and information laid before the Commission on Tuberculosis as being a disease possibly affecting the food of man. Mr. AILWYN FELLOWES said: *I am advised that the disease to which my honourable friend* refers is caused by an animal parasite and that it is not of the nature of tuberculosis. Its correct name is coccidiosis. In these circumstances it does not appear to be necessary for any communication to be made to the Royal Commission on Tuberculosis on the subject. It is not considered *by the Board's veterinary officers* that the disease is attended with any danger to man but I propose to bring the matter under the notice of the Local Government Board.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent Garden, W.C.

A Handbook of Intestinal Surgery. By Leonard A. Bidwell, [illegible] ondon Hospital. Price 6s. net.

Tl [illegible] Women. A Treatise for Students and [illegible] Findley, B.S., M.D., Assistant Pro- [illegible] Obstetrics, Rush Medical College in Affiliation with the University of Chicago. Second edition, revised and enlarged. Price 21s. net.

BERGMANN, J. F., Wiesbaden. (F. BAUERMEISTER, 49, Gordon-street, Glasgow.)

Die Ohrenheilkunde der Gegenwart und ihre Grenzgebiete. In Einzeldarstellungen herausgegeben von Dr. Otto Körner in Rostock. V. Die Verletzungen des Gehörorganes. Von Dr. A. Passow, A.O. Professor an der Friedrich-Wilhelms-Universität und O Professor an der Kaiser-Wilhelms-Akademie für das Militär-ärztliche Bildungswesen zu Berlin. Price M.9.60, or 9s. 9d.

CASSELL AND CO., LIMITED, London, Paris, New York, and Melbourne.

The Care and Management of Delicate Children. By Dr. Percy Lewis, Honorary Medical Officer to the Victoria Hospital, and Surgeon to St. Andrew's Convalescent Home, Folkestone. Price 3s. 6d.

CHURCHILL, J. AND A., 7, Great Marlborough-street, W.

The Diseases of Children. By James Frederic Goodhart, M.D., LL.D. Aberd., F.R.C.P., Consulting Physician to the Evelina Hospital for Sick Children. Eighth edition. Edited by George Frederic Still, M.A., M.D., F.R.C.P. Assistant Physician for Diseases of Children, King's College Hospital. Price 12s. 6d. net.

DOIN, OCTAVE, 8, Place de l'Odéon, Paris.

De la Médication Sulfurée. Par le Dr. Ferras, Ancien Interne des Hôpitaux de Paris. Préface d'Albert Robin, de l'Académie de Médecine. Price Fr.3.

FISCHER, GUSTAV, Jena.

Die Talma-Drummond'sche Operation. Ihre Indikation, Technik und die [illegible] Chirurgischen Universi [illegible] Eiselsberg und Geh.-Ra [illegible] Oberarzt der Klinik. [illegible] Vierzehnter Band. Price M.3.60.

GLAISHER, HENRY J., 57, Wigmore-street, Cavendish-square, W.

Anæsthetic Difficulties and How to Combat Them. By A. de Prenderville, M.R.C.S., Senior Anæsthetist to the Tottenham Hospital. Price 1s. net.

HARTLEBEN, A., Seilerstätte, 19, Wien.

Ignaz Philipp Semmelweis. Sein Leben und Wirken. Urteile der Mit- und Nachwelt. Von Dr. Fritz Schürer von Waldheim, prakt. Arzt in Wien. Mit 2 Portraits. Price, paper, K.10, or M.9; bound, 11K. 20h., or M.10.

JOHN BALE, SONS, AND DANIELSSON, LIMITED, 83–91, Great Titchfield-street, Oxford-street, W.

The British Sanatoria Annual. 1905. Price 5s. net.

Squint: its Causes, Pathology, and Treatment. By Claud Worth, F.R.C.S. Second edition. Price 6s. net.

KEENER AND CO., W. T., 90, Wabash-avenue, Chicago, Ill.

A Nurse's Guide for the Operating Room. Second edition, enlarged and revised. By Nicholas Senn, [illegible] Professor of Surgery, Rush Medical [illegible] the University of Chicago. Publishe [illegible] Sisters of Charity, St. Joseph's Hospital, Chicago. Price not stated.

LANE, JOHN, The Bodley Head, Vigo-street, W.

Hysteria and Neurasthenia. By J. Michell Clarke, M.A., M.D. Cantab., F.R.C.P., Professor of Pathology, University College, Bristol, Physician to the Bristol General Hospital. Price 5s. net.

LEHMANN, J. F., Heustrasse 20, München.

Leitfaden zum Augenspiegelkurs. Von Dr. Fritz Salzer, Privat-dozent an der Universität München. Price, bound, M 5.

Die Augenheilkunde des [illegible] Von Dr. Fritz Salzer, Privat-dozent an d [illegible] Sonderdruck aus der Munchener Medi. [illegible], 1905, Nr. 16. Price Pf.80.

LONGMANS, GREEN, AND CO., 39, Paternoster-row, E.C.

The Annual Charities Register and Digest. By C. S. Loch, Secretary to the Council of the Charity Organisation Society, London. Price 5s. net.

Diseases of the Anus and Rectum. By D. H. Goodsall, F.R.C.S. Eng., Senior Surgeon to the Metropolitan Hospital, and W. *Ernest Miles, F.R.C.S. Eng., Surgeon to the* Gordon Hospital for Diseases of the Rectum. In two parts (Illustrated). Part II. Price 6s. net.

Spectroscopy. By E. C. C. Baly, F.I.C., Lecturer on Spectroscopy and Assistant Professor of Chemistry, University College, London. Price 10s. 6d. (Text-books of Physical Chemistry. Edited by Sir William Ramsay, K.C.B., F.R.S.)

MALOINE, A., 25–27, Rue de l'Ecole de Médecine, Paris.

L'Agent Pathogène de la Syphilis: Nature, Cultures, Inoculations, Vaccination *Préventive. Par le Dr. Henri Pommay,* Médecin-Major de I^{re} Classe, Médecin-Chef de l'Hôpital Militaire d'Aumale (Algérie). Price Fr.3.

MASSON ET CIE, 120, Boulevard Saint-Germain, Paris.

Traité de *Gynécologie Clinique et Opératoire. Par S. Pozzi,* Professeur de Gynécologie à la Faculté de Médecine de Paris, Chirurgien de l'Hopital Broca. Quatrième édition, revue et augmentée avec la collaboration de F. Jayle. Tome premier. Prix Fr.20.

P. BLAKISTON'S SON AND CO., 1012, Walnut-street, Philadelphia, U.S.A.

The Thyroid and Parathyroid Glands. By Hubert Richardson, M.D., late Pathologist to Mount Hope Retreat; Pathologist to Maryland Asylum and Training School for Feeble-minded Children. Price, cloth, $3.00

PENTLAND, YOUNG J., Edinburgh and London.

The Edinburgh Medical Journal. Edited by G. A. Gibson, M.D., F.R.C.P. Ed., Alexis Thomson, M.D., F.R.C.S. Ed., and Harvey Littlejohn, M.B., F.R.C.S. Ed. New Series. Vol. XVII. Price not stated.

REBMAN, LIMITED, 129, Shaftesbury-avenue, W.C.

Health and Disease in Relation to Marriage and the Married State. Edited by Geh. Medizinalrat Prof. Dr. H. Senator and Dr. med. S. Kaminer. The only authorised translation from the German into the English language by J. Dulberg, M.D., of Manchester, England. Volume II. Price 30s. net, two volumes complete.

ENSHAW, HENRY, 356, Strand, W.C.
An Introduction to Pathology and Morbid Anatomy. By T. Henry Green, M.D., F.R.C.P., Consulting Physician and Emeritus Lecturer on Clinical Medicine at Charing Cross Hospital. Tenth edition. Revised and enlarged by W. Cecil Bosanquet, M.A., M.D. Oxon., F.R.C.P. Lond., Assistant Physician (late Pathologist) to Charing Cross Hospital. Price not stated.

RENTELL, S., AND CO., LIMITED, 36, Maiden lane, Strand, W.C.
tes on How to Rear an Infant. By G. Bridgeford Proctor, L.R.C.P.E., L.R.C.S.E., L.M., L.F.P.&S.G., late Physician for ght years to Mrs. Leopold de Rothschild's Convalescent Home for Children, Brighton. Price 6d.

AL, F. R. DE, 4, Rue Antoine Dubois, Paris.
Par le Dr. F. Dévé, Professeur
Rouen, Medecin des Hôpitaux.
l. Price Fr.3.
Par le Docteur Raymond Penel,
de Paris. Avec Préface du
de l'Académie de Medecine.
nstitut de Medecine Coloniale
de Paris, Laboratoire de Parasitologie.) Price Fr.6.

Appointments.

essful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are nvited to forward to THE LANCET *Office, directed to the Sub Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication*

CLAY, W. B., L.R.C.P.&S. Edin., has been appointed Certifying
Workshop Act for the Aldershot

nd., has been appointed Physician
Great Ormond street.

RLES, JOHN ROGER, M.A., M.D., B.C.Cantab., M.R.C.P. Lond.,
ed Honorary Assistant Physician

ng., has been appointed Honorary
Infirmary at Leeds

TFIELD, JOHN RAYNOR, L.R.C.P.&S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer and Public Vaccinator for the Kingskerswell District by the Newton Abbot (Devon) Board of Guardians.

SFORD, ALFRED STROUD, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Clinical Assistant to the Evelina Hospital for Sick Children, Southwark Bridge-road, London, S.E.

LLYE, E. W., M.R.C.S., L.S.A., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Donington District of the county of Lincoln.

NES, JOHN, L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Dolgelly District of the county of Merioneth.

ACGILVRAY, W. JACKSON HOOKER, L.R.C.P.&S. Edin., has been appointed Medical Officer to the General Friendly Collecting Society for Higher Broughton, Manchester, and District.

OORE, L. A., L.R.C.P. Lond., M.R.C.S., has been appointed Dental Anæsthetist at the Bristol Royal Infirmary.

ICHOLLS, FRANK J., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed by the London County Council Medical Officer for District N

IGGOTT, F. C e Teignmouth
(Devon) bra

OWNROE, E een appointed
Resident M

ROBINSON, WILLIAM, M.D., M.S., F.R.C.S., has been appointed Honorary Surgeon to the Sunderland Infirmary.

RUDGE, F. H., L.R.C.P. Lond., M.R.C.S., has been appointed Senior House Surgeon at the Bristol Royal Infirmary.

SCOTT, T. GRAHAM, L.R.C.P. Lond., has been appointed Third Anæsthetist to the Hospital for Sick Children, Great Ormond street.

STOCK, W. S. VERNON, M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Assistant Anæsthetist to the Bristol Royal Infirmary.

VAN BUREN, A. C. A., M.D., B.S., L.R.C.P. Lond., M.R.C.S., has been appointed Senior House Surgeon at the Bristol General Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERGAVENNY, MONMOUTHSHIRE ASYLUM.—Senior Assistant Medical Officer. Salary £2[illegible]0 per annum, with board, apartments, attendance, and washing.

ARMY MEDICAL SERVICE.—40 Commissions in the Royal Army Medical Corps.

BATH, ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer. Salary £100, with lodging, board, and laundry.

BOURNEMOUTH, ROYAL VICTORIA HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

BRIGHTON, ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke road.—House Surgeon. Salary £80, with board, lodging, and washing.

CAIRO, SCHOOL OF MEDICINE.—Assistant to the Professor of Anatomy. Also Assistant to the Professor of Pathology. Salary in each case is £E320 per annum.

CHARING CROSS HOSPITAL.—Assistant Surgeon.

CHESTER, CITY AND COUNTY BOROUGH.—Medical Officer of Health. Salary £500 per annum.

CITY OF LONDON AND EAST LONDON DISPENSARY, 35, Wilson street, Finsbury, E.C.—Medical Officer.

CLIFTON, YORKS, NORTH RIDING OF YORKSHIRE LUNATIC ASYLUM.—Medical Superintendent. Salary £600 per annum, with house and allowances.

DERBY, DERBYSHIRE ROYAL INFIRMARY.—Assistant House Surgeon for six months. Salary £30, with board, residence, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Medical Officer for six months. Salary at rate of £100 per annum, with luncheon.

GATESHEAD DISPENSARY.—Assistant Medical Officer. Salary £160 per annum, without board or lodging.

GREAT NORTHERN CENTRAL HOSPITAL.—Physician.

HASTINGS, ST. LEONARDS AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Honorarium 10 guineas for six months, with residence, board, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Assistant Physician.

HOSPITAL FOR SICK CHILDREN, Great Ormond street, London, W.C.—House Surgeon, unmarried. Also House Physician, unmarried. Also Assistant Casualty Medical Officer, unmarried. All three appointments for six months. Salaries £20, with board and residence.

LEEDS UNIVERSITY, FACULTY OF MEDICINE.—Demonstrator of Bacteriology. Salary £150 per annum.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

MARGATE, ROYAL SEA BATHING HOSPITAL.—Honorary Medical Officer in charge of Electrical Department.

METROPOLITAN ASYLUMS BOARD, LEAVESDEN ASYLUM, near Watford, Herts.—Third Assistant Medical Officer, unmarried. Salary £150 per annum, rising to £170, with rations, lodging, attendance, and washing.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Assistant Physician. Also Assistant Surgeon.

NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Honorarium £20, with board, lodging, and washing.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City road, E.C.—Assistant Physician.

ST. GILES', CAMBERWELL, INFIRMARY, Brunswick square, Camberwell.—Assistant Medical Officer. Salary £110 per annum, increasing to £120, with apartments, board, and washing.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 a year, with board, lodging, and washing.

SOUTHAMPTON.—Temporary Assistant Medical Officer of Health for two months.

SOUTH UIST (SOUTHERN DIVISION).—Medical Officer. Salary £77 10s.

STRAITS SETTLEMENT, MUNICIPALITY OF THE TOWN OF SINGAPORE.—Assistant Municipal Health Officer, unmarried. Salary £400 per annum.

SWANSEA GENERAL AND EYE HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with board, apartments, washing, and attendance.

WESTERN GENERAL DISPENSARY, Marylebone road, N.W.—Junior House Surgeon. Salary at rate of £80 per annum, with board,

Broad Sanctuary, S.W.—Medical Registrar.

NTS COUNTY HOSPITAL.—House Physician, unmarried. Salary £65 per annum, rising to £75, with board and residence, &c.

THE Secretary of State, Home Office, S.W., gives notice that in consequence of the death of Dr. James Murphy the appointment held by him of Medical Referee under the Workmen's Compensation Acts, 1897 and 1900, for Sunderland and Seaham Harbour County Court Districts in County Court Circuit No. 2 is vacant.

Births, Marriages, and Deaths.

BIRTHS.

BARENDT.—On June 25th, at 65, Rodney street, Liverpool, W., the wife of Frank H. Barendt, M.D. Lond., F.R.C.S. Eng., of a son.

CREE.—On June 23rd, at St. Hilary terrace, Stoke, Devonport, the wife of Major Gerald Cree, R.A.M.C., of a son.

LAWSON.—On the 24th June, at 12, Harley street, Cavendish square, W., the wife of Arnold Lawson, F.R.C.S., of a son.

NEWTON.—On June 27th, at Fairfield, Chelmsford, the wife of H. W. Newton, M.R.C.S., &c., of a son.

PEMBREY.—On June 16th, at Mount Pleasant, Scrase's hill, Hayward's Heath, the wife of M. S. Pembrey, M.D., of a daughter.

TURNER.—On June 25th, at Westbury, Purley, Surrey, the wife of S. Duke Turner, M.D., D.P.H., of a daughter.

MARRIAGES.

CARMICHAEL—CLAYTON.—On June 24th, at St. Mary's Church, Long Ditton, Henry Carmichael, M.B., C.M., of The Elms, East hill, Wandsworth, to Margaret Lydia, daughter of Charles H. Clayton.

GATES—FOWLER.—On June 24th, at All Saints, Great Marlow, Edward Alfred Gates, M.D., M.R.C.P., to Mary Elizabeth, third daughter of the late Major General Fowler, R.E.

DEATHS.

26th, at Buckingham Palace-mansions, James
M.D., LL.D., C.S.I., Surgeon General with
ndia, Hon. Surgeon to the King, aged 76.

TURNBULL.—On June 22nd, at Lansdowne crescent, W., Alexander Turnbull, M.D., Inspector General of Hospitals and Fleets, R.N. (retired), aged 67.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE MISSION TO LEPERS IN INDIA AND THE EAST.

IN the thirtieth annual report of this society continued extension of work is recorded. Including the inmates of the new asylums opened last year the mission is now supporting, or in some way relieving, about 7000 lepers and their children. Perhaps the most hopeful branch of the society's work is the rescue of the untainted children of leprous parents for whom 20 special homes are maintained. One of the events of the past year was the opening of the new asylum at Tarn Taran in the Punjab. This institution takes the place of a miserable collection of huts in which the lepers of that district formerly existed in misery and squalor. The asylum was opened by the Lieutenant-Governor of the Punjab and the sympathy of the authorities with this benevolent work was further shown by the visit of Sir Andrew Fraser to two of the Bengal asylums of the mission, in the largest of which 700 lepers and their children are now provided for. The report tells of interesting and on the whole very hopeful experiments with leprolin, the new serum discovered by Captain E. R. Rost of the Indian Medical Service. A number of cases treated with leprolin have apparently received relief; they are being tested in observation wards with a view to determine whether the improvement is permanent. The mission is carrying on work in as many as 72 stations in India, China, Japan, and other parts of the Far East, their total expenditure for the year being £19,800.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—Can any of your readers tell me of a home where a male patient suffering from paralysis involving the excretory organs can be admitted and taken care of? He is in a position to pay about £3 3*s.* per week inclusive.

I am, Sirs, yours faithfully,
BERTRAM ADDENBROOKE.
34, Mill-street, Kidderminster, June 20th, 1905.

A NEW METHOD OF GENERATING FORMALDEHYDE GAS FOR FUMIGATING PURPOSES.

THE high value of formaldehyde gas as a fumigating agent has to some extent been discounted by the complicated and expensive generators which are very liable to get out of order and by the length of time required to generate sufficient gas to fumigate an apartment. To overcome these difficulties the vapourisation of solid polymerised *formaldehyde*, paraform, by means of a burning charcoal cone was resorted to. Unfortunately this proved an inefficient substitute owing to several causes, chief of which were the absence of moisture, the complete combustion of a large part of the paraform, and the volatilisation of the paraform as such instead of decomposing into simple gaseous formaldehyde, and the risk of setting fire to carpets and furniture. These various difficulties appear to have been overcome by Mr. Henry V. Walker of the Department of Health, Brooklyn, U.S.A., according to the Journal of the American Chemical Society of March, 1905, p. 277. He suggests a method of liberating formaldehyde gas from its aqueous solution by the addition of lime as a dehydrating agent. In order to prevent the calcium hydroxide which goes into solution from converting the formaldehyde into alcohol and acid aluminium sulphate is added which forms an insoluble sulphate with the lime. In practice the mixture is made by dissolving 20 to 25 pounds of commercial aluminium sulphate in five gallons of hot water and mixing this solution with 15 gallons of 40 per cent. formaldehyde solution. Eight fluid ounces of this mixture and one pound of lime are used for every 1000 cubic feet to be fumigated. The lime should be in the form of coarse powder or lumps and it is essential that it should slake rapidly with cold water. This method has the advantages of not requiring any special apparatus, of cheapness, and of freedom from danger of fire. In municipal practice it has given excellent results, over 90 per cent. of successful fumigations, as tested by bacillus pyocyaneus, being obtained. This high degree of success is doubtless largely due to the great rapidity with which the gas is evolved, a sufficient quantity to fumigate an ordinary apartment being liberated in from five to ten minutes.

TO DEADEN SOUND.

To the Editors of THE LANCET.

SIRS,—In 1894 I suggested a simple expedient for the prevention of insomnia. It was to exclude sound and light by lying on the edge of the pillow which fold from the back of the neck over the ears and eyes.

I am, Sirs, yours faithfully,
Welbeck-street, W. E. D. MAPOTHER.

◆

S.—We cannot publish our correspondent's letter as it amounts to a reflection upon the ability and honesty of the whole nursing profession founded upon individually unfortunate experience. Nurses detected by a patient or a patient's friends in such conduct should at once be reported to the medical man in charge of the case and to any nursing establishment or institution with which they may be connected.

Medico.—The professional prospects of a medical man starting practice in the district named are not very good. Most of the districts are sparsely populated, while in the townships medical men are already established. Canada turns out highly qualified medical men every year from the excellent Universities of Montreal and Toronto.

Senex.—The subject has been dealt with on several occasions recently in our columns and we think that to make further allusion to it will be inadvisable. Undoubtedly the situation constitutes one of the drawbacks of medical service in the army, but perpetual ventilation of the grievance does not seem to us likely to lead to reform.

Coincidence has written us an interesting letter but although it is interesting it has failed to convince us.

C. S.—We fear the suggestion is hardly practicable.

ERRATUM.—In our table of "Dispensaries" given in "THE LANCET Hospital Sunday Fund Supplement," published on June 17th, p. 1656, the number of out-patients' visits at Kilburn, Maida Vale, and St. John's Wood Dispensary should have been 7958 and not 5958 as there given.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.).

TUESDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (5th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.) Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.).

THURSDAY (6th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex
(1.30 P.M.), St. Mary's (2 30 North-West
London (2 P.M.), Gt. North. 2.30 P.M.),
Metropolitan (2.30 P.M.), I. St. Mark's
(2 P.M.), Samaritan (9.30 A.M den-square
(9.30 A.M.), Guy's (1.30 P.M.), Royal Ear
(2 P.M.).

FRIDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (8th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY 0, Hanover-
square, W.). Boxall, Dr.
Fairbairn, -Jones, and
Mrs. Boyd. A Case of
Uterine Tur .—Mr. Targett
and Mr. Hicks: Malignant Embryoma of Ovary.

THURSDAY (6th).—NORTH-EAST LONDON CLINICAL SOCIETY (Tottenham Hospital, N.).—4 P.M. Annual General Meeting.

FRIDAY (7th).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—8 P.M. Card

Specimens. 8.30 P.M. Papers:—Mr. C. Worth: Hereditary Influence in Myopia.—Mr. M. S. Mayou: Tubercle of the Iris.—Mr. S. Snell: (1) Sympathetic Ophthalmia (severe), Recovery of Perfect Sight [illegible] Eyes; (2) Cases of Sympathetic [illegible] ucleation; (3) A Further Instance of [illegible] Member of the same Family.—Mr. [illegible] Nettleship: (1) Note on the Prognosis in Chronic Serpiginous Ulcer (Mooren's Ulcer) of the Cornea; (2) Sequel to a Case of Oxycephaly or "Tower-Skull," published in 1887, by E. Nettleship. Annual General Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

NDAY (3rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Dr. J. M. H. Macleod: Clinique. (Skin.) 5.15 P.M. Dr. F. J. McCann: The Treatment of Pruritus and Allied Conditions affecting the Vulva.

OST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. R. J. Reece: Infection, Immunity.

ESDAY (4th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Dr. L. Guthrie: Clinique. (Medical.) 5.15 P.M. Dr. G. F. Still: Constipation in Infancy and Childhood.

OST-GRADUATE [illegible] J, Hammersmith-road, W.).—5 P.M. [illegible]

ORTH-EAST LON[illegible] (Tottenham Hospital, N.).—4.30 P.M. Lecture:—Dr. G. N. Meachen: Loss of Hair, its Causes and Treatment.

ATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen square, Bloomsbury, W.C.).—3.30 P.M. Dr. Collier: Peripheral Neuritis, Interstitial.

EDNESDAY (5th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Mr. P. J. Freyer: Clinique. (Surgical.) 5.15 P.M. Dr. J. Fawcett: Cancer of the Stomach.

OST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Beddard: Practical Medicine.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Lecture:—Mr. S. Boyd: Tuberculous Disease of the Spine in Adults.

HURSDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Dr. D. Sommerville: Errors of Digestion in Relation to Disease.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Practical Surgery.

HOSPITAL FOR SICK CHILDREN (Gt. Ormond street, W.C.).—4 P.M. Lecture:—Dr. Still: Habit Spasm.

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Lecture:—Dr. Bell: Pregnancy and Fibroids.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture:—Mr. J. Berry: Foreign Bodies in the Air-passages. (Post-Graduate Course.)

ROYAL INSTITUTE OF PUBLIC HEALTH.—5 P.M. Mr. A. Macmorran: Some Legal Difficulties in the Administration of the Public Health Statutes.

FRIDAY (7th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Mr. S. Stephenson: Clinique. (Eye.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-[illegible] Treatment of Insanity.

N[illegible] SED AND EPILEPTIC (Queen-[illegible] M. Dr. Collier: Peripheral Neuritis, Toxic.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only. AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND, IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1905, which was completed with the issue of June 24th, and the Title-page to the Volume, are given in this number of THE LANCET.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1905 will be ready shortly. Bound in cloth, gilt lettered, price 18*s*., carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s*., by post 2*s*. 3*d*.

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 29th, 1905.

Date	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
June 23	30·37	E.	...	127	76	56	56	64	Fine
" 24	30·31	N.E.	...	123	73	51	53	55	Overcast
" 25	30·17	N.E.	...	90	74	55	56	61	Cloudy
" 26	29·92	N.E.	0·02	86	71	57	57	62	Cloudy
" 27	29·86	N.W.	.	127	82	60	62	67	Hazy
" 28	29·79	S.W.	...	100	76	59	59	62	Overcast
" 29	29·69	S.E.	...	93	70	58	59	65	Overcast

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A Clinical Lecture

ON

AUTOMATIC FLUSHING OF THE STOMACH IN CERTAIN CASES OF VOMITING.

Delivered at St. George's Hospital,

By SIR WILLIAM H. BENNETT, K.C.V.O., F.R.C.S. ENG.,
SENIOR SURGEON TO THE HOSPITAL.

GENTLEMEN,—In an address published in 1900[1] I dealt with some points connected with vomiting as met with in surgical work which seemed to me to be of interest. What I have to say to-day is the outcome of further experience in the same direction and may be taken for practical purposes as a sequel to the observations I then made.

Speaking generally it will, I am sure, be found that an honest respect for traditional methods of treatment is worthy to be encouraged, but a respect of this kind is quite different from the slavish adherence to manners and methods which, at all events in many cases, if not harmful, are useless and ought rapidly to become obsolete. This observation applies with singular aptness to the treatment of certain forms of vomiting not uncommon in ordinary clinical work, which is prone to occur in many abdominal cases, with and without operation, in which, for some reason or other, the normal functions of the intestines are so disturbed that frequent rejections of the stomach contents take place. Such vomiting may be met with in intestinal obstruction, in true peritonitis, in the pseudo-peritonitis following certain abdominal operations and injuries, and other conditions of a like nature which I need not detail. The traditional method of treatment in cases of this kind is to abstain as far as possible from giving the patients anything by the mouth in the way of liquid, upon the assumption that the less fluid there is in the stomach the less the stomach will tend to reject its contents and so the less will be the tendency to vomiting, the offensive character of the stomach contents as a factor in the production of vomiting being ignored. This is a pretty generally accepted method in the schools. Now, in all patients suffering from this distressing condition the great misery complained of is the intense thirst, because, as can readily be understood, the frequent ejection of fluid from the stomach in excess of that which is put into it must very rapidly lead to a general drying up of the body moisture and so engender a thirst of the most painful type. To obviate this intense discomfort—I mean the discomfort of thirst—attempts have been made by the use of large injections of water into the bowel, but more commonly simply by the giving through the mouth of very small quantities of fluid, either hot water in sips, or certainly not in larger quantities at one time than a tablespoonful, or by the administration of very small pieces of ice which are allowed to dissolve on the tongue. The first of these methods does to some extent, although not completely, tend to assuage thirst but it does not alter the character of the vomit, a most important point. The remaining two plans may be set aside as of little account in the assuaging of thirst as their effect is practically *nil*, mainly because the abstraction of fluid from the body generally by the ejections from the stomach is so far in excess of the fluid added by these methods that it must be clear to the meanest comprehension that no relief to thirst worth mentioning can possibly be achieved by them. Vomiting of this type, even supposing that there is not intestinal obstruction, is a very serious condition, and as a matter of fact a certain percentage of patients who reach the period of the "stinking vomit," which, although very frequently called stercoraceous,[2] that is to say containing fæcal material, is not always so, die not from the disease which produces the vomiting, but from the exhaustion, distress, and disgusting effect of the process of vomiting such offensive material. Obviously, therefore, some means should be sought by which this vomiting can either be arrested or the vomit be so altered in its composition as to be less offensive, so that the disgust engendered by its occurrence can be avoided. The question then arises how is this to be brought about. The matter is not difficult, although I must confess to having learnt it from a patient who took the treatment of his case into his own hands, against the advice of his medical attendants, of whom I was one. It consists, in fact, instead of restricting the amount of fluid given, of allowing the patient to drink as much as he chooses of ordinary cold or tepid water or some other perfectly unirritating fluid. As the thirst in the first instance is the main thing to be obviated, plain water is the best, because it is more quickly absorbed than any other liquid. The effect of the administration of water in this way in cases of the kind is really to bring about a very frequent automatic washing out of the stomach and it will be found by the time the patient has taken, say, a pint or one and a half pints of water, which he will greedily do, that the vomit, although occurring quite as frequently as, or perhaps more frequently to begin with than, before, becomes clear; it loses its smell, the offensive taste is gone, and the patient's disgust is entirely removed. In such a case it is a revelation to watch the change that comes over a patient's countenance as he is allowed to quench his thirst and as the vomiting, after taking free libations of water, becomes inoffensive to the taste and smell. The look of disgust and distress which is such a notable characteristic in the ordinary circumstances, is replaced, as the stomach is cleansed each time the vomiting of the recently swallowed water occurs, by a look of contentment and repose which is hardly credible unless it has been actually seen. This method, of course, as I have already hinted, is entirely contrary to orthodox methods but, as I have also said, it is necessary from time to time to reconsider our position with regard to orthodox teachings, because there is no doubt that in many cases tradition—we might almost say superstition—lends such an importance to some old-fashioned methods that they are adhered to with a blind confidence which is not particularly creditable to the intelligence of those who follow them.[3]

CLINICAL EXAMPLES.

The following cases should afford enough clinical evidence of the correctness of the foregoing observations.

CASE 1.—A man, about 68 years of age, of strong physique, developed evidences of partial intestinal obstruction of a chronic kind which finally led to an exploratory operation being made, with the result that there was found an apparently malignant mass involving the large intestine, dragging also into itself a knuckle of the ileum. A number of secondary masses were scattered about the abdomen and the disease was clearly so extensive in its distribution that no good whatever could be done by an extension of the operation, more particularly as it appeared very doubtful whether a condition of complete obstruction would finally accrue although it was possible that it might do so. In these circumstances nothing was done with the local condition; the abdominal wound was closed, and the patient was told as candidly as possible what the state of affairs was. Within three or four days of the operation an increased obstruction ensued and vomiting commenced. This in the usual course was followed by the intense thirst I have referred to; by degrees the vomit became stinking, containing sometimes a litttle blood, the result of the straining; and the taste, as the patient said, was something horrible. From being a comparatively robust looking person at the onset of the vomiting, in three or four days he was an emaciated, miserable-looking object who was only "longing to die to escape," as he said, "from this horrible thirst and taste and stink." Those were his own words. Up to that time he had been treated in the orthodox way, with the restriction of fluid in the manner that I have mentioned earlier in this lecture. At last the thirst became so terrible that the patient said, as he was going to die, or felt that he was going to die, he would prefer to quench his thirst, even if it made him vomit more; he therefore not only begged but insisted upon having as much water to drink as he wanted. Seeing the desperate condition in which he seemed to be, and seeing the confidence that he felt of being more comfortable if he wer allowed to follow this plan I acquiesced and we allowed him to have by his bedside a glass of water, which was continually filled as fast as he chose to drink it. The amount of fluid taken in the first two or three hours was very large and of course the vomiting was frequent. But, as I have already mentioned, very rapidly the rejected contents of the stomach, instead of being dark and ill-smelling, became clear, there was no effort involved in the vomiting, and the water which he drank, after resting for a certain time in his stomach, regurgitated from his mouth, upon which he almost immediately took some more water in the ordinary way. Before he had been on this line of treatment a few hours the thirst had entirely disappeared and he "thanked God" for the comfort which followed. By degrees the vomiting became less and at the end of the third day from the commencement of this treatment, instead of being dead, as appeared likely at the commencement, he was manifestly getting better, and as a matter of fact his bowels resumed their normal functions for a period; he lived for some time, taking free libations of water, and latterly taking a little liquid food, vomiting about once in 24 hours only, and being in perfect comfort. Finally, he died from exhaustion, comfortably, in quietude, and without distress. Now, if you think for a moment, if by chance any of you happen to have seen a man dying from intestinal obstruction, of the contrast between one dying in the way that this man did and the way in which people similarly circumstanced generally die—the stinking vomit coming from the mouth and nose and creating a horrible disgust which is quite indescribable—you will see at least that if in this particular instance the treatment did not finally save the patient's life, it certainly prolonged it and insured a peaceful end—a matter of no small moment.

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[1] On Vomiting, considered from some of its surgical aspects, especially with reference to a fæculent vomit which is sometimes curative, Brit. Med. Jour., March 24th, 1900.

[2] When really stercoraceous, vomiting is in itself occasionally curative: see address above referred to.

[3] In order to economise space some purely elementary points appropriately included in the lecture as delivered are omitted here.—W. H. B.

Case 2.—The next case is even more instructive. The patient was a man in the FitzWilliam ward, about 45 years of age, who had a very large irreducible hernia, which proved at the operation to be for the greater part omental. The amount of omentum which had to be removed, as it was almost all adherent, was very large, weighing something like a pound, and, as I have often pointed out here and elsewhere,[4] when large masses of recent, that is to say, normal, omentum are ligatured, you are liable to find symptoms arise during the first 48 hours after the operation which are indistinguishable from those of strangulation of the bowel, and in cases of this kind, in which a hernia has been operated upon, I have known the wound to be opened up. In fact, the abdomen has been opened on the supposition that there has been recurrent strangulation when the symptoms were simply due to a tightly ligatured omental mass which, if left alone, generally ceases to cause irritation and the patient as a rule gets well. In this particular instance these symptoms followed and they were, I think, the worst of the kind I have ever seen, because within 48 hours of the operation the abdomen was distended to a great degree and there was vomiting of material which my house surgeon called stercoraceous and which certainly was stinking and very offensive whilst the patient looked like a man who was dying. He had, up to the time of my seeing him, which was about 24 hours after the onset of these symptoms, been treated in the orthodox manner to which I have referred. As soon as I saw him in this condition I ordered him to have any amount of water to drink. He very soon took advantage of the permission and drank large quantities, as patients suffering in this way do, although they vomit at first almost as soon as the fluid passes into the stomach. The result was, as in the case which I have already described, that very rapidly the stinking character of the vomit disappeared and there was simply ejected from the stomach at intervals clear water without effort and without discomfort. An almost immediate change in the patient's aspect commenced to show itself and, after a free action of the bowels, which could not previously be brought about, had been obtained by the use of enemata, he recovered. I believe I am right in saying that there is not the least doubt that had the orthodox treatment been here used this man would have died, and died very shortly, from the effect of this fœtid vomiting occurring in the manner in which it does in such cases. That is an example, then, in which a departure from the orthodox treatment, I have no doubt, saved the patient's life.

Case 3.—The same result followed in this instance, the patient being a child, aged 13 years, upon whom I operated for appendicitis—a subacute appendicitis of the worst kind, one of the most difficult operations I have had to perform, I think, for the removal of the appendix; in fact, it was a question at one time whether it would not be wiser to give up the attempt. We persevered, however, and finally removed the diseased mass, hoping that things would go well. Precisely the same state of affairs occurred in this child within 12 hours of the operation as happened in the foregoing case of the man. No doubt the child developed peritonitis, which was not remarkable considering the difficulties of the case, there having been an abscess as well as some sloughing tissue to be dealt with. The vomiting came on in the same way as in the other cases and all the child begged was that she might have something to quench her—thirst—the universal cry of all these patients. Fortified by my previous experience I gave the child as much water as she cared to take; and she took it by the pint. The same sequence of events followed. The vomit cleared, the attempts at vomiting were quite effortless, the ejection became nothing more than a mechanical regurgitation, the distressed look on the face disappeared in a few hours, and the child recovered, which I do not believe for a moment she would have done if she had been treated on the orthodox principle.

Case 4.—This is another equally striking example. A middle-aged man, of a strongly alcoholic temperament, received a blow upon the abdomen which caused slight discomfort only at the moment. On the following day "cramps in the stomach" began to occur with distressing and increasing frequency. Vomiting soon set in and before long assumed the stinking type. The abdomen became distended and tender and the aspect of the case seemed grave. Operative measures were considered but were declined on the ground that recovery could not be guaranteed. Under the orthodox treatment by deprivation of fluid by the mouth the thirst became intense and the patient seemed to be rapidly getting exhausted. Free libations of cold water upon the lines indicated were taken. The vomit quickly became clear and inoffensive, the thirst disappeared, the foully coated tongue cleaned, whilst the patient's general condition improved with singular steadiness. For 24 hours vomiting of clear water followed the free libations and then by degrees passed off. I have no doubt that the plan adopted saved the patient's life. What the pathological condition present was I cannot say, but it had all the clinical characters of peritonitis.

These four cases suffice, although I could quote others, to show the advantage of adopting the plan which I advise you to use in the circumstances. Of course, in doing so it must be remembered that you are running counter to the orthodox teachings, you must therefore be prepared to have exception taken to the method. But if by adopting a method of this kind you are merely able to make a dying patient more comfortable by relieving the terrible thirst as well as the distress and disgust which are engendered by this vomiting, that in itself is sufficient to justify your attitude. And further, if it is possible, as I have not the least doubt it is, as I have been able to show in some of the cases which I have mentioned, actually to save life by the proceeding, a departure from the ancient method is not only fully justified but becomes a mere matter of duty under the conditions which I have described.

Plumbing in Relation to Health.—One of the most important factors in domestic hygiene is the avoidance of structural defects in the dwelling house. These may be of many kinds but the most serious are deficient admission of air and light, dampness, and improper or defective drainage. With the modern system of water carriage of excreta the entrance of sewer air into a house is an evil to be dreaded and for its exclusion the householder must rely almost entirely on the goodness of the plumber's work. In an address delivered on May 30th at a public meeting in Bristol on Plumbing in Relation to Health Dr. D. S. Davies, medical officer of health of the city, said that 20 years ago it was often assumed that drainage defects were responsible for the spread of the majority of the communicable fevers. Later experience had modified that view and had reduced the number of specific diseases capable of propagation in this way, but it was none the less true that grave injury to the general health resulted from inattention or ignorance in carrying out the practical details of plumbing work. The registration of plumbers was therefore desirable and there was great need for able, careful, and guaranteed workmanship.

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[4] Clinical Lectures on Abdominal Hernia.

N ANALYSIS OF 300 CONSECUTIVE GYNÆCOLOGICAL LAPAROTOMIES.[1]

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PART I.

HE cases dealt with in this paper are all the cases of ominal section performed by me between April 3rd, 1901, Oct. 14th, 1904. They extend, therefore, over a period hree years and six months, but may be more correctly rred to a period of three years and four months, as the e of the penultimate case in the list is August 12th, 1904, r which I was away for two months. Allowing for idays in the other years the cases may be considered with e approach to accuracy as representing three years' work n average of 100 cases a year. The cases, however, are evenly distributed over the period of time under review. ce June, 1903, when I succeeded to the senior post in my artment at the London Hospital, down to the date of the th case in the list (Oct. 14th, 1904), I performed lominal section 160 times, thus leaving only 140 cases onging to the previous two years.

he cases are tabulated consecutively in chronological ler as they occurred. The plan that has usually been opted of publishing separately a large series of ovariomies, abdominal hysterectomies for fibroids, and so on, pears open to criticism. It is apt to lead to the exclusion most of the fatal cases; at all events it would have had is effect if applied to the present series. In classifying e cases in my table I have several times been struck with e difficulty of deciding into which class a particular case ould go. No doubt in the majority of the cases it is easy come to a right decision. An ovariotomy, of course, goes to the list of ovariotomies and an abdominal hysterectomy r fibroids into the list of cases with that heading. But hat is to be done when a case occurs in which both these perations have been performed at the same time on the ame patient? In operations for the removal of the uterine ppendages the same difficulty occurs. Not rarely on one ide or the other the ovary shows more or less definitely ystic degeneration. Suppose there is single or double yosalpinx present and that on one side there is a cystic vary, for example, of the size of an orange, how should the peration be classified? Is it an ovariotomy or an operation or the removal of inflamed appendages? It is scarcely fair o call it an ovariotomy since nearly all the danger of the peration is due to the condition of the tubes. Without welling further on this point I think most of us will agree that, as regards gynæcological work, the only satisfactory course is for an operator to publish his cases of abdominal section in consecutive series as they occurred, and at the same time to publish a sufficiently large number to eliminate the chance that a particular run of cases may have happened to be unusually favourable.

The cases in my paper are classified under the following groups. 1. *Ovariotomy*.—By this is meant the complete removal of an ovarian tumour, cystic or solid, and in this group are included operations for the removal of cysts of the broad ligament and tubo-ovarian cysts. Cases in which hysterectomy for any reason has been performed are placed in a separate category. 2. *Abdominal hysterectomy for fibroids, including panhysterectomy*.—In the great majority of the operations for fibroids the operation adopted was the supravaginal amputation of the body of the uterus, leaving more or less of the cervix as a stump. Cases in which an ovarian tumour has been removed at the same time have been placed in this class. 3. *Removal of inflamed uterine appendages*.—In this group are placed the cases in which the pathological condition of the Fallopian tubes appeared to be the chief morbid factor present. This group includes cases in which a more or less definitely cystic ovary was removed as well as the diseased tubes. 4. *Abdominal section for ectopic pregnancy*. 5. *Abdominal hysterectomy for conditions other than fibroids*.—In this group are included cases where the uterus has been removed for hæmatometra, carcinoma of the body of the uterus, or as an incident in an ovariotomy or operation for pyosalpinx. 6. *Exploratory laparotomy*. 7. *Cæsarean section*.—Some objection may be made to including these cases in a list of gynæcological abdominal sections. But, to make the list of cases in which I have opened the abdomen during a particular period strictly consecutive, I have thought it better to include cases of Cæsarean section, as well as laparotomies for ectopic pregnancy, to the inclusion of which similar objections apply. 8. *Myomectomy*. 9. *Hysteropexy*.

I. *Ovariotomy*.—An analysis of the cases here tabulated shows that there were exactly 100 ovariotomies in the 300 cases under consideration, a fact of which I may say I was unaware till the analysis was made. Among these 100 ovariotomies there was no mortality, nor any incomplete operation. The numbers of these cases in the table are.: 1, 3. 4, 8. 10, 14, 26, 30, 32, 33, 42. 43, 45, 52, 55, 59. 60 66, 69. 70. 73, 78. 80, 82, 84, 95 96, 99, 105, 114, 115, 116, 118, 119, 124, 129, 131, 132, 133. 135, 137. 138, 140, 145, 146, 157, 159, 170, 171, 173, 175. 179. 181, 182, 184, 192, 196, 200. 201. 202, 203, 206. 210, 215, 217, 219, 221, 225, 229, 2 0, 231, 232. 233, 239. 243, 244, 245, 249, 250, 254, 255, 257, 261. 262, 264, 268. 269, 273, 274, 275, 276, 277, 285. 2, 288, 293, 294, 296. 297, and 298 = 100. In 29 of these cases the disease was bilateral (Nos. 8, 14, 30, 32, 45, 5 60, 78. 95. 96, 105, 115, 131, 135, 138, 140, 145, 157, 59, 175, 192. 196, 206, 215, 217, 261, 273, 274. and 29). The pedicle was twisted in 18 cases (No. 43. 59 69, 0, 78, 82, 116, 131, 145. 173, 184, 192. 219. 245, 255, 27, 293. and 296). The cyst was suppurating in nine cases (os. 14, 124. 146, 203, 210, 239, 244. 268, and 275). In one case (No. 30) there was a double uterus. In one case (No 55) the patient had a carotid aneurysm. In seven cas the tumour was a dermoid (Nos. 69, 140, 202, 225, 2, 232, and 274). Enucleation was required in ten cases (os. 73, 105, 118, 119. 124, 135, 159, 171, 181, and 250). three cases (Nos. 82, 184, and 261) the patient was pregn t at the time of the operation; in two of these a miscarria occurred soon afterwards. In one of these cases (No. 2) it is interesting to note that both ovaries were cystic, ming tumours of the size of a child's head one year old. he patient was four and a half months pregnant at the tim f the operation and it was only 13 months since her last nfinement at term. In two cases (Nos. 129 and 179) t ovarian tumour was a fibroid. The ureter was seen in th course of separating the cyst in seven cases (Nos. 135, 1 181, 244, 250, 275. and 285). In one case (No. 275) the eration was to remove the rest of an ovarian tumour left y another operator four years previously. Drainage was nployed in nine cases (Nos. 1, 73, 105, 118, 137, 239, 25 268, and 275). In one case (No. 1) Keith's tube was us and in all the others drainage by gauze was adopted.

II. *Abdominal hysterect y for fibroids*—In this class there are 73 cases with fo deaths, a mortality of 5·4 per cent. In two of the fata ses death was due to intestinal obstruction—in one of the (No. 40) caused by a coil of small intestine adhering to e seam across the floor of the pelvis; in the other case (N 51) caused by a coil of intestine passing through a hole in omentum about a month after the operation. As these the only cases of abdominal section in which intestina bstruction has occurred in the whole of my experience, th cident must be a very rare one. I think, however, that *a pri* there is more risk of it after abdominal hysterectomy fo roids than in other gynæcological laparotomies. The rem l of the uterus obviously leaves a vacancy in the pelvis tha es not occur after ovariotomy, so that intestine must ne arily more readily occupy the pelvis after hysterectomy. obably, however, this factor is not the only one, and the dent is more likely when there is a specially long mesente Since the occurrence of these two cases I always try to d the omentum down over the intestines, so as to have, if sible, the omentum intervening between them and the sea ver the stump. At the same time apertures in the omen can be recognised and closed. In one case (No. 58) death due to shock in three days' time in an extremely anæmic wo, aged 51 years. This patient had for some years been sed against operation but she had continued to grow wea and weaker till finally it was felt that operation was he y chance. This case, in fact, indicates what may be ca the mortality of expectant treatment. She ought to been operated on before her condition became so unfa able. In one case (No. 166) one part of the growth ha tended under the peritoneum, raising it from the left ilia a, so that extensive enucleation was necessary. This ient died from sepsis due, I

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[1] A paper read before the Medical Society of London on Feb. 27th, 1905.

TABLE GIVING PARTICULARS OF 300 CONSECUTIVE LAPAROTOMIES.

No.	Age.	Married or single.	Number of children.	Number of miscarriages.	Nature or cause of operation.	Date of operation.	Drainage.	Result.*
1	32	M.	3	0	Ovariotomy (left).	April 3rd, 1901.	Keith's tube.	R.
2	39	M.	5	0	Appendages removed.	April 27th, 1901.	No.	R.
3	49	M.	0	2	Ovariotomy.	May 2nd, 1901.	No.	R.
4	25	M.	5	1	Ovariotomy.	May 6th, 1901.	No.	R.
5	38	S.	—	—	Abdominal hysterectomy.	May 11th, 1901.	Keith's tube.	R.
6	46	M.	7	2	Abdominal hysterectomy.	June 6th, 1901.	Gauze through abdominal wound and vagina.	D.
7	—	S.	—	—	Appendages removed.	June 12th, 1901.	No.	R.
8	30	M.	2	0	Double ovariotomy.	June 13th, 1901.	No.	R.
9	49	S.	—	—	Abdominal hysterectomy	June 16th, 1901.	Keith's tube.	R.
10	45	M.	3	0	Double ovariotomy.	June 20th, 1901.	No.	R.
11	34	—	—	—	Appendages removed.	July, 1901.	No.	R.
12	46	M.	4	2	Exploratory laparotomy	July 18th, 1901.	Gauze.	R.
13	46	S.	—	—	Abdominal hysterectom	August 22nd, 1901.	No.	R.
14	28	—	—	—	Double ovariotomy	August 26th, 1901.	No.	R.
15	35	S.	—	—	Panhysterecty and ovariotomy	August 29th, 1901.	Gauze per vaginam.	R.
16	34	—	—	—	Ectopic pregnancy	Sept. 2nd, 1901.	Keith's tube.	R.
17	39	M.	0	0	Abdomina hysterecton	Sept 3rd, 1901.	No.	R.
18	45	M.	5	0	Ovariotomy d hysterector	Sept. 6th, 1901.	Gauze and Keith's tube	R.
19	27	M.	2	0	Ectopic egnanc	Sept. 6th, 1901.	—	R.
20	47	S.			Abdomin. hysterecto	Sept. 9th, 1901.	No.	R.
21	—	M.	—	—	Explorato laparotom	Sept. 10th, 1901.	No.	R.
22	27	S.	—	—	Hysterecto and ovarioty.	Oct. 8th, 1901.	No.	R.
23	45	M.	0	0	Hysterecto and ovarioty	Oct 10th, 1901.	Gauze and Keith's tube.	R.
24	56	M.	6	2	Panhysterecmy	Oct. 14th, 1901.	Gauze in vagina.	R.
25	38	M.	1	0	Appenda remove	Oct. 24th, 1901.	No.	R.
26	27	M.	3	1	Ovarian cy d dilated tu	Nov. 11th, 1901.	No	R.
27	44	M.	0	0	Abdomi hysterecty.	Nov. 18th, 1901.	No.	R.
28	31	M.	1	0	Appenda remove	Nov. 25th, 1901.	Keith's tube and gauze.	R.
29	39	M.	8	2	Ectopi pregnan	Nov. 26th, 1901.	Gauze.	D.
30	24	M.	0	0	Doubl ovarioto	Dec. 5th, 1901.	No.	R.
31	49	M.	8	2	Abdomi hysterecty.	Dec. 9th, 1901.	No.	R.
32	26	M.	0	0	Doub ovarioto	Dec. 11th, 1901.	No.	R.
33	68	M.	0	0	Ovarioto	Dec. 16th, 1901.	No.	R.
34	38	M.	0	0	Append remov	Jan. 1st, 1902.	No.	R.
35	28	M.	1	0	Ectopic pregnancy.	Jan. 9th, 1902.	No.	R
36	39	M.	1	4	Appendages removed.	Jan. 13th, 1902.	No.	R
37	39	M.	0	1	Abdominal hysterectomy.	Jan. 20th, 1902.	No.	R
38	29	M.	3	0	Appendages removed.	Jan. 23rd, 1902.	No.	R
39	38	M.	4	0	Appendages removed.	Jan. 30th, 1902.	No.	R
40	38	M.	0	0	Abdominal hysterectomy.	Feb. 3rd, 1902.	No.	D
41	44	M.	0	0	Abdominal hysterectomy.	Feb. 6th, 1902.	No.	R
42	48	S.	—	—	Ovariotomy (left).	Feb. 11th, 1902.	No.	R
43	29	M.	3	0	Ovariotomy (right).	Feb. 13th, 1902.	No.	R
44	29	M.	2	0	Ectopic pregnancy.	March 8th, 1902.	No.	R
45	33	M.	3	1	Double ovariotomy.	March 13th, 1902.	No.	R
46	45	S.	—	—	Hysterectomy and ovariotomy.	March 14th, 1902.	No.	R
47	46	M.	2	—	Abdominal hysterectomy.	March 15th, 1902.	No.	R
48	30†	S.	—	—	Myomectomy.	March 22nd, 1902.	No.	R
49	—	M.	0	0	Ectopic pregnancy.	March 26th, 1902.	No.	R
50	33	M.	3	—	Appendages removed.	April 9th, 1902.	No.	R
51	30	M.	2	—	Appendages removed.	April 16th, 1902.	No.	R
52	37	M.	—	—	Double ovariotomy.	April 21st, 1902.	No.	R
53	45	M.	8	3	Hysterectomy and ovariotomy.	April 22nd, 1902.	No.	R
54	62	M.	—	—	Panhysterectomy	May 1st, 1902.	Gauze in vagina.	D
55	48	M.	1	0	Ovariotomy (left).	May 2nd, 1902.	No.	R
56	43	M.	12	0	Ovariotomy and hysterectomy.	May 5th, 1902.	Gauze.	R
57	28	M.	3	0	Ectopic pregnancy and ovariotomy.	May 15th, 1902.	No.	
58	51	S.	—	—	Abdominal hysterectomy.	May 17th, 1902.	No.	D
59	41	M.	6	3	Ovariotomy (left).	May 19th, 1902.	No.	
60	31	M.	0	0	Double ovariotomy.	May 22nd, 1902.	No.	R
61	35	S.	—	—	Abdominal hysterectomy.	June 2nd, 1902.	No.	D
62	42	S.	—	—	Abdominal hysterectomy.	June 5th, 1902.	Gauze.	R
63	42	M.	—	—	Cæsarean section.	June 10th, 1902	No.	R
64	29	S.	—	—	Abdominal hysterectomy.	June 12th, 1902.	No.	R
65	32	M.	1	0	Appendages removed.	June 16th, 1902.	No.	R
66	77½	M.	0	0	Ovariotomy (left).	June 16th, 1902.	No.	R
67	—	M.	0	0	Double pyosalpinx.	June 18th, 1902.	Gauze.	R
68	49	M.	4	1	Abdominal hysterectomy.	June 24th, 1902.	No.	R
69	45	M.	1	0	Ovariotomy (right).	July 3rd, 1902.	No.	R
70	35	M.	1	0	Ovariotomy (right).	July 3rd, 1902.	No.	
71	41	M.	0	0	Abdominal hysterectomy.	August 4th, 1902.	No.	R

* R = recovery; D = death.

† About.

TABLE GIVING PARTICULARS OF 300 CONSECUTIVE LAPAROTOMIES—(*Continued*).

No.	Age.	Married or single.	Number of children.	Number of miscarriages.	Nature or cause of operation.	Date of operation.	Drainage.	Result.*
2	22	S.	—	—	Appendages removed.	August 7th, 1902.	No.	R.
3	36	M.	1	1	Tubo-ovarian cyst.	August 8th, 1902.	Gauze.	R.
4	37	M.	4	0	Ovary and tube removed.	August 14th, 1902.	No.	R.
5	—	M.	—	—	*Appendages* removed.	August 18th, 1902.	Gauze.	D.
76	31	M.	0	1	Appendages removed.	August 21st, 1902.	No.	R.
77	32	M.	0	0	Abdominal hysterectomy.	Sept. 11th, 1902.	No.	R.
78	31	M.	5	1	Ovariotomy (double).	Sept. 13th, 1902.	No.	R.
79	55	S.	—	—	Panhysterectomy	Sept. 15th, 1902.	Gauze through vagina.	R.
80	41	M.	8	0	Ovariotomy (left).	Sept. 18th, 1902.	No.	R.
81	52	S.	—	—	Abdominal hysterectomy.	Sept. 18th, 1902.	No.	R.
82	25	M.	1	0	Ovariotomy (right).	Sept. 23rd, 1902.	No.	R.
83	39	M.	2	3	Ectopic pregnancy.	Sept. 27th, 1902.	No.	R.
84	32	M.	2	?	Ovarian tumour and appendages removed.	Oct. 7th, 1902.	No.	R.
85	37	S.	—	—	Double pyosalpinx.	Oct 9th, 1902.	No.	R.
86	63	M.	0	0	Panhysterectomy	Oct. 20th, 1902.	Gauze in vagina.	D.
87	36	M.	2	0	Hysterectomy and ovariotomy.	Oct. 30th, 1902.	No.	R.
88	37	S.	—	—	Appendages removed.	Nov. 6th, 1902.	No.	R.
89	35	M.	0	0	Cæsarean section.	Nov. 8th, 1902.	No.	R.
90	36	S.	—	—	Double pyosalpinx.	Nov. 24th, 1902.	Gauze.	R.
91	29	M.	0	0	Ectopic pregnancy.	Nov. 25th, 1902.	No.	R.
92	43	S.	—	—	Panhysterectomy	Nov. 27th, 1902.	Gauze in vagina.	R.
93	28	M.	0	0	Double pyosalpinx.	Dec. 4th, 1902.	Gauze.	R.
94	29	M.	1	2	Ectopic pregnancy.	Dec. 8th, 1902.	No.	R.
95	44	M.	4	—	Double ovariotomy.	Dec. 9th, 1902.	No.	R.
96	35	S.	—	—	Double ovariotomy.	Dec. 11th, 1902.	No.	R.
97	43	M.	1	1	Abdominal hysterectomy.	Dec. 18th, 1902.	No.	R.
98	48	M.	0	3	Appendages removed and hysterectomy.	Dec. 22nd, 1902.	—	R.
99	56	M.	4	0	Ovariotomy (right).	Jan. 1st, 1903.	No.	R.
100	22	M.	0	0	Ectopic pregnancy.	Jan. 3rd, 1903.	No.	R.
101	26	—	—	—	Inflamed appendages.	Jan 4th, 1903.	Gauze.	R.
102	23	S.	—	—	Appendages removed.	Jan. 5th, 1903.	No.	R.
103	27	M.	1	0	Appendages removed.	Jan. 12th, 1903.	No.	R.
104	36	M.	1	0	Appendages removed.	Jan. 15th, 1903.	No.	R.
105	44	W ‡	4	4	Double ovariotomy.	Jan. 21st, 1903.	Gauze.	R.
106	45	S.	—	—	*Abdominal* hysterectomy.	Jan. 22nd, 1903.	No.	R.
107	23	M.	—	—	Exploratory laparotomy.	Jan. 25th, 1903.	No.	D.
108	26	M.	1	0	Ectopic pregnancy.	Jan. 26th, 1903.	No.	R.
109	43	M.	0	0	Abdominal hysterectomy.	Feb. 3rd, 1903.	No.	R.
110	35	M.	2	0	Appendages removed.	Feb. 5th, 1903.	No.	R.
111	—	M.	0	0	Appendages removed.	Feb. 7th, 1903.	No.	R.
112	37	—	—	—	Tubal abortion.	Feb. 11th, 1903.	No.	R.
113	55	S.	—	—	Abdominal panhysterectomy.	Feb. 19th, 1903.	Gauze in vagina.	R.
114	66	S.	—	—	Ovariotomy (right).	Feb. 26th, 1903.	No.	R.
115	28	M.	3	0	Double ovariotomy.	March 9th, 1903.	No.	R.
116	—	M.	—	—	Ovariotomy (right).	March 9th, 1903.	No.	R.
117	25	M.	—	—	Cæsarean section.	March 12th, 1903.	No.	R.
118	50	—	—	—	Ovariotomy (left).	March 12th, 1903.	Gauze.	R.
119	38	—	—	—	Tubo-ovarian cyst on each side.	March 16th, 1903.	No.	R.
120	45	—	—	—	Exploratory laparotomy.	March 16th, 1903.	Gauze.	R.
121	37	M.	—	—	Appendages removed.	March 17th, 1903.	No.	R.
122	—	—	—	—	Exploratory laparotomy.	March 19th, 1903.	No.	R.
123	53	S.	—	—	Abdominal hysterectomy.	March 26th, 1903.	No.	R.
124	46	M.	6	1	Ovariotomy (right).	March 31st, 1903.	No.	R.
125	37	M.	1	3	Appendages removed.	April 3rd, 1903.	No.	R.
126	35	M.	1	0	*Abdominal* hysterectomy.	*April 11th,* 1903.	No.	R.
127	—	S.	—	—	Abdominal hysterectomy.	April 16th, 1903.	Gauze in vagina.	R.
128	38	S.	—	—	Abdominal hysterectomy.	April 18th, [illegible]	No.	R.
129	35	M.	3	0	Ovariotomy (right).	April [illegible], 1903.	No.	R.
130	33	M.	4	—	Abdominal hysterectomy.	April 30th, 1903.	No.	R.
131	33	M.	7	—	Ovariotomy (double).	May 4th, 1903.	No.	R.
132	39	M.	—	—	Ovariotomy (left).	May 7th, 1903.	No.	R.
133	34	M.	0	0	Ovariotomy (left).	May 11th, 1903.	No.	R.
134	37	M.	1	0	Ectopic pregnancy.	May 11th, 1903.	No.	R.
135	50	M.	0	0	Double ovariotomy.	May 25th, 1903.	No.	R.
136	49	S.	—	—	Abdominal hysterectomy.	May 27th, 1903.	No.	R.
137	31	M.	—	—	Ovarian tumour and appendages removed.	June 3rd, 1903.	Gauze.	R.
138	28	S.	—	—	Double ovariotomy.	June 6th, 1903.	No.	R.
139	52	S.	—	—	Abdominal panhysterectomy.	June 9th, 1903.	Gauze per vaginam.	R.
140	42	S.	—	—	Double ovariotomy.	June 10th, 1903.	No.	R.
141	43	S.	—	—	Abdominal hysterectomy.	June 16th, 1903.	No.	R.
142	42	S.	—	—	Abdominal hysterectomy.	June 18th, 1903.	No.	R.

* R = recovery; D = death. ‡ Widow.

* R = recovery; D = death.

TABLE GIVING PARTICULARS OF 300 CONSECUTIVE LAPAROTOMIES—(*Continued*).

No.	Age.	Married or single.	Number of children.	Number of miscarriages.	Nature or cause of operation.	Date of operation.	Drainage.	Result.*
143	50	M.	—	—	Abdominal hysterectomy.	June 19th, 1903.	No.	R.
144	48	M.	5	?	Abdominal hysterectomy.	June 25th, 1903.	No.	R.
145	37	M.	1	2	Double *ovariotomy.*	July 2nd, 1903.	No.	R.
146	34	M.	0	0	Ovariotomy (right).	July 2nd, 1903.	No.	R.
147	41	M.	3	0	Abdominal hysterectomy.	July 9th, 1903.	No.	R.
148	50	S.	—	—	Abdominal hysterectomy.	July 9th, 1903.	No.	R.
149	23	S.	—	—	Ectopic pregnancy.	July 9th, 1903.	No.	R.
150	34	S.	—	—	Hysterectomy and ovariotomy.	July 10th, 1903.	No.	R.
151	35	M.	1	1	Appendages removed.	July 10th, 1903.	No.	R.
152	45	M.	5	0	Hysterectomy and appendages removed.	July 16th, 1903.	No.	R.
153	28	M.	1	—	Cæsarean section.	July 19th, 1903.	No.	R.
154	38	M.	0	0	Abdominal hysterectomy.	July 21st, 1903.	No.	R.
155	32	M.	2	1	Appendages removed.	July 24th, 1903.	No.	R.
156	40	S.	0	0	Panhysterectomy	July 28th, 1903.	Gauze in vagina.	R.
157	40	M.	3	1	Ovariotomy (double).	August 3rd, 1903.	No.	R.
158	45	S.	—	—	Exploratory laparotomy.	Sept. 22nd, 1903.	Gauze.	D.
159	28	S.	—	—	Double ovariotomy.	Sept. 24th, 1903.	No.	R.
160	44	M.	0	?	Abdominal hysterectomy.	Sept. 24th, 1903.	No.	R.
161	34	M.	5	0	Ectopic pregnancy.	Sept. 25th, 1903.	No.	R.
162	51	M.	6	0	Hysterectomy and appendages removed.	Sept. 25th, 1903.	No.	R.
163	42	M.	4	2	Abdominal hysterectomy.	Sept. 29th, 1903.	No.	R.
164	29	M.	2	0	Ectopic pregnancy.	Sept. 30th, 1903.	No.	R.
165	41	M.	1	0	Hysteropexy.	Oct. 1st, 1903.	No.	R.
166	51	M.	6	0	Abdominal hysterectomy.	Oct. 6th, 1903.	No.	D.
167	40	M.	0	0	Appendages removed.	Oct. 7th, 1903.	Gauze.	R.
168	61	M.	5	1	Abdominal hysterectomy.	Oct. 10th, 1903.	No.	R.
169	34	S.	—	—	Abdominal hysterectomy.	Oct. 13th, 1903.	Gauze.	R.
170	42	M.	10	0	Ovariotomy (right).	Oct. 16th, 1903.	No.	R.
171	47	M.	6	1	Ovariotomy (left).	Oct. 22nd, 1903.	No.	R.
172	31	M.	6	0	Ectopic pregnancy.	Oct. 23rd, 1903.	No.	R.
173	64	M.	13	0	Ovariotomy (right).	Oct. 23rd, 1903.	No.	R.
174	36	M.	3	1	Hysterectomy and appendages removed.	Oct. 27th, 1903.	No.	R.
175	37	S.	—	—	Ovariotomy (double).	Oct. 29th, 1903.	No.	R.
176	31	M.	0	0	*Hysteropexy.*	Oct. 29th, 1903.	No.	R.
177	26	M.	0	0	Appendages removed.	Oct. 30th, 1903.	No.	R.
178	44	M.	0	0	Appendages removed.	Nov. 3rd, 1903.	No.	R.

* R = recovery; D = death.

No.	Age.	Married or single.	Number of children.	Number of miscarriages.	Nature or cause of operation.	Date of operation.	Drainage.	Result.*
179	42	M.	0	0	Ovariotomy (left).	Nov. 5th, 1903.	No.	R.
180	31	S.	—	—	Abdominal hysterectomy.	Nov. 5th, 1903.	No.	R.
181	50	M.	3	0	Ovariotomy (left).	Nov. 6th, 1903.	No.	R.
182	28	S.	—	—	Ovariotomy (left).	Nov. 6th, 1903.	No.	R.
183	27	S.	—	—	Appendages removed.	Nov. 10th, 1903.	Gauze.	D
184	29	M.	1	0	Ovariotomy (left).	Nov. 19th, 1903.	No.	R
185	30	M.	0	0	Ectopic pregnancy.	Nov. 20th, 1903.	No.	R
186	24	S.	—	—	Appendages removed.	Nov. 20th, 1903.	No.	R
187	36	M.	0	0	Appendages removed.	Nov. 21st, 1903.	No.	R
188	48	S.	—	—	Abdominal hysterectomy.	Nov. 23rd, 1903.	No.	D
189	27	M.	3	0	Ectopic pregnancy.	Nov. 24th, 1903.	No.	[illegible]
190	44	M.	1	?	Abdominal hysterectomy.	Nov. 24th, 1903.	No.	[illegible]
191	21	M.§	0		Appendages removed.	Nov. 26th, 1903.	No.	[illegible]
192	65	M.	2	0	Double ovariotomy.	Nov. 27th, 1903.	No.	[illegible]
193	39	M.	8	0	Pyosalpinx, hysterectomy.	Nov. 27th, 1903.	Gauze.	[illegible]
194	45	M.	0	0	Abdominal hysterectomy.	Dec. 1st, 1903.	No.	[illegible]
195	—	M.	—	—	Appendages removed.	Dec. 3rd, 1903.	Gauze.	[illegible]
196	26	S.	1	0	Double ovariotomy.	Dec. 4th, 1903.	No.	[illegible]
197	34	S.	—	—	Myomectomy.	Dec. 4th, 1903.	No.	[illegible]
198	23	M.	0	0	Cæsarean section.	Dec. 5th, 1903.	No.	[illegible]
199	37	M.	1	1	Ectopic pregnancy.	Dec. 6th, 1903.	No.	[illegible]
200	20	S.	—	—	Ovariotomy (right).	Dec. 8th, 1903.	No.	[illegible]
201	39	M.	5	1	Ovariotomy (left).	Dec. 11th, 1903.	No.	[illegible]
202	51	M.	10	2	Ovariotomy and salpingectomy.	Dec. 11th, 1903.	No.	[illegible]
203	21	M.	0	0	Ovarian tumour and appendages removed.	Dec. 15th, 1903.	No.	[illegible]
204	42‖	S.	—	—	Hysterectomy and ovariotomy.	Dec. 17th, 1903.	No.	[illegible]
205	37	M.	3	0	*Appendages* removed.	Dec. 17th, 1903.	No.	[illegible]
206	35	S.	—	—	Ovariotomy (double).	Dec. 18th, 1903.	No.	[illegible]
207	22	S.	—	—	Removal of vermiform appendix.	Jan. 1st, 1904.	Gauze.	[illegible]
208	42	M.	1	0	Exploratory laparotomy.	Jan. 2nd, 1904.	No.	[illegible]
209	26	M.		0	Hysteropexy.	Jan. 7th, 1904.	No.	[illegible]
210	25	S.	—	—	Ovarian tumour and appendages removed.	Jan. 7th, 1904.	No.	[illegible]
211	—	M.	—	—	Ectopic pregnancy.	Jan. 12th, 1904.	No.	[illegible]
212	44	M.	2	0	Abdominal hysterectomy.	Jan. 13th, 1904.	No.	[illegible]
213	26	M.	0	0	Double hydrosalpinx.	*Jan. 14th,* 1904.	*No.*	[illegible]
214	43	M.	6	?	Abdominal hysterectomy.	Jan. 18th, 1904.	No.	[illegible]

* R = recovery; D = death. § Four years. ‖ Nearly.

TABLE GIVING PARTICULARS OF 300 CONSECUTIVE LAPAROTOMIES—(*Continued*).

No.	Age.	Married or single.	Number of children.	Number of miscarriages.	Nature or cause of operation.	Date of operation.	Drainage.	Result.*
215	73¶	M**	5	2	Ovariotomy (double).	Jan. 18th, 1904.	No.	R.
216	25	M.	0	0	Ectopic pregnancy.	Jan. 19th, 1904.	No.	R.
217	45	M**	4	3	Ovariotomy (double).	Jan. 21st, 1904.	No.	R.
218	26	M.	2††	0	Cæsarean section.	Jan. 27th, 1904.	No.	D.
219	27	M.	3	0	Ovariotomy (right).	Jan. 28th, 1904.	No.	R.
220	30	M.	3	0	Ectopic pregnancy.	Jan. 29th, 1904.	Gauze.	R.
221	30	M.	4	1	Ovariotomy (right).	Jan. 30th, 1904.	No.	R.
222	45	M.	1	0	Abdominal hysterectomy.	Feb. 3rd, 1904.	No.	R.
223	49	M.	3	0	Abdominal hysterectomy.	Feb. 9th, 1904.	No.	R.
224	45	M.	0	0	Panhysterectomy	Feb. 23rd, 1904.	Gauze in vagina.	R.
225	35	S.	—	—	Ovariotomy (left).	Feb. 24th, 1904.	No.	R.
226	32	S.	—	—	Abdominal hysterectomy.	Feb. 25th, 1904.	No.	R.
227	23	M.	2	0	Appendages removed.	Feb. 26th, 1904.	Gauze.	R.
228	34	M.	3	0	Hysteropexy.	Feb. 29th, 1904.	No.	R.
229	39	M.	0	0	Ovarian tumour and appendages removed.	March 1st, 1904.	No.	R.
230	30	M.	4	0	Ovariotomy (left).	March 1st, 1904.	No.	R.
231	26	M.	2	0	Ovariotomy (right.)	March 3rd, 1904.	No.	R.
232	49	M.	0	0	Ovariotomy (right).	March 4th, 1904.	No.	R.
233	23	S.	—	—	Ovariotomy (right).	March 10th, 1904.	No.	R.
234	28	M.	4	1	Ectopic pregnancy.	March 11th, 1904.	No.	R.
235	32	M.	1	2	Ectopic pregnancy.	March 17th, 1904.	No.	R.
236	58	M.	3	0	Panhysterectomy	March 18th, 1904.	No.	D.
237	34	M.	5	1	Ectopic pregnancy.	March 22nd, 1904.	No.	R.
238	34	M.	3	1	Cæsarean section.	March 31st, 1904.	No.	R.
239	35	M.	0	0	Ovariotomy (left).	April 5th, 1904.	Gauze.	R.
240	42	M.	8	3	Abdominal hysterectomy.	April 5th, 1904.	No.	R.
241	36	S.	—	—	Abdominal hysterectomy.	April 7th, 1904.	No.	R.
242	40	M.	1	0	Ectopic pregnancy.	April 9th, 1904.	No.	R.
243	25	M.	0	0	Ovariotomy (right).	April 12th, 1904.	No.	R.
244	39	M.	1	0	Ovariotomy (right).	April 14th, 1904.	No.	R.
245	37	M.	4	1	Ovariotomy (left).	April 19th, 1904.	No.	R.
246	34	S.	—	—	Abdominal hysterectomy.	April 22nd, 1904.	No.	R.
247	31	M.	1	0	Ectopic pregnancy.	April 22nd, 1904.	No.	R.
248	26	M.	0	1	Appendages removed.	April 22nd, 1904.	Gauze.	D.
249	37	S.	—	—	Ovariotomy (left).	April 28th, 1904.	No.	R.
250	25	M.	0	0	Ovarian tumour and appendages removed.	April 29th, 1904.	Gauze.	R.
251	26	S.	—	—	Hysteropexy.	May 3rd, 1904.	No.	R.
252	24	M.		1	Ectopic pregnancy.	May 5th, 1904.	No.	R.
253	33	M.	1	1	Ectopic pregnancy.	May 5th, 1904.	No.	R.
254	43	M.	0	1	Ovariotomy (left).	May 6th, 1904.	No.	R.
255	55	M.	11	2	Ovariotomy (right).	May 6th, 1904.	No.	R.
256	42	M.	2	0	Appendages removed.	May 10th, 1904.	Gauze.	D.
257	58	M.	5	1	Ovariotomy (left).	May 10th, 1904.	No.	R.
258	28	M.	1	1	Cæsarean section.	May 12th, 1904.	No.	R.
259	44	M.	1	0	Abdominal hysterectomy.	May 17th, 1904.	No.	R.
260	42	M.	1	0	Abdominal hysterectomy.	May 21st, 1904.	No.	R.
261	23	M.	2	0	Ovariotomy (double).	May 24th, 1904.	No.	R.
262	50	M.	0	0	Ovariotomy (left).	May 26th, 1904.	No.	R.
263	43	M.	3	1	Calcified tumour removed.	May 27th, 1904.	No.	R.
264	21	M.	0	0	Ovariotomy (right).	May 27th, 1904.	No.	R.
265	30	M.	1	0	Appendages removed.	May 27th, 1904.	No.	R.
266	40	M.	0	1	Abdominal hysterectomy.	May 31st, 1904.	No.	R.
267	53	M.	1	0	Exploratory laparotomy.	June 2nd, 1904.	No.	D.
268	42	M.	0	0	Tubo-ovarian cyst.	June 4th, 1904.	Gauze.	R.
269	29	M.	2	1	Ovariotomy (right).	June 7th, 1904.	No.	R.
270	31	S.	—	—	Ovariotomy and hysterectomy.	June 9th, 1904.	No.	R.
271	38	M.	5	2	Ectopic pregnancy.	June 13th, 1904.	No.	R.
272	35	M.	4	0	Hysteropexy.	June 14th, 1904.	No.	R.
273	26	M.	1	2	Ovariotomy (double).	June 14th, 1904.	No.	R.
274	27	M.	3	1	Ovariotomy (double).	June 15th, 1904.	No.	R.
275	60	S.	—	—	Ovarian tumour (partly removed previously).	June 16th, 1904.	Gauze.	R.
276	60	M.	1	0	Ovariotomy (right).	June 17th, 1904.	No.	R.
277	28	M.	1	0	Tubo-ovarian cyst.	June 17th, 1904.	No.	R.
278	46	M.	1	0	Abdominal hysterectomy.	June 17th, 1904.	No.	R.
279	40	M.	2	0	Myomectomy.	June 21st, 1904.	No.	R.
280	24	M.	0	0	Laparotomy for old sinus.	June 24th, 1904.	Gauze and indiarubber tube.	D.
281	21	M.	1	0	Ectopic pregnancy.	June 30th, 1904.	No.	R.
282	43	S.	—	—	Tube and ovary removed.	July 1st, 1904.	No.	R.
283	50	S.	—	—	Abdominal hysterectomy.	July 1st, 1904.	No.	R.
284	26	S.	—	—	Abdominal hysterectomy.	July 8th, 1904.	No.	R.
285	50	M.	1	0	Ovariotomy (left).	July 11th, 1904.	No.	R.
286	29	S.	—	—	Abdominal hysterectomy.	July 14th, 1904.	No.	R.

* R = recovery; D = death.

¶ On Feb. 14th. ** Twice. †† Both died in the birth.

* R = recovery; D = death.

TABLE GIVING PARTICULARS OF 300 CONSECUTIVE LAPAROTOMIES—(*Continued*).

No.	Age.	Married or single.	Number of children.	Number of miscarriages.	Nature or cause of operation.	Date of operation.	Drainage.	Result.*
287	70	M.	0	0	Ovariotomy (left).	July 22nd, 1904.	No.	R.
288	25	M.	2	0	Ovariotomy (left).	July 22nd, 1904.	No.	R.
289	35	S.	—	—	Abdominal hysterectomy.	July 22nd, 1904.	No.	R.
290	50	M.	4	0	Exploratory laparotomy.	July 26th, 1904.	No.	R.
291	44	S.	—	—	Abdominal hysterectomy.	July 28th, 1904	No.	R.
292	43	S.	—	—	Abdominal hysterectomy.	August 4th, 1904.	No.	R.
293	56	M.	3	1	Ovariotomy (right).	August 5th, 1904.	No.	R.
294	54	M.	5	1	Ovariotomy (double).	August 5th, 1904.	No.	R.
295	38	M.	1	0	Ovariotomy and hysterectomy.	August 8th, 1904.	No.	R.
296	43	M.	2	0	Ovariotomy (right).	August 9th, 1904.	No.	R.
297	26	M.	4	1	Ovariotomy (left).	August 9th, 1904.	No.	R.
298	30	M.	4	3	Ovariotomy (right).	August 11th, 1904.	No.	R.
299	30	M.	2	0	Appendages removed.	August 12th, 1904.	No.	R.
300	59	M.	4	3	Exploratory laparotomy.	Oct 14th, 1904.	No.	R.

* R = recovery.

think, to infection from the rectum or sigmoid flexure, which had been laid bare in parts. The numbers of the 73 cases in the accompanying table are 5, 9, 13, 15, 17, 20, 22, 27, 31, 37, 40, 41, 46, 47, 53, 58, 61, 62, 64, 71, 77, 81, 87, 97, 98, 106, 109, 123, 126, 127, 128, 130, 136, 141, 142, 143, 144, 147, 148, 150, 152, 154, 160, 162, 163, 166, 168, 169, 180, 190, 194, 204, 212, 214, 222, 223, 224, 226, 240, 241, 246, 259, 260, 266, 270, 278, 283, 284, 286, 289, 291, 292, and 295.

III. *Removal of the uterine appendages for chronic inflammation.*—In this group there are 47 cases with four deaths. 15 of the 47 were cases of pyosalpinx. The four fatal cases were all cases of pyosalpinx. In the table the 47 cases are Nos. 2, 7, 11, 25, 28, 34, 36, 38, 39, 50, 51, 65, 67, 72, 74, 75, 76, 85, 88, 90, 93, 101, 102, 103, 104, 110, 111, 121, 125, 151, 155, 167, 177, 178, 183, 186, 187, 191, 195, 205, 213, 227, 248, 256, 265, 282, and 299.

IV. *Laparotomy for ectopic pregnancy.*—There are 33 cases of this kind in my list, with a mortality of one. Seven were emergency operations and in four of these the patient was so collapsed that intravenous injection of salt solution was employed as the abdominal section was begun. These all recovered. In three of the cases (Nos. 164, 235, and 237) the patient had been previously operated on for the same condition on the opposite side. The case that died (No. 29) was a patient suffering from peritonitis with a high temperature at the time of the operation. I used an iodoform gauze drain, which I now think was unnecessary, and it may indeed have had something to do with the fatal result. I never drain these cases now. The 33 cases in the table are Nos. 16, 19, 29, 35, 44, 49, 57, 83, 91, 94, 100, 108, 112, 134, 149, 161, 164, 172, 185, 189, 199, 211, 216, 220, 234, 235, 237, 242, 247, 252, 253, 271, and 281.

V. *Abdominal hysterectomy for conditions other than fibroids.*—There are 17 cases in this class. The numbers in the table are 6, 18, 23, 24, 54, 56, 68, 79, 86, 92, 113, 139, 156, 174, 188, 193, and 236. Six of these patients died. No. 6 was an emergency abdominal hysterectomy for hæmatometra on account of hæmorrhage during an attempt to evacuate the retained blood per vaginam. No. 54 was an abdominal hysterectomy for carcinoma of the body of the uterus in a patient, aged 62, with chronic Bright's disease, bronchitis, and emphysema. The patient was very stout and on account of the state of her chest could not lie down. Th wound ultimately broke down in its entire extent and th patient died a month after the operation. No. 86 was a abdominal panhysterectomy for carcinoma of the body o the uterus in a feeble patient, 63 years of age. She died fro embolism on the fourth day. No. 188.—In this case ther was a malignant mass growing from the peritoneal surfac of the uterus with secondary infiltration of the broad ligaments and hydroperitoneum. No. 193 was a case in whic hysterectomy became necessary during an operation fo removal of a pyosalpinx. No. 236 was a case of carcinoma of the body of the uterus in which a prolonged attempt was first made to remove the uterus by vaginal hysterectomy. As this proved impossible abdominal hysterectomy was performed as an emergency operation

VI. *Exploratory laparotomies.*—There are 14 cases of this kind in the table with a mortality of five. In seven (Nos. 12, 21, 122, 208, 267, 290, and 300) the condition found was malignant. Two of these patients died. There was one case (No. 107) which proved to be intestinal obstruction, one case (No. 158) of large old fæcal concretion which had caused enormous chronic dilatation of the sigmoid flexure, and one case (No. 280) where an operation was undertaken for an abdominal sinus freely discharging pus. These three patients died. There was one case of appendicitis (No. 207); one case in which adhesions about the tubes and ovaries were separated and hysteropexy performed (No. 165); one case in which a calcified tumour, unconnected with the uterus or ovaries, was removed from Douglas's pouch (No. 263); and one case in which pus was let out after separating intestinal and omental adhesions (No. 120); these patients all recovered.

VII. *Cæsarean section.*—There are eight cases of this operation in my list; only one (No. 218) proving fatal, a neglected case in which, unknown to me, the patient had been in labour four days. In two cases the operation was for obstruction due to fibroids (Nos. 63 and 89). In six cases the operation was on account of contracted pelvis (Nos. 117, 153, 198, 218, 238, and 258). Three of the patients were in labour at the time of the operation. Five were operated on before labour had commenced.

VIII. *Myomectomy.*—There are only three cases of this operation in my list (Nos. 48, 197, and 279). In No. 48 the patient was five months pregnant at the time of the operation. The pregnancy was not interrupted. In No. 197 there was a subperitoneal fibroid with a twisted pedicle, and in No. 279 there was a subperitoneal fibroid weighing 12 pounds with extensive adhesions (about 12 inches) to small intestine and mesentery. These patients all recovered.

IX. *Hysteropexy.*—There are five cases of this operation in the list—Nos. 176, 209, 228, 251, and 272, all of which recovered.

Summary.

—	Number of cases.	Number of deaths.
I. Ovariotomy	100	0
II. Abdominal hysterectomy for fibroids, including panhysterectomy for fibroids ...	73	4
III. Removal of uterine appendages for chronic inflammation	47	4
IV. Laparotomy for ectopic pregnancy ...	33	1
V. Abdominal hysterectomy for conditions other than fibroids	17	6
VI. Exploratory laparotomy	14	5
VII. Cæsarean section	8	1
VIII. Myomectomy	3	0
IX. Hysteropexy	5	0
Totals	300	21

That is to say, there was a mortality over the whole series of 300 cases of exactly 7 per cent. The series is strictly consecutive. It includes every case in which for whatever reason I have opened the abdomen during the period under consideration. Nor did I refuse to operate on any case because the operation seemed likely to be especially difficult or dangerous. This will, I think, be abundantly clear on an inspection of the particulars of the cases given in the table. I therefore regard the death-rate as being nearly if not quite as low as it should be.

It will be found that the cases of ovariotomy, ot abdominal hysterectomy for fibroids, of removal of the uterine appendages for chronic inflammation, of laparotomy for ectopic pregnancy, of Cæsarean section, of myomectomy, and of hysteropexy are 269 in number. These groups (I., II., III., IV., VII., VIII., and IX.) comprise by far the largest proportion of the abdominal sections that come under the care of the gynæcologist. In these 269 operations there were ten deaths, a general mortality for the groups in question of 3·7 per cent

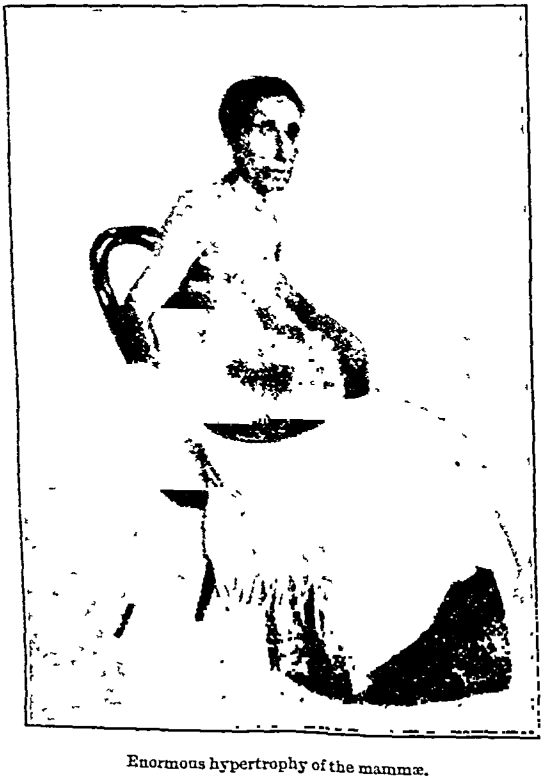
Remarks upon all these cases, which formed part of the tables when the paper was read before the Medical Society of London, will be published in the concluding part.

(To be concluded.)

A CASE OF HYPERTROPHY OF THE MAMMARY GLANDS.

By Dr. JAIME DARQUIER,
SENIOR PHYSICIAN, PIROVANO HOSPITAL, BUENOS AYRES.

The patient, a woman, 35 years of age, came to the hospital complaining of the trouble that the great enlarge-ent of the mammæ gave her, stating that the illness com-enced about 18 months before, the right breast swelling st and soon after the other. The increase was slow, ithout any pain, and her general state was normal. The xamination of the patient showed that all the organs ere healthy but the mammæ were enormously increased in ize, hanging down like saddle bags and reaching the umbilical line. The transverse diameter of the right, the larger, was 46 centimetres and its circumference 94. The nipple was completely gone and there were abrasions due to friction. The skin was very thick but not adherent to the deeper layers and the structure had the consistency of a normal breast; in the axilla of the same side there were three or four hypertrophied glands. The left breast was smaller than the right, its diameter being 42 centimetres and its circumference 85 centimetres; there were no abrasions, but as on the right side a few glands were found in the axilla, but smaller. So as to form an idea of the volume of the mammæ they were submerged into water, the right displacing 15 litres and the left 11 litres. Four grammes of iodide of potassium per day and compression of the breast were prescribed, but as at the end of two weeks there was no improvement to be seen it was decided to operate on her right breast, the operation being in charge of Dr. Emina. It was successfully performed by the usual methods, the glands in the axilla being also removed; the actual weight of the breast proved to be 13 kilogrammes. In the operation, which the patient endured very well, about a litre of blood was lost. The left breast at once decreased somewhat in size, but as it still continued to trouble the patient she asked that it should also be removed. This second operation was performed about a month after the first with the same good results; the actual weight of this breast was 10 kilogrammes. One month after this second operation the patient left the hospital completely recovered.



Enormous hypertrophy of the mammæ.

The microscopical examination by Dr. Fernandez showed that the tissue was formed of fibrous meshes with few cells and a good amount of vessels with thick fibrous walls. The glandular acini were atrophied by compression and only a few surrounded by fibrous tissue were healthy. The pathological diagnosis was as follows: chronic fibrous mammitis (Delbet), and diffuse fibroma of the mammæ (Duplay).

The majority of authors place this condition among the mild tumours of the breast but Delbet takes exception to this and classifies it as an acquired anomaly closely connected with the physiological development of the organ. In Dr. Puech's table the weight of such breasts varies from 4 to 15 kilogrammes. In a case treated by Billroth one of the breasts measured 68 centimetres in circumference and the other 65 centimetres. Exceptionally, they may reach almost incredible weights, as in the case treated by Dr Durston, in which one of the breasts weighed 30 kilogrammes. Delbet states that the skin of the breast is not thickened or adherent to the neighbouring parts; other authors affirm that the skin gets thick and hard, this being so in our case. Authors also differ as to the constitution of the hypertrophied tissue; Duplay states that the predominant element is the connective tissue which by its development greatly modifies the glandular tissue, destroying its functions, and for this reason calls it diffuse fibroma of the mammæ. Delbet, as stated, opines that it is a simple hypertrophy and that the predominance of one or the other of the elements is only due to the structure of the gland at the time the illness begins. If this happens during puberty the connective tissue is predominant, if during pregnancy the glandular. In our case the microscopical examination showed a great predominance of the connective element with atrophy of the glandular tissue, perfectly in accord with Duplay. The genesis of this condition is not well known; Duplay states that it occurs generally in women between 30 and 40 years of age; Billroth says that it is observed in an earlier age, a short time after menstruation appears, this opinion being also shared by Delbet. The hypertrophy of the breast generally begins in a slow form, without pain, exceptionally in an acute way, with fever (acute hypertrophy of Fingerhut); the increase may occur very rapidly, in one night (Durston, Quenu). Generally one of the breasts is attacked first and acquires the greater size. With the development of the illness the breasts are deformed and hang down as saddle bags, as the accompanying illustration clearly shows.

The diagnosis is unmistakeable and although in the present case there were glands in the axilla the fact of both breasts being attacked at the time of the illness excludes the probability of the condition being one of cancer in the strict sense of the term. It should be noted, however, that the glandular infection in our case could be accounted for by the abrasions on the right side only, on the left there was no alteration of the skin. On the other hand, there was some connexion between the size of the glands and the hypertrophy; on the left side with less hypertrophy the glands were smaller and after being operated on the left glands decreased in size. It is worth mentioning that in cases of such hypertrophy pregnancy helps to augment it very much. It is true that the mammary hypertrophy may remain stationary, but cases may be fatal, death occurring by a sort of marasmus or by local complications, gangrene, large abscess, &c. The prognosis is always, therefore, serious, and the treatment, seeing the poor results of medicaments, if the volume of the hypertrophy is great, is to remove the organ, a course that has given such good results in the present instance.

Buenos Ayres.

A SPORADIC CASE OF CEREBRO-SPINAL MENINGITIS.

BY J. RUPERT COLLINS, M.D., B.CH. DUB.

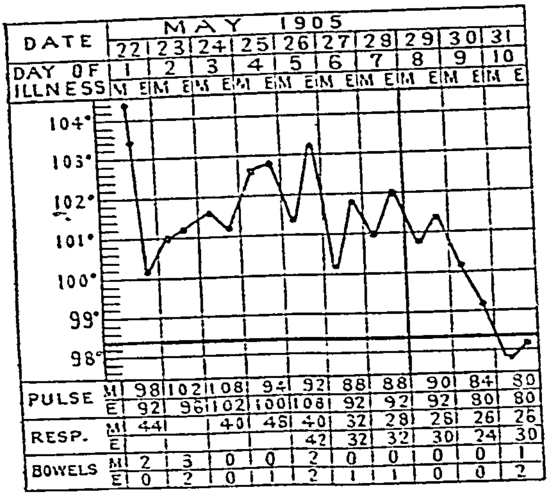
INASMUCH as it is only from the aggregate of individual cases of any disease that we are able to arrive at a correct estimate of it as a pathological entity, it is perhaps well when any types occur of a disease which is but seldom seen that they should be recorded. For this reason I shall now try to describe faithfully and clearly a case of cerebro-spinal meningitis which has occurred in Cheltenham, the first example of the disease in this town.

The patient was a girl, aged 13 years, whose father keeps a shop in which home and foreign birds but no quadrupeds of any description form the stock-in-trade. She was a fair, well-developed girl of a good constitution and had never suffered from any illness beyond having at times slight rheumatic pains in her knees and ankles, for which, however, she had never seen a medical man. Intellectually she was unusually bright and had acted as a teacher's help at school. On Sunday, May 21st, she felt quite well and went to afternoon school and church as usual. After church she went to a friend's house to supper and then for the first time complained of intense cold and sat shivering over the fire. She refused cake and sweets when offered her but drank some tea. On her return home, as she complained of severe frontal headache and "feeling bad," her mother gave her a small dose of antifebrin. She went to bed and slept quietly until the morning. At 9 A.M. she was given some Epsom salts but refused her breakfast and again went to sleep. At 12 noon her mother found her lying unconscious on the bed, having passed urine and fæces under her. At 1 P.M I saw the girl and found her unconscious, lying upon her left side. Her face was very pale, the mouth was wide open, the tongue was dry and very foul, and the breath was extremely fœtid. The pupils were small and equal in size. The respirations were shallow, 48 to the minute; the pulse was weak, 98 in frequency; and the temperature was 104·4° F. There was no sign of any injury on the head or body nor could I find evidence of any local septic process whatever. A few hours later she passed a large motion containing numerous currants. At 6 P.M. the pulse and respiration were better but she was still unconscious. She now vomited what was apparently her Sunday's dinner in an undigested condition. At 10 P.M. she was partially conscious, very restless, answered when shouted at, but would then relapse into a state of quiet delirium. She complained of pain in her back and forehead and cried out when moved. No rash of any description was present. Bromide of potassium, ten grains three times a day, was now ordered her. On the 23rd the child was more conscious but very restless; the tongue was moist and white but not so foul as on the day before; marked retraction of the head was now present. A specimen of urine was obtained; it was clear and light coloured, its specific gravity was 1006, its reaction was acid, and it contained a trace of albumin but no sugar. Towards evening she became very restless and excitable, crying out frequently, "My head! my head!" said she was dying and asked for chloroform to end her misery. The pupils were small, the conjunctivæ were suffused, and photophobia was present. Kernig's sign was now elicited; the knee-jerks were absent. Herpes were beginning to appear on the upper lip and three or four livid coloured spots were observed scattered over the body. I regarded the case as one of cerebro-spinal meningitis and asked Dr. Kirkland to see the patient with me; this he very kindly did the same night and confirmed the diagnosis The result of the physical examination was briefly as follows: the chest movements were calm, the percussion note was normal, and the breath sounds were clear. The position of the apex beat and the extent of the cardiac dulness were normal. The heart sounds were healthy. The abdomen was retracted and free from any localised tenderness; there was no enlargement of the spleen. No enlarged glands could be found anywhere, nor any enlargements of the bones nor periosteal tenderness. There were no sores upon the body. One-eighth of a grain of morphine was given hypodermically at 11 P.M.; this quieted the patient until 2 A.M., when she again became restless and delirious. On the 24th the eruption of labial herpes had become much more extensive, forming a complete ring round the mouth and extending up on to her cheeks. Symmetrical crops of herpes had come out over both knees, both elbows, over each ilium, and a small patch in each axillary fold. A condition of opisthotonos had now developed. Dr. J. H. Garrett, medical officer of health, kindly saw the patient with me and agreed as to its nature. One-sixth of a grain of morphine was now given but did not produce much effect. The patient was put on the following medicine:—Potassium iodide, 5 grains; ammonium bromide, 10 grains; tincture of belladonna, 4 minims; syrup of orange, half a drachm; and chloroform water to make up half an ounce—to be taken four times a day in water. As her bowels had not moved mercury with chalk, 5 grains, was ordered, to be followed by an enema. The elbows and knees had now become so sore that they had to be kept bandaged. The patient passed a very restless night, shouting and moaning so as to be heard in the street. On the morning of the 25th an erythematous rash appeared over the body and limbs. Dr. Kirkland now gave the patient chloroform and under strict aseptic precautions I made a puncture between the third and fourth lumbar vertebræ. Immediately on passing the needle into the spinal canal a thick purulent-looking fluid welled up, about one cubic centimetre coming away; this was collected in a carefully sterilised test tube for subsequent investigation. At the same time cultures were made from the upper part of the nasal fossa by passing a sterilised platinum needle up to the superior turbinated bone and then inoculating directly tubes of Löffler's blood serum and of agar-agar. The anterior nares were quite dry and no visible secretion adhered to the needle on its withdrawal. Cultures were also taken in the same way from the pharynx. A leucocyte count by the Thoma-Zeiss hæmocytometer showed a leucocytosis of 15,887 per cubic millimetre. The patient now became easier and for some hours was quieter than she had been even after the administration of morphine. She also passed a better night than she had had since the beginning of her illness. On the next morning, the 26th, she for the first time recognised me as a medical man and did as she was asked. The head was still more retracted, however. She complained greatly of thirst, due no doubt in part to the belladonna, and drank large quantities of lemon water in addition to three pints of milk, beef-tea, and albumin water. There was never any difficulty in getting her to take abundance of nourishment. A scarlatiniform rash appeared and disappeared in the space of a few hours. She again had a very restless night. On the 27th she was more restless than ever, wanting to get out of bed, turning from one side to the other, and crying out with the pains in her back and forehead. One-sixth of a grain of morphine was given hypodermically but produced no effect at all. The livid-coloured spots noticed at the beginning of the illness had now disappeared but a small patch of petechiæ had formed on either side of the chest at the lower thoracic margin. On the 28th she was quieter and more sensible, the left side of her face was flattened, and the corner of the mouth on the right side was drawn up. The forehead and eyelids were unaffected. The tongue, which had become cleaner, when put out deviated to the left. An evanescent scarlatiniform rash was again present. A leucocyte count showed a leucocytosis of 13.569 per cubic millimetre. At 3 P.M. she fell into a deep sleep which continued unbroken until midnight, when she woke for a few minutes, had a drink, and went to sleep again until 6 A.M. the next morning, the 29th. When I came to see her at 11 A.M. she of her own accord told me that she was much better. The retraction of the head was less and she seemed to be very decidedly improved. The urine when examined was of specific gravity 1008, the reaction was neutral, it contained no albumin and no sugar. She passed a good night and on the 30th was becoming convalescent. Kernig's sign was now absent and the flattening of the face was less marked. On the 31st she was allowed solid food; the tongue was now quite clean. A slight patellar reflex was elicited; pain and headache had ceased and she was able to bring the head into a line with the body but could not flex the neck beyond the vertical. All that remained of her illness was some stiffness of the back and inability to flex the neck, with some paresis of the lower part of the face. With an effort she could now manage to whistle. (Fig. 1)

The patient's mental state throughout the illness impressed me so forcibly that I recapitulate it here in greater detail.

After the initial unconsciousness had passed off she would continue to talk away, uttering at times nonsense, but generally disconnected fragments of conversation relating to her ordinary life, such as shopping, saying her lessons, &c. If spoken to she showed the greatest irritability and at times became violently excited, especially if the nurse or myself persisted in doing anything she disliked. Any loud sound annoyed her greatly. The prick of the hypodermic needle always gave rise to the most bitter reproaches, sometimes mingled with threats and sobs. There seemed to be no dulling whatever of the sensorium; she remembered exactly the number of times I had pricked her with the needle and kept accurate count of the days of her illness. The pains were apparently of the most acute nature, wringing from her frequent moanings and complaints of her head and back, mingled with repeated appeals to me to give her chloroform and let her die and expressions of hope that she would not live long. She always referred the worst pain to the back and forehead and asked for, and apparently found relief from, the application of eau de Cologne on a handkerchief to the temples. Whereas most patients with this disease complain chiefly of occipital headache this was not so in her case. She complained also of pains in her abdomen and "all over." It seemed to be intolerable to her to remain in one position for any length of time, notwithstanding the fact that any movement gave her pain. Her mode of altering her position was curious. She would slowly raise herself on her hands and knees and keeping the head drawn stiffly back turn over to the other side, to which she would arrive with apparent relief, but only in a few minutes to change to a fresh posture. The attitudes are depicted in the accompanying illustrations. (Figs. 2 and 3.) At times she apparently found relief in lying upon her abdomen and resting her chin upon the pillow. As a rule she preferred turning herself to being helped by another, owing to the ever-present dread of her head being moved. If help were given she kept crying incessantly "Mind my head, mind my back." Her attitude with the head drawn back between the shoulders, and arms and legs as a rule flexed, her constant restlessness in spite of the pain she thereby occasioned herself, her delirium and fractiousness, her general hyperæsthesia of the skin, all combined to indicate a widespread superficial irritation of the brain and spinal cord. Superficial because, with the exception of the cervical retraction, there was no definite localised spastic or paraplegic condition of any particular group of muscles or lesion of any particular sense such as would result from a deep-seated pathological focus.

FIG. 1.

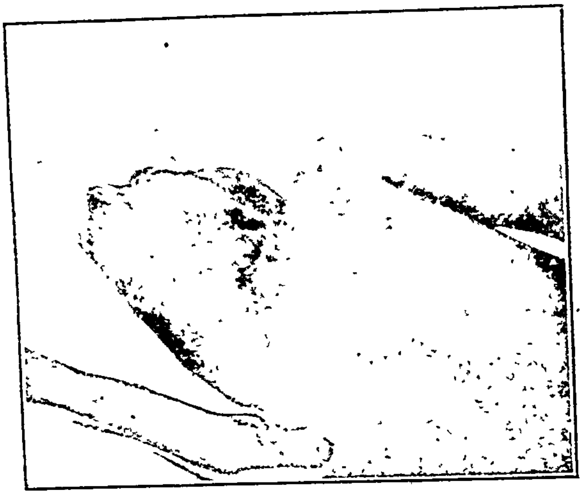


DATE		22	23	24	25	26	27	28	29	30	31
DAY OF ILLNESS		1	2	3	4	5	6	7	8	9	10
PULSE	M	98	102	108	94	92	88	88	90	84	80
	E	92	96	102	100	108	92	92	92	80	80
RESP.	M	44		40	45	40	32	28	28	26	26
	E					42	32	32	30	24	30
BOWELS	M	2	3	0	0	2	0	0	0	0	1
	E	0	2	0	1	2	1	1	0	0	2

Course of temperature.

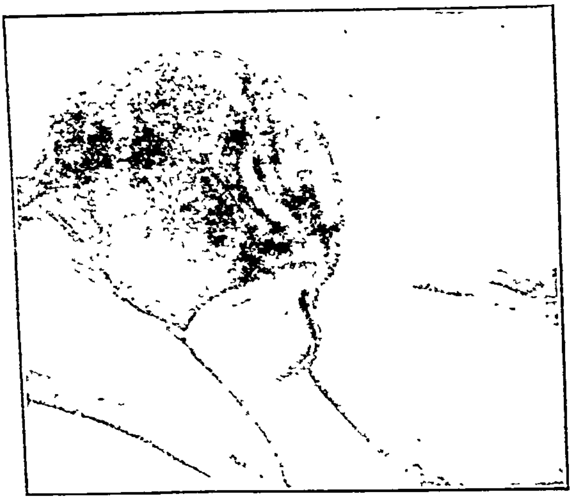
The bacteriological examination proved the case to be due to the presence of the diplococcus intracellularis meningitidis of Weichselbaum. Cover-glass preparations of the cerebro-spinal fluid were made immediately after its removal and were fixed in equal parts of alcohol and ether. These exhibited large numbers of leucocytes, mostly polymorphonuclear and large mononuclear cells, a few degenerated but the great majority intact with a clearly defined nucleus. Diplococci, few in number, were found, both intra- and extra-cellular; none were observed within the nuclei. These diplococci were decolourised by Gram's method and took up the counter-stain bismarck brown; they were so few in number that it took an hour's search to find any. Cultures were made from the cerebro-spinal fluid in broth, on Löffler's blood serum, and on agar-agar. In 48 hours a growth appeared in the tubes of broth, forming a small white deposit at the bottom but leaving the broth itself clear. When shaken this deposit eddied up like a stringy substance attached by one end to the bottom of the test tube. On Löffler's blood serum an almost colourless growth, flat, confluent, and seen with difficulty, developed. The tubes of agar-agar exhibited no growth at all. Tubes of agar-agar were now inoculated from the growth on the blood serum; in 24 hours translucent colourless colonies, discrete and elevated, appeared upon the agar-agar, its passage through the Löffler's blood serum having apparently increased its hardiness. All these growths were pure cultures of a diplococcus decolourised by Gram's method but staining well with the ordinary aniline dyes. The confronting sides of the diplococcus were flattened and it frequently occurred in tetrads. The individual cocci showed variations in size and also in depth of staining, this being especially well seen when stained with bismarck brown. In a tetrad sometimes three would be

FIG. 2.



Patient lying on the right side, with head strongly retracted.

FIG. 3.



Patient lying on face.

lightly stained and the fourth coccus stained deeply. Examples of both the lightest and deepest stained cocci were, as a rule, found amongst the larger forms. The component cocci of a single diplococcus were not infrequently unequal in size.

The cerebro-spinal fluid itself was kept for 48 hours without any noticeable increase in the number of diplococci. It was then incubated for 24 hours at 39° C. and proved an excellent pabulum for the organism which grew luxuriantly in it. This is, I think, of some importance, apart from its interest, as cases may occur where suitable culture media are not obtainable. Of the tubes inoculated from the nasal cavity, mixed growths developed both on the agar-agar and on the blood serum. No growth of the specific organism could be found upon the agar-agar, but on the Löffler's blood serum colonies of the diplococci were obtained. No growths of the diplococcus were discovered in the cultures made from the pharynx. The urine immediately after being voided was centifuged; the deposit was washed in distilled water, re-centrifuged, and examined; but though numerous micro-organisms, including diplococci, were found none were detected exhibiting the characteristics of Weichselbaum's diplococcus. The cerebro-spinal fluid was tested as to the presence of iodide of potassium but was found to contain none; ten grains of it had been taken when the lumbar puncture was made.

As to how this case occurred I can offer no explanation. The presence of the organism in the nasal chamber would point to an aerial infection. There was no history of letters, books, clothes, animals, or friends coming from a distance, nor had the child been away from Cheltenham.

I would like to express here my obligations to Dr. Kirkland, not only for his help and interest in the management of the case but also for his kindly assistance in preparing this account of it.

July 1st.—The patient has continued to make an uninterrupted recovery and is now perfectly well.

Cheltenham.

A CASE OF PERFORATED GASTRIC ULCER WITH FATAL HÆMORRHAGE FROM THE BOWEL IN AN INFANT 45 HOURS OLD.

By A. GRAINGER BISSET, M.B., Ch.B. Glasg.,
LATE HOUSE SURGEON TO THE VICTORIA INFIRMARY, GLASGOW.

I was hastily summoned one evening to see an infant who was said to be bleeding profusely from the bowel. The mother had been delivered at 4 A.M. the previous day by a midwife who stated that the confinement was in every way normal, the entire duration of the labour (the ninth) not exceeding three hours. When I saw the infant, a boy, he was lying in a semi-collapsed state. The mother's story was that in the evening the child had refused the breast altogether, although he had previously taken it quite readily. When she proceeded to change the infant's napkin, about 7 o'clock, she found that it was saturated with blood of a slightly dark colour and while she was preparing a fresh napkin two great gushes of blood spurted out from the child. On removing this second napkin I found it soaking with blood and a little still continued to ooze away from the anus. The bowels had previously been moved naturally, the colour of the stools being that of meconium. There was no sign of prolapse. The umbilical cord had not been tied until pulsation had ceased; it was properly secured and looked perfectly healthy. There was no history of hæmophilia, syphilis, or phthisis, and the child was not jaundiced. The heart-beats were regular; there was no bleeding from the mucous membranes and nothing to suggest that the child had swallowed blood—e.g., from fissured nipples, or during the act of birth. On examining with the finger in the rectum and bimanually nothing abnormal could be detected; the finger on withdrawal was covered with blood of a fresh colour. The abdomen was most carefully palpated without revealing anything unusual; no tenderness, localised or general, seemed to be present. Invagination of part of the bowel was thought of as a possible cause of the hæmorrhage, but the great quantity of blood lost, its non-admixture with mucus and slimy matter, together with the absence of blood-stained motions and of any indication of tenesmus seemed to negative that view; nor were there any physical signs to support it. Gastric or duodenal ulcer appeared to be excluded by the entire absence of vomiting and by the comparatively fresh colour of the blood lost. A provisional diagnosis was made of some form of ulcer pretty low down in the intestine as being the likeliest cause of the hæmorrhage, and, acting on this theory, a rectal injection of equal parts of adrenalin and hamamelis was given, the grave condition of the child precluding any possible surgical measures being resorted to. A small plug of cotton-wool was inserted temporarily in the rectum to retain the injection. The infant was then placed in bed with the legs raised and the head lowered. A very bad prognosis was given, having regard to the large amount of blood lost, and this was amply justified by the infant's death three hours later, being six hours after the bleeding was first noticed and 45 hours after birth.

Necropsy.—Post-mortem examination was restricted to the contents of the abdomen. On opening into the abdomen no blood was found in the peritoneal cavity. The entire length of the intestine was examined for intussusception but none existed. The whole alimentary tract was then removed in one piece from above the cardiac opening of the stomach to the lower rectum and was slit open along its entire length when it was seen to be filled with blood, mostly in a semi-fluid condition. No indication of ulceration was found until the stomach was reached. This organ contained a large amount of semi-fluid blood and mucus mixed with partially digested milk. On carefully washing away this detritus a typical gastric ulcer of the acute form was exposed, with perfectly clean-cut, punched-out margins, situated on the posterior wall of the viscus near the lesser curvature and about half an inch from the cardiac opening. The ulcer was completely perforated and, as some shreds of mucoid material were found adhering to its peritoneal aspect, the posterior abdominal wall was again examined and a little of this blood-stained mucoid matter was seen lying in the situation which the ulcer must most probably have occupied, evidently indicating that adhesion of the ulcer had actually taken place at this point but had become separated during the removal of the stomach from the abdomen and had been the means of preventing the escape of the blood into the peritoneal cavity. The ulcer was circular in form and was almost of the size of a threepenny-piece on its inner surface. Running up to the ulcer a blood-vessel could be traced with some difficulty, probably a large branch of the left superior coronary artery of the stomach and the one whose rupture had set up the hæmorrhage. The mucous lining of the stomach for a radius of three-quarters of an inch from the circumference of the ulcer was markedly congested and formed a notable contrast with the remainder of the mucosa which was distinctly paler in colour. There was a slight thickening all round the edges of the ulcer and its immediate vicinity. The other abdominal organs were normal.

Gastric ulcer is very rare before puberty, yet it has occasionally been observed soon after birth and also in the newly born. In most cases it has been the simple ulcer but tuberculous and syphilitic ulcers have been described in this connexion. The extreme rarity of the condition in the very young has been attested by various writers. Thus Fenwick[1] refers to 18 collected cases of genuine examples of ulcer of the stomach in infancy or childhood, 13 of which were of the acute type and five of the chronic variety, the ratio of females to males being 4 to 1. Welch,[2] quoted by Fenwick, found out of 607 cases only one case occurring in the first decade of life, and Rokitanski[3] had not met with a single case under 14 years of age in his extensive experience. Goodhart[4] records a case in which death took place 30 hours after birth and in which the ruptured vessel could be seen with a lens lying open in the floor of the ulcer. Ulceration of the stomach at birth has also been described by Rilliet, Billard, Henoch, Dreschfeld, Düsser, and others. Recently Morris and Feldman[5] have published a case of hæmatemesis and melæna in an infant two days old, due undoubtedly to gastric ulcer, in which recovery took place, a termination met with, according to Eichhorst, in less than 50 per cent. of such cases. Actual perforation of the ulcer, as in our own case, is extremely rare. A puzzling feature of this case was the entire absence of vomiting. Considering the ease with which infants reject the contents of the stomach it certainly seems strange that all the blood should have been passed per rectum. In most cases of gastric ulcer blood accumulating in the stomach acts as a foreign body and excites nausea, followed by vomiting in a very short time. In other cases, again, the irritation of blood lying in the stomach would seem to stimulate intestinal movements to get rid of it by the bowels. Still, it must be very rare that vomiting is entirely absent and that all the blood is voided per rectum. Such a condition would almost suggest *a priori* a mode of distinguishing between duodenal and gastric ulcer but this case seems to show that such a distinction cannot be depended on. What determined the actual onset of bleeding in the case is an interesting speculation. Most probably it was due to the milk imbibed setting up vigorous gastric peristalsis, which, with the concomitant increased vascularity of the organ consequent upon the act of digestion, would be sufficient to bring about the final rupture of the already partially eroded vessel or to dislodge any clots which may have sealed over the opening of the vessel at the point of erosion.

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[1] Fenwick. Ulcer of the Stomach and Duodenum, 1900.

[2] Ibid.

[3] Ibid.

[4] Goodhart: Transactions of the Pathological Society of London, 1881, vol. xxxii.

[5] Morris and Feldman: Brit. Med. Jour., Feb. 18th, 1905.

Wigan.

RATES OF ATTACK BY ENTERIC FEVER IN 90 LARGE TOWNS OF ENGLAND AND WALES.

By G. S. BUCHANAN, M.D. Lond.,
MEDICAL INSPECTOR OF THE LOCAL GOVERNMENT BOARD.

A GENERAL indication of the relative degree of prevalence of enteric fever in different towns, or groups of towns, in England and Wales can readily be obtained by reference to the mortality returns published by the Registrar-General. Often, however, it would be more useful to be able to contrast the relative number of notified cases of this disease than to be guided by the relative number of deaths. In an addendum to a report to the Local Government Board on the sanitary circumstances of Sheerness, lately published, I have recorded a considerable series of attack rates by enteric fever which were calculated for this purpose and are likely to be of sufficient general utility to warrant their reproduction.

In the table below are given the annual attack rates by enteric fever in 90 large towns of England and Wales during the years 1898 to 1904 inclusive. The middle year 1901 is the census year and the rates have in each instance been reckoned on the 1901 census population, a proceeding sufficiently exact for the purpose required. The figures have been extracted and tabulated in the medical department of the Local Government Board by Mr. W. Hunter. My colleague Dr. Theodore Thomson, in a report on enteric fever in Swinton and Pendlebury (Annual Report of the Medical Officer of the Local Government for 1898-99, p. 168) gave the annual attack rates by enteric fever of 50 towns for which the necessary data were then available. These figures were quoted at the time in THE LANCET.[1] For convenience of comparison I have marked these 50 towns with an asterisk in the table below. The annual attack rate by enteric fever for the whole of these 50 towns during the period with which Dr. Thomson dealt, 1893–97, was 1·03.

The table below gives the annual attack rates by enteric fever from 1898 to 1904, inclusive, of: (*a*) the 75 towns of England and Wales which had a population at the 1901 census exceeding 50,000. In the case of 35 of these 75 towns the corresponding attack rates for the period 1893–97 were given by Dr. Thomson in the report referred to. (*b*) 15 towns of England and Wales with a population at the last census less than 50,000, in respect of which Dr. Thomson gave the corresponding attack rates for the period 1893–97. The total number of towns dealt with in the table is thus 90. The data enable calculation of the following annual attack rates by enteric fever during 1898–1904: all the 90 towns, 0·96 per 1000; all the 75 towns of England and Wales whose population at the 1901 census exceeded 50,000, 0·97 per 1000; all the 50 towns whose attack rates for 1893 to 1897 were given by Dr. Thomson, 0·89 per 1000.

Towns.	Population (census), 1901.	Annual attack rates per 1000 by enteric fever during the seven years 1898-1904.
90 urban districts	15,170,479	0 96
75 urban districts with populations over 50,000	14,506,863	0·97
*50 urban districts	10,411,007	0·89
*London	4,536,541	0·71
*Liverpool	684,958	1·19
Manchester ...	543,872	0·81
*Birmingham ...	522,204	1·12
*Leeds	428,968	1·01
*Sheffield [99] ...	380,793	1·73
*Bristol	328,945	0·65
*Bradford	279,767	0·93
West Ham ...	267,358	1·54
*Kingston-on-Hull	240,259	0·89
Nottingham ...	239,743	1·75
*Salford	220,957	1·27
Newcastle-upon-Tyne [98]	215,328	0·50
Leicester [98] ...	211,579	0·61
Portsmouth [00]	188,133	2·33
Bolton	168,215	1·30
*Cardiff	164,333	0·50
Sunderland [93]	146,077	1·73
Oldham	137,246	0·43
Croydon	133,895	0·37
Blackburn	127,626	1·24
Brighton [99] ...	123,478	0·65
Willesden	114,811	0·54
Rhondda	113,735	2·56
Preston	112,989	1·43
Norwich [93] ...	111,733	1·24
Birkenhead ...	110.915	1·76
Gateshead [93] ...	109,888	0·51
*Plymouth [00]	107,636	0·62
Derby	105,912	1·00
Halifax	104,936	0·66
*Southampton ...	104,824	1·20
*Tottenham ...	102,541	0 93
*Leyton	98,912	0 89
*South Shields	97,263	1·06
Burnley	97,043	0·82
East Ham	96,018	1·14
*Walthamstow ...	95,131	0·90
Huddersfield ...	95,047	0·62
Swansea	94,537	0·86
*Wolverhampton	94,187	1·29
*Middlesbrough [93]	91,302	1·40
*Northampton ...	87,021	0·56
*Walsall	86,430	0·83
*St. Helens [99]	84,410	1·47
Rochdale [98] ...	83,114	0·45
*Stockport [98]	78,897	0·81
York [00]	77,914	1·55
*Aston Manor ...	77,326	1·56
Reading	72,217	0·35
*Hornsey	72,056	0·37
*Devonport ...	70,437	0·56
*Coventry [99] [01]	69,978	0 95
*Merthyr Tydfil [03]	69,228	2·34
*Newport (Mon.)	67,270	0·69
Ipswich [99] ...	66,630	1·65
Hastings [99] ...	65,528	0·32
*West Bromwich [00] ...	65,175	0·93
Warrington [00]	64,242	0·73
*Grimsby ...	63,138	4·06
*West Hartlepool	62,627	0·33
Hanley [99] ...	61,599	1·19
Wigan [99] ...	60,764	1·43
Bootle [98] ...	58,556	1·30
Bury	58,029	0·70
*Barrow-in-Furness ...	57,586	1·09
King's Norton and Northfield	57,122	0·51
*Smethwick ...	54,539	0·91
Rotherham ...	54,349	1·23
Wallasey [01] ...	53,579	2·10
Handsworth (Staffs)	52,921	0·55
Stockton-on-Tees	51,478	1·26
*Tynemouth ...	51,366	0·45
Great Yarmouth [93]	51,316	2·00
*Burton-on-Trent [01] ...	50,386	0·54
*Bath	49,839	0·29
*Oxford [98] [00]	49,336	0·25
*Southport ...	48,083	0·70
*Gloucester ...	47,955	0·17
*Exeter [99] ...	47,185	1·51
*Bournemouth	47,003	0 22
*Worcester ...	46,624	0·37
*Carlisle	45,480	0·32
*Darlington ...	44,511	1·20
*Eastbourne ...	43,344	0·35
*Dover	41,794	0·31
*Barnsley	41,086	2·36
*Cambridge [93]	38,379	0 71
*Colchester ...	38,373	0·51
*Macclesfield [00]	34,624	0·95

* Fifty urban districts for which attack-rates by enteric fever in 1893–97 were recorded by Dr. Thomson in the annual report of the Board's medical officer for 1898–99, p. 168.

[97], [93], &c. In the year indicated the number of enteric fever cases notified exceeded one quarter of the total number of enteric fever cases notified during the seven years 1898–1904.

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[1] THE LANCET, Feb. 25th, 1899, p. 542.

A NOTE ON THE EXAMINATION OF CULTURES AND SMEARS FROM THE THROAT AND THE NOSE.

BY W. T. GORDON PUGH, M.D., B.S. LOND.,
SENIOR ASSISTANT MEDICAL OFFICER, NORTH-EASTERN HOSPITAL, METROPOLITAN ASYLUMS BOARD, LONDON.

IN relating a staining method which has been used for the detection of the bacillus diphtheriæ at the North-Eastern Hospital for about 18 months and which, so far as I can ascertain, has not been already described in this connexion, it may be well at the outset to intimate that no new feature of the bacillus is brought out and the sole reason for this note is that the stain has proved more convenient than others in general use. It is now customary to make several cultivations from the throat and nasal cavities of diphtheria convalescents before discharge from hospital in order that freedom from infection may be insured; in many hospitals, also, cases of scarlet fever are examined at the time of admission with a view to preventing the occurrence of post-scarlatinal diphtheria. *Examination for the bacillus diphtheriæ thus* occupies a prominent position in the routine work of a fever hospital and it is essential that the method adopted should be speedy and convenient. The reaction to litmus of subcultures in neutral glucose broth, pathogenicity to guinea-pigs, and appearance of colonies on various media are tests obviously not suitable for routine work and the question reduces itself practically to a consideration of the methods of staining films of colonies found in a blood-serum cultivation after some 20 hours' incubation.

For many years it has been recognised that the protoplasm of certain bacteria contains granules that stain deeply with aniline dyes. The significance of these granules, the so-called Babès-Ernst bodies, has not been definitely established. Some have believed them to be products of degeneration, while others, on the contrary, have regarded them as reserve substances. Ernst attributed a nuclear nature to them and Crouch[1] thought their polar position possibly represented a division of nuclear substance preliminary to the division of the micro-organism. These granules are especially well marked in diphtheria bacilli when grown for 20 hours on blood serum prepared according to Löffler's formula and in my experience they occur with remarkable constancy. It thus comes about that the differential staining of these Babès-Ernst bodies forms the basis of nearly all the staining methods for the recognition of the Klebs-Löffler bacillus. It must not be forgotten, however, that this bacillus is but one of several micro-organisms which show these granules, and it is well when the bacilli under observation do not conform in general appearance and arrangement with the recognised standard that they should be investigated in further detail. The final and only certain laboratory test for the bacillus diphtheriæ is that it is pathogenic to the guinea-pig, while a control animal protected by antitoxin is immune. Bacilli showing polar granules may sometimes be obtained from the throat, nares, and especially the ear, which are not pathogenic to the guinea-pig. One form so closely resembles the bacillus diphtheriæ in all its reactions as to be regarded as a non-virulent form of this organism; it appears to be not very uncommon in the throats and noses of healthy school-children in large centres of population where diphtheria is endemic, and there is no evidence that it can become pathogenic. There are occasionally found other non-virulent bacilli which, while showing polar bodies, generally differ from the Klebs-Löffler bacillus in length, arrangement, coherence, or rate of growth on blood serum sufficiently to make the risk of their being confounded with the more important organism not a great one. Mervyn Gordon[2] and Graham-Smith[3] have examined in detail a number of these bacilli, which are especially to be suspected in cultures from the ear, and their papers and illustrations may be consulted with advantage. Again, the bacillus *coryzæ* segmentosus, found in the nasal discharges in acute influenzal cold, may show polar granules in a small proportion of bacilli. The bacillus Hoffmanni usually exhibits none of these bodies, but occasional colonies, especially in cultures obtained from the nose, may show granules in scattered bacilli; these as a rule are readily differentiated by the shortness and uniformity of the individual micro-organisms. Similar granules may be present in leptothrix of the mouth, not infrequently seen in swab-smears, while some varieties of cocci and streptobacilli exhibit them markedly.

The procedure for demonstrating these polar bodies originally recommended by Ernst consisted in staining first with a methylene blue solution and then with vesuvin for a few seconds. Crouch[4] in 1895 used methyl green and dahlia, followed by vesuvin. In 1896 Neisser[5] introduced the use of a methylene blue solution, acidulated with glacial acetic acid, for one to three seconds, counterstaining with vesuvin for three to five seconds. In three out of 39 typical cultures of virulent diphtheria bacilli, however, he failed to show polar granules by this method,[6] and various slight modifications (principally as regards time) were later proposed by several observers.[7] Pitfield[8] (1901) used three solutions containing silver nitrate, pyrogallic acid, and carbol-fuchsin. Hunt's method also involved the use of three solutions—methylene blue, tannic acid, and methyl orange. M. Piorkowski[9] (1901) recommended Löffler's methylene blue, followed, after decolorisation with acid alcohol, by eosin. W. G. Schauffler,[10] his pupil, improved on this, using a mixture of Löffler's blue, acid alcohol, and pyronin; while Andrade[11] has published yet another stain, a mixture of Borrel's blue and vesuvin solution. Of these, Neisser's method has met with most popularity; it requires, however, some care and experience in its application for a negative result to be trustworthy. A course commonly adopted is to examine a film stained by Löffler's blue and to confirm by examination of a duplicate specimen stained by Neisser's solutions. The stain which I have used during the past 18 months combines to a great extent the advantages of these two methods. It consists of toluidine blue[12] (Grubler's, obtained from Baird and Tatlock, Hatton-garden) one gramme, dissolved in absolute alcohol 20 cubic centimetres and distilled water one litre, to which glacial acetic acid, 50 cubic centimetres, is added. The stain has been usually applied for two minutes, but it may be left on considerably longer without ill-effect. When examined in a bright artificial light all the Babès-Ernst bodies, whether in bacilli or cocci, are seen to be stained a reddish-purple, the diphtheria bacilli thus standing out prominently. The bodies of the diphtheria bacilli stain a faint purplish-blue; those of other bacilli, including that of Hoffmann, acquire a pale but more definite blue tint, as also do most cocci; some varieties of staphylococci, however, show a uniform reddish-purple coloration. There is no difficulty in deciding whether the purple granules are in bacilli or cocci and specimens may as a rule be examined with considerable rapidity, for the stain appears constant in its action and the film is easily focussed. Only one solution is thus required, and that a stable one, while there are within reason no time limits in its application. These are obvious advantages when dealing with large numbers of cultures.

It may be added that the stain has been found convenient in the examination of swab smears, although polar granules are far from constant in diphtheria bacilli found under these conditions. In order partly to detect Vincent's angina but principally to prevent the introduction of atypical cases of scarlet fever into the diphtheria wards, such examination is made in the receiving room of all cases admitted under certificate of diphtheria. A new slide or coverslip is gently warmed, and the swab, before being used to inoculate the blood-serum tube, is rubbed over its surface, and the toluidine stain applied for about two minutes. Only those cases in which definite diphtheria bacilli showing polar granules have been found in the smear are sent directly to the diphtheria wards; all others are detained in observation rooms until the original diagnosis has been confirmed or gatived by culture. Reference to the register shows that, ong the last 574 cases admitted under certificate of diph-eria, repeated cultures proved negative in 172. Of the naining 402, in which the diagnosis was confirmed by the cteriological examination, 231 had exhibited in the swab near diphtheria bacilli with polar granules, a percentage 57.

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[1] New York Medical Journal, *Oct. 5th, 1895, p. 430.*

[2] Supplement to the Thirty-first Annual Report of the Local Government Board, 1901-02

[3] Journal of Hygiene, vol. iv., No. 2, 1904, p. 258-328.

[4] Loc. cit.

[5] Zeitschrift fur Hygiene, Band xxiv., 1896.

[6] See Kurth, Zeitschrift fur Hygiene, Band xxviii., 409.

[7] R. T. Hewlett, Brit. Med Jour., Sept. 3rd, 1898, p. 599; A. A. Coles, ibid., May 20th, 1899, p. 1213; F. F. Caiger and W. C. C. Pakes, ibid., Sept. 21st, 1901, p 758; L. Cobbett, THE LANCET, Nov. 23rd, 1901, p. 1403; and M. Gordon, loc. cit.

[8] University of Pennsylvania Medical Bulletin, vol. xiv., 1901, p. 274.

[9] Berliner Klinische Wochenschrift, No 9, 1901.

[10] New York [illegible], p. 895.

[11] M[illegible]

[12] There appear to be two [illegible] the market; one, which in the powder has a reddish tinge, should be avoided in making this stain.

outh Tottenham, N.

Clinical Notes:

EDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

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LARGE HYDROCELE OF THE TUNICA VAGINALIS.

By C. Lloyd Worrall, L.R.C.P. Lond., L.S.A.,

DISTRICT SURGEON, BARBERTON, TRANSVAAL.

On May 30th I was called to see a native (at the office of he Commissioner of Native Affairs) who was reported to be ' suffering from an extraordinary enlargement of the esticles." Visions of elephantiasis of the scrotum flashed across my mind but these were soon dispelled on examining the case. The history briefly was that the tumour had been gradually developing for four years and that it had never given much pain except that on walking there was a general ache. The patient had no recollection of any injury whatsover to the parts.

I found on examination an enormous scrotal tumour of fairly regular outline, the left side being considerably the larger—it was quite dull all over on percussion and had that elastic feel which strongly suggested fluid. An examination for translucency proved quite negative. There was no impulse on coughing and the spermatic cord could easily be traced to the external rings. The penis was merged into the tumour in such a way that the prepuce alone was in evidence. As I was convinced that the tumour could be no other than an enormous hydrocele I decided to tap it and drew off in all slightly over 78 ounces of fluid. This was contained in two sacs. In the larger one the fluid was dark from what appeared to be disintegrated blood and in the other sac it was the ordinary straw coloured hydrocele fluid.

I venture to report this case as it has one or two points of interest—its enormous size and yet causing little pain or discomfort. Again it was noteworthy that notwithstanding the fact that this hydrocele had been forming for something like four years and reached such a size, the testicles seemed quite normal in size and apparently showed no sign of atrophy. One would have thought that the abnormal pressure of the fluid would have tended to make these organs degenerate and shrink. Another little point worth mentioning is that this native had come in to see the commissioner to report his wife having run away with another native. What a domestic tragedy could possibly have been avoided had this wretched man thought fit in good time to call in the services of a surgeon.

I regret that I am not in reach of any special work on the diseases of the generative organs and therefore am not able to determine the frequency or otherwise of these enormous hydroceles. I note that Erichsen quotes "that Gibbon the historian had an enormous hydrocele, which was tapped by Cline, who drew off six quarts of fluid."

Barberton, Transvaal.

A CASE OF ZONA OF THE FOREARM AND HAND.

By R. E. P. Squibbs, M R C.S. Eng., L.R.C.P. Lond.

The notes of the following case may be of interest on account of the rarity of zona of the forearm and hand. R. Liveing in his "Handbook of Skin Diseases," writes, "On the forearm and hand zona is but rarely seen," and Hilton Fagge says, "In some instances of brachial zoster the vesicles reach down to the finger but this is very exceptional."

On June 15th last I was sent for to see the patient, a stout married woman, aged 61 years, and found her suffering from a typical attack of zona of the left forearm and hand. She complained of severe pain of a neuralgic character. The eruption consisted of several clusters of vesicles on inflamed patches of skin, and were situated on the anterior surface of the forearm, and followed roughly the course of the internal cutaneous nerve. In the palm of the hand a large pemphigus-like bleb had developed and into this some hæmorrhage had evidently taken place. There were also some vesicles on the inner side of the arm, one of which was followed by a small ulcer. The case was successfully treated by the application of hazeline cream and fuller's earth and the internal administration of tonics.

New Lenton.

Medical Societies.

GLASGOW AND EDINBURGH OBSTETRICAL SOCIETIES.

Secondary Operation for Complete Rupture of the Perineum.

The combined summer meeting of these societies was held in Glasgow on June 21st, Dr. J. K. Kelly, President of the Glasgow Obstetrical and Gynæcological Society, being in the chair.

Dr. C. J. Cullingworth, Honorary President of the Glasgow Society, read a paper on the Secondary Operation for Complete Rupture of the Perineum. He said that owing to the new possibilities which have been opened up by advances in abdominal surgery the interest in the older gynæcological operations had of late years somewhat dwindled; and yet some of these, especially the plastic operations, ministered quite as much to the comfort and well-being of the patients as the more showy achievements of modern times. In tracing the history of the operation Dr. Cullingworth mentioned those of Langenbeck in 1853, Jonathan Hutchinson in 1864, Delere' in 1876, and those associated with the names of Emmet, Hegar, Hildebrandt, and Lawson Tait. Emmet's operation, or some modification of it, was the one usually practised in the United States, while in this country the flap-splitting operation of Lawson Tait was perhaps the one most generally adopted. The splitting of the flap by angular scissors instead of laboriously dissecting with a knife simplified and shortened the operation. The weak point was that it left unsutured both the rectal wound and the vaginal wound. In order to be satisfactory any method of operation should fulfil the following conditions: 1. It should restore the perineum as nearly as possible to its original size and shape. The gynæcologist should familiarise himself with the size and shape of the average perineum by taking mental notes of these during his ordinary examination of patients. It was always a temptation to the inexperienced, partly from anxiety lest the new perineum should not be long enough, to carry the new perineum too far forward. This might cause difficulty during labour or dyspareunia. 2. There should be brought into apposition a sufficiently large area of raw surface on the two sides as to make union almost certain. 3. The edges of the rectal side of the tear and those of the vaginal side should be severally brought together by careful suturing. 4. The patient's convalescence should be rendered as free as possible from pain and discomfort. Lawson Tait drew attention to the fact that if the skin was not sutured the patient suffered no pain. Dr. Cullingworth includes only a narrow edge of skin in the sutures and this produces very little pain if there is no tension when they are tied. If no skin is included in the sutures they get buried and the stitches are difficult to get out. 5. The operation should be easy of execution and uncomplicated in its character. 6. The operation should have the result of restoring to the patient efficient control of the bowel. Dr. Cullingworth begins his operation after the method of Lawson Tait by dividing with scissors the cicatricial line of the lower end of the recto-vaginal septum, then upwards on either side and to a less extent backwards, the whole incision roughly representing a capital H. The lateral incisions should be carried forward to the end of the cicatricial tissue, or if that should be indefinite, then to the point where the labia minora commence. The backward cuts are much shorter and facilitate the exposure and union of the divided ends of the sphincter. The vaginal flap should be reflected backwards by scissors or by a knife with the left forefinger as a guard in the rectum. The method of suturing was not a point of importance. Dr. Cullingworth begins by passing a suture entering the skin one-sixth of an inch from the edge of the wound, immediately below the angle of reflection of the vaginal flap. It is passed completely round from one side to the other, quite buried, and going down to the substance of the recto-vaginal septum at the base of the vaginal flap. This braces up the whole perineum and prevents any spaces being left at the bottom of the wound. Stout silkworm gut is used. The rectal tear is now sutured by passing the needle into the tissue close to the rectal mucous membrane and bringing it out half an inch from the edge and then passing over to the other side in a similar manner. The ends are tied and left long in the rectum. Other sutures are inserted in the same manner. Catgut is used for these stitches. The vaginal side of the laceration is then closed by a series of interrupted silkworm-gut sutures; the ends are left long and turn into the vagina. These long ends facilitate very much the removal of the stitches. Then the rest of the perineal sutures are inserted, not passing quite down to the base of the denuded surface. The last one is passed down deep at the side of the anus but no attempt is made to isolate the torn ends of the sphincter and the results are almost invariably satisfactory. Superficial stitches may be required. Two small strips of lint, three inches by three-quarters of an inch, anointed with vaseline, are placed at either side of the stitches. These are kept in place by the ordinary position of the thighs. Vaginal douches are only ordered when there is a purulent or offensive discharge; the wound is washed with wool-sponges. The catheter is usually required for two or three days, or the patient can turn on her hands and knees and pass urine without any more fear of soiling than in the use of the catheter. The patients are kept in bed for 14 days. Enemata are to be avoided, as they may interfere with the union on the rectal aspect. The patient is given a full dose of castor oil 60 hours after the operation and an aperient every other night afterwards. The stitches are removed on the eighth day. It may be reported that a little fæcal matter has escaped; if this matter comes from the perineal wound the opening will probably close but if from the vagina, showing a recto-vaginal fistula, it rarely heals. In again operating on these latter cases it is best to divide all the tissues and to do it all over again.

Dr. D. **Berry Hart** considered Dr. Cullingworth's method was an exceedingly good one. The deep suture into the base of the septum was very important. But he thought a weak point in the method was in having the ends of the stitches of the rectal flap hanging into the rectum. This favoured the contamination of the rectal wound and might have disastrous results on the operation. Dr. Hart favoured the dissecting out of the torn ends of the sphincters in order to secure muscular union after insertion of the sutures. Dr. Kelly (Baltimore) and Dr. Noble (Atlanta) practised a good method to prevent extravasation of fæces into the apex of the rectal flap. After the reflection of the flaps in the usual way they pull down the apex of the rectal gap to the anal orifice instead of burying it, as in Dr. Cullingworth's operation. If the rectal flap is thick it dilates the anus a little but the results are good. Dr. Hart favoured stitching with catgut in tiers.

Dr. W. L. **Reid** had practised many different methods in the last 25 years; now his plan was very much what Dr. Cullingworth had described. Along with repair of the perineum some other operation was frequently performed such as amputation of the cervix. In these cases and whenever there was any discharge that might decompose he used the douche. To prevent any injury to the stitches the douching was carried out by passing a piece of soft rubber tubing into the vagina and irrigating with boric lotion twice daily. He did not employ any dressing but irrigated the wound freely with boric lotion. He had given up using the catheter, but both before and after micturition allowed boric lotion to flow over the wound; there was no fear of harm from fresh urine, only from urine if it were decomposing. He had tried but never once succeeded to lay hold of the ends of the sphincter, but he always passed his stitch deep in the probable position of the ends.

Dr. A. H. **Freeland Barbour** considered it was better to carry the dissection deeper into the recto-vaginal septum than was indicated by Dr. Cullingworth. This permitted the edges of the rectal tear to be brought well together. He never passed any stitch into the bowel, closing the rectal tear by bringing the tissues immediately over the mucous membrane together. He always made an effort to get a good hold of the end of the sphincter.

Dr. **Samuel Sloan** stated that in the discussion Lawson Tait's operation had been lost sight of as it had no rectal stitches. In his experience the perineum was not brought far enough forward. A source of failure was the presence of any purulent discharge and this should be carefully treated as by curetting in a case of purulent endometritis.

Dr. N. T. **Brewis** pointed out that the Americans insisted on the importance of obtaining union of the torn ends of the sphincter. He never found any difficulty in dissecting out the torn ends in his cases. He followed Lawson Tait's method till a few years ago but he then altered it by dissecting out the ends of the sphincter and passing a stitch through one end completely round the rectal gap and then picked up the other end; this stitch was passed through the tissues a little from the rectal mucous membrane. In most cases this plan did very well but in some cases a recto-vaginal fistula resulted due to slipping of the sphincter. To obviate this risk he dissected the rectal flap from above downwards. This flap formed the anterior rectal wall and prevented contamination with fæcal matter, as there was no communication between the wound and the rectum, and prevented the sphincter from slipping down. He considered it an important point to bring the torn ends of the sphincter together and also the fasciæ. He used chromicised catgut all through, passed under the edge of the skin and all buried.

Dr. **Cullingworth**, in reply, stated that he had always got good results without seeking for the ends of the sphincter and that the drawings he had seen of this detail in the operation showed a considerable extension of the area of raw surfaces. He considered this an unnecessary addition to the operation with no distinct gain.

Society for the Study of Disease in Children.—The annual provincial meeting of this society was held on June 17th at the Hospital for Children, Sheffield, Dr. C. H. Willey being in the chair.—Cases and specimens were shown by Dr. Willey, Dr. C. N. Gwynne, Dr. J. H. Wilks, Mr. Simeon Snell, Mr. S. E. Morton, Dr. H. Leader, Dr. Arthur J. Hall, and Dr. J. G. Emanuel.—Dr. Gwynne read a paper on Osteomyelitis and Suppurative Pericarditis in a girl, aged seven years, successfully treated by operation in 1903. The femur and radius were affected. Incisions were made and were followed in three days by parotitis and pericarditis. Ten days later the pericardium was laid open and about ten ounces of pus were evacuated. A tube was inserted and removed on the tenth day. In spite of further pyæmic complications the child recovered. The heart now showed some hypertrophy.—Dr. G. Carpenter and Mr. S. Stephenson reported a case of Tubercle of the Choroid in a girl, aged three years. A very large number of fawn-coloured tubercles, of unusually large size, were found, chiefly in the region of the optic discs. Some of them invaded the retina. A diagnosis of acute miliary tuberculosis was made and verified subsequently. Death resulted 33 days after the onset, 19 after admission to hospital, and five after the diagnosis, which could not have been made with certainty apart from the state of the eyes.—Mr. J. Jackson Clarke read a paper on Certain Practical Points in the Treatment of Congenital Dislocation of the Hip by Lorenz's Method. The shortened muscles must be fully stretched and the great trochanter brought down to, or below, its normal level. In children over four years of age the adductors might require subcutaneous section. He then described the act of reduction, the application of the retention apparatus, the subsequent use of massage and exercises, and the management of special cases.—Mr. R. C. Dun described a case of Median Hare-lip, a very rare deformity. The cleft was exactly in the middle line, the incisor teeth were perfect, and there was no alveolar cleft.—Mr. H. S. Clogg read a paper on Appendicitis in a Hernial Sac, based on two cases in boys, successfully treated by operation. He stated that about 25 per cent. of recorded cases occurred in children; that the condition had been reported in quite young infants; that the appendix in a hernial sac was unduly prone to inflammation; that the condition could not be diagnosed with certainty from strangulation of the appendix or of Meckel's diverticulum; and that most cases were mistaken for strangulated hernia because of the sudden onset, abdominal pain, and the presence of a local irreducible swelling without mpulse on coughing. The presence of fever from the onset, the indefinite character and smaller size of the swelling, and the early occurrence of œdema and redness of the skin were of diagnostic value.—Papers were also read by Dr. Gwynne on Two Cases of Xanthoma Multiplex; by Dr. Wilks on a case of Sudden Death after Needle Puncture for Supposed Empyema, with specimen; by Mr. A. H. Tubby on Osteomyelitis of the Spinal Column; and by Dr. Leader on a case of Hodgkin's Disease.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—The annual meeting of this society was held at the Royal Infirmary on June 20th, Dr. C. F. M. Althorp, the President, being in the chair.—Dr. W. Mitchell read the annual report. —The following officers were elected for next session: President: Mr. W. Handcock. Vice-President. Dr. A. Mantle (Halifax). Honorary treasurer: Dr. H. J. Campbell. Honorary secretaries: Dr. T. J. Wood and Dr. Mitchell. Honorary librarian: Dr. Althorp. Honorary pathologists: Dr. F. W. Eurich, Dr. Phillips, and senior house physician, Royal Infirmary.—Dr. J. Metcalfe then proposed the following motion:—

> That this society do amalgamate with the Bradford division of the British Medical Association and that arrangements as to time and method be either left to a duly appointed subcommittee or decided by this meeting forthwith.

Dr. Metcalfe pointed out the following advantages likely to accrue from amalgamation: (1) that the profession in Bradford would be more united and consolidated than it was at present and would therefore have more influence when called upon to support the honour and interests of the profession; (2) that there would be effected a saving to each member of about 3*s.* per annum; and (3) that there would be fewer meetings necessary were they united than if they existed as separate societies as at present, each society now being under the necessity of holding so many meetings of its own.—Dr. Campbell seconded the motion and pointed out that the Bradford division of the British Medical Association was in danger of degenerating into a merely political and ethical society unless more support were given to the scientific section.—Dr. T. W. Hime opposed the motion and pointed out (1) that the proposed amalgamation would not really be amalgamation but absorption of the society into the British Medical Association; (2) that an amalgamation at present would be virtually signing the death warrant of a society which had achieved 40 odd years of honourable work and traditions, without any certainty that the division could afford them equal privileges and freedom of control; and (3) that all the advantages held out were only hopes and that even the saving of 3*s.* per annum to each member was not a certainty.—There also spoke Dr. R. Mercer, Dr. Johnson, Mr. Vaughan Bateson, Dr. A. Bronner, Dr. Rabagliati, Dr. Wood, Dr. A. H. Bampton, and Dr. Eurich.—The motion was defeated by 44 votes to 23—a majority of nearly 2 to 1.

Reviews and Notices of Books.

Paralysis and other Diseases of the Nervous System in Childhood and Early Life. By JAMES TAYLOR, M.A., M.D. Edin., F.R.C.P. Lond. London: J. and A. Churchill. 1905. Pp. 512. Price 12*s.* 6*d.* net.

Dr. James Taylor has succeeded in presenting within moderate compass an excellent account of diseases of the nervous system as they are met with among children. He describes the various conditions in simple and well-chosen language and the descriptions are illustrated with numerous reproductions of clinical and pathological photographs. Little space is taken up with discussions of disputed points. As is explained in the preface, the work is an expression of the writer's personal observations modified and extended by his knowledge of the views of others. The point of view is mainly clinical. An adequate and clear account of known morbid changes is given wherever the present state of our knowledge admits but long discussions of controverted points in pathology are omitted. The allotment of space to the various diseases has been, on the whole, judiciously adjusted, the more common forms being treated at length so as to permit of full depiction of the numerous variations which the same disease may present in different individuals. Thus meningitis, infantile hemiplegia, cerebral diplegia, hydrocephalus, intracranial tumour, infantile spinal paralysis, epilepsy, and the various forms of muscular dystrophy are exhaustively dealt with. At the same time there is an adequate and interesting account of many rare conditions such as myoclonus, hereditary cerebellar ataxy, myasthenia, family periodic paralysis, and so on. Such common affections as chorea, stammering, and night terrors are also the subjects of attractive chapters. There is such a generally high standard of excellence that there is little to provoke criticism. The chapter on syringomyelia, however, excellent as it is, seems rather dragged in when included in a work on children's diseases, and the same objection applies to the introduction of Huntington's chorea. We think that in a future edition the 20 pages of space devoted to these subjects might be given to other ordinary subjects. The book would gain by a description of migraine in young subjects and a most useful chapter might be given on the nervous symptoms accompanying and following acute febrile diseases, such as measles, pneumonia, enteric fever, and whooping-cough. Further, in a revised edition, there should be uniformity with regard to the use of the adjective denoting the presence of the bacillus tuberculosis, which sometimes appears as "tuberculous" and sometimes as "tubercular." The latter form should not now be used in that sense.

But apart from these friendly suggestions we have nothing but praise for the matter of the work and for the way in which it is presented. The style throughout is clear and very readable, remarkably so considering the complexity of the subject. The descriptions are liberally illustrated by well selected clinical cases and the numerous clinical and pathological photographs are well chosen and beautifully reproduced. Altogether we can congratulate Dr. Taylor on the production of a well-written book which will be useful alike to the busy practitioner and to the neurologist.

Principles of Physiological Psychology. By WILHELM WUNDT. Translated from the Fifth German Edition (1902) by E. B. TITCHENER, Sage Professor of Psychology in the Cornell University. Vol. I. With 105 figures in the text. London: Swan Sonnenschein and Co., Limited. 1904. Pp. 347. Price 12*s.*

THE present volume covers the first 338 pages of the well-known work of the professor of philosophy in the University of Leipsic, being the Introduction and Part I., On the Bodily Substrate of the Mental Life. The complete work consists of six parts. Some 28 years have elapsed between the publication of the first and fifth editions of the work. The author considers that when first he published his book Fechner's "Elemente der Psychophysik" constituted the only successful attempt to apply exact procedure to psychological problems. To-day accuracy of method is freely applied in this domain and workers therein are no longer challenged to prove that their endeavours are legitimate. There is a lengthy introduction to the work, comprising a philosophical survey of the subject of physiological psychology, which science is shown to involve the application of experiment and a knowledge of the bodily substrata of the mind. The reform which it seeks to accomplish in psychological investigation is compared with the revolution brought about in the natural sciences by the introduction of the experimenta method. It is necessary to remember that physiological psychology is primarily *psychology*. The six chapters of this volume deal with the Organic Evolution of Mental Function, the Structural Elements of the Nervous System, the Physiological Mechanics of Nerve Substance, the Morphological Development of the Central

Organs, the Course of the Paths of Nervous Conduction, and the Physiological Functions of the Central Parts. The criteria of mind and the range of the mental life find consideration under the first of these headings. Consciousness, in the sense of "continuity of internal states," is, it is maintained, a universal possession of living organisms from man to the protozoa. The manifestations of life, even among the lowest protozoa, are only explicable on the hypothesis that they possess a mind. The author regards it as a highly probable hypothesis that the beginnings of mental life may be dated back to the beginnings of life. The development of the nervous system is sketched at this stage and its morphological elements are described. The usefulness of the neuron theory as a working hypothesis is recognised, whilst due mention is made of the opposition which it finds, though it does not seem to us that the reasons for that opposition, so far as they depend upon the work of Apáthy and Bethe upon intracellular structure, are adequately set forth.

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Average Diets.

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	grms.	grms	grms.	grms.	grms.	grms.	grms
Proteid ...	130	100	131	134	125	114	105
Carbohydrates ...	550	240	494	523	400	551	541
Fats ...	40	100	68	79	125	54	63
Fuel value (calories)	3160	2324	3195	3436	3315	3229	3235

These figures show the dietetic standard and the dietetic habits adopted by mankind but there is no evidence that they represent the real needs or requirements of the body. There is experimental evidence to show the possibility of much lower standards of diet sufficing to meet the real physiological needs of the body. Thus Kumagawa, studying the diet of the Japanese, experimenting on himself (27 years old and weighing 48 kilogrammes), found with a purely vegetable diet containing per day 54·7 grammes of proteid, equal to 8·75 grammes of nitrogen, 2·5 grammes of fat and 569·8 grammes of carbohydrate, that the average daily excretion of nitrogen by the urine was 6·07 grammes and in the fæces 2·03 grammes—i.e., of the 54·7 grammes of nitrogen-containing food (chiefly rice) only 37·8 were absorbed and 12·7 passed out with the fæces. The total fuel value of the food absorbed per day was 2478 large calories. It is self-evident that the smallest amount of food that will serve to keep the body in a state of high efficiency is physiologically not only the most economical, but as the products of proteid metabolism are a constant menace to the well-being of the body both Scylla and Charybdis are avoided by reducing the amount of proteid to the limits of safety.

The singularly elaborate and fully detailed experiments carried out during many months on professional men, on soldiers of the Hospital Corps of the United States Army, on trained athletes of the American universities, make it plain that our accepted dietary standards are altogether too high and conclusively prove that the physiological needs of the body can be met by a greatly reduced proteid intake, with establishment of continued nitrogenous equilibrium, and with actual gain to the body. This, moreover, can be accomplished without increase in the daily intake of non-nitrogenous foods.

The careful analyses of the daily dietary, of the various excreta, all scheduled in a tabular form and occupying many pages of elaborate data justify, we think, completely the general conclusion regarding the professional class "that a healthy man whose occupation is such as not to involve excessive muscular work but whose activity is mainly mental rather than physical, can live on a much smaller amount of proteid food than is usually considered essential for life without loss of mental or physical strength and vigour and with the maintenance of body and nitrogen equilibrium." The ordinary professional man need not clog his system and inhibit his power of work by the ingestion of any such quantities of proteid food as the ordinary dietetic standards call for and "he may practise an economy in the use of proteid food equal to a saving of one-half to two-thirds the amount called for by existing dietary standards and without increasing the non-nitrogenous food consumed."

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The author makes a powerful appeal—or rather reiterated appeals, for the same statements recur—for what may be called a simple mode of living—if the phrase "simple life" has become too hackneyed. Physiological economy is not restriction to a vegetable diet, it is not even prohibition, but temperance. "Moderation in diet, especially in the taking of proteid foods, means a great saving in the wear and tear of the bodily machinery." The whole story may be summed up in the statement that in general man eats far too much proteid or albuminous food.

This is a work—a careful experimental research—that must attract the attention and the careful consideration not only of the physician and the physiologist, but it also claims the attention of the economist and the sociologist. To all of these we commend its careful perusal and we feel convinced that few who read the elaborate record of this careful chemical and exhaustive research will fail to agree with its fundamental proposition—viz., the question of intemperance in the daily dietary, more especially as regards the consumption of proteids.

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It forms an excellent epitome of all the literature up to date bearing on radio-active substances and their application to the treatment of disease.

The final section is devoted to high frequency currents. It takes up the concluding 50 pages of the volume and contains all that is really known of the subject up to the present time. In summing up the author considers that in high frequency currents we have a therapeutic agent that will be more appreciated as time goes on. He considers, and many will agree, that in local applications this form of electricity has shown its greatest field of usefulness.

The book is well got up and well illustrated. It is sure to prove a very handy and valuable volume to those who are interested in these branches of physical therapeutics.

LIBRARY TABLE.

Précis d'Accouchement Par Dr. LOUIS DUBRISAY, Ancien Chef de Clinique à la Faculté de Paris, et Dr. CYRILLE JEANNIN, Chef de Clinique adjoint à la Faculté de Paris. With 113 figures. Paris. F. R. de Rudeval. Pp. 736. Price 9 francs.—In preparing this work the authors have endeavoured to make it essentially clinical and practical in character. They have treated in especial detail the various methods of treatment and the different operative procedures recommended. Questions of less importance are discussed more briefly, but they are all duly considered and the work is a complete treatise on the art of obstetric medicine. It is divided into two parts the first is concerned with the physiology of pregnancy, labour, and the puerperium, whilst the second deals with the pathology of these three conditions. The book is written in a clear and simple manner and the authors make frequent use of short paragraphs and tables. In many instances it is especially full, as for example in the section dealing with the care of premature infants, and it will no doubt prove of value to the students for whom it is written.

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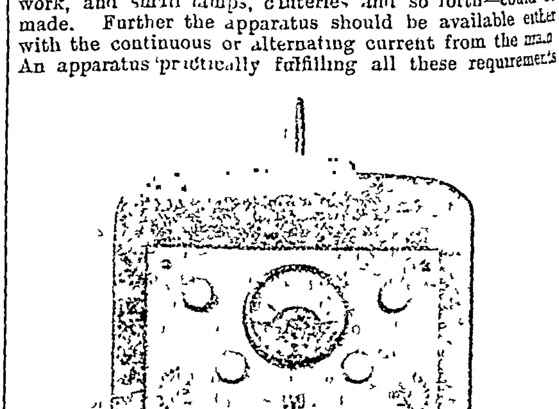

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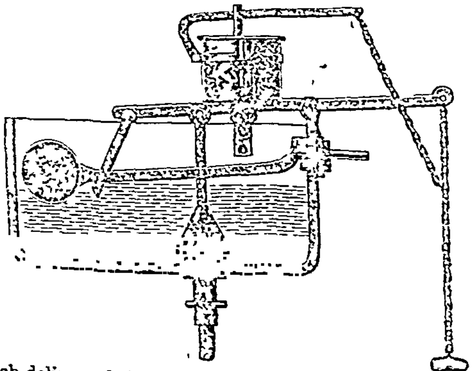

MEDICINE, ITS PRACTICE AND ITS PUBLIC RELATIONS.

CHAPTER XIX.[1]

THE AMENDMENT OF THE MEDICAL ACTS.

The Constitution of the General Medical Council.—The One-Portal System.—The Legal Prohibition of Quackery.

MEDICAL organisation, however perfect, and public opinion, however sympathetic, will not accomplish the removals of all the evils that have been displayed. They would do a great deal and would pave the way for more but the law of the land expressly permits a state of things which cannot be altered by any united effort on the part of medical men, be it ever so kindly received by the people. As long as there are over 20 ways of entering the medical profession so long will there be a certain amount of disorder in medical education and jealousy in the ranks of medical practitioners; and as long as the only existing legislation against quackery is limited to the imposition of a small fine for falsely pretending to be a medical man, so long will the charlatan, run riot amongst us. As both the disorderly condition of medical education and the impunity of quackery depend upon the wording of the Medical Acts it is not surprising that all medical reformers have put in the front of their programme the amendment of these Acts. The suggested amendments are usually as follows: (1) the alteration of the *personnel* of the General Medical Council so as to make it a more representative body; (2) the institution of one State examination by which the medical profession must be entered; and (3) the legal prohibition of medical practice by persons not registered as medical men. We may consider the amendments in that order.

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The book is well got up and well illustrated. It is sure to prove a very handy and valuable volume to those who are interested in these branches of physical therapeutics.

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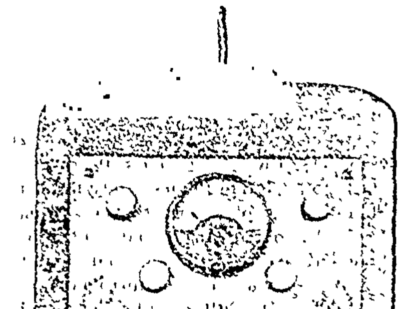

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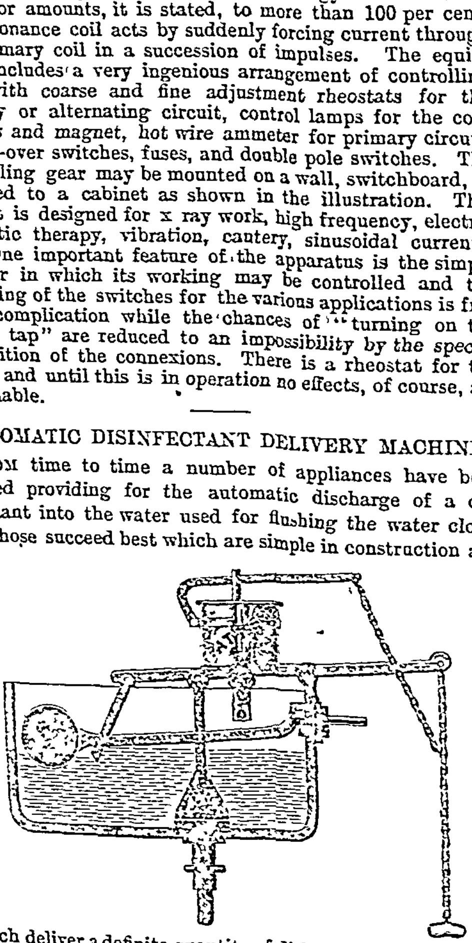

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The General Medical Council is at present made up of 32 persons, five of whom (three for England and one each for Scotland and Ireland) are elected by the registered practitioners resident in the different countries, four of whom are nominated by the Crown, and 22 of whom are chosen by the governing bodies of the 22 universities and corporations the medical tests of which admit to the Register. The universities and corporations enjoy, therefore, a very powerful position. In many directions their interests must be identical, and where those interests clash with the interests either of the medical profession at large or of the public an effective combination could be made to uphold the teaching bodies. Such an abuse of position is not as likely to occur as some would have us believe, but the question is whether it can be made a complete impossibility. The numerical ratio of Crown members and direct representatives to that of the representatives of the universities and corporations can be raised either by adding to the former or subtracting from the latter. But there are valid objections to either course. The General Medical Council is in the opinion of good judges, persons who are, or who have been, influential members of the Council, too large already. The deliberations of the Council are hampered by its size and the expense of the sessions is increased. But to take away from any of the universities or corporations their right to a representative is a serious step. The British Medical Association has prepared a Bill for amendment of the Medical Acts in which this course has been adopted in a drastic manner. The examining bodies are to send only nine representatives instead of 22. The University of Oxford and the University of London, the University of Cambridge, and the University of Birmingham, Trinity College, Dublin, and the Royal University of Ireland, the University of Edinburgh, and the University of St. Andrews under this scheme are to be bracketed together and alternately disfranchised, while the representation on the Council of the corporations is to be curtailed still more rigidly. The number of direct representatives is to be increased from five to eight and a dental representative is to be added. In this way the *personnel* of the Council is changed from 32 to 23, while the representatives of the examining bodies can be put in a minority by unanimous action on the part of the Crown members and the direct representatives. The attempt to reduce the numbers of the Council so made is a brave one but the deprivation of certain examining bodies, though only temporarily, of their votes is a step so serious that it must certainly provoke opposition. To take the educational function of the General Medical Council into consideration alone, it would be clearly inadvisable that a debate should be held upon the educational standards of a university or a corporation without there being present at the Council table a representative of the body in question. On the other hand, to increase the General Medical Council until a combination of the representatives of the examining bodies could not outvote the rest of the Council would mean adding 12 more members at least as Crown representatives or direct representatives. And addition could not end there, for the examining bodies tend to increase in number—the University of Birmingham, for example, obtained a representative in 1903 and Liverpool one in 1904, while the University of Wales, the University of Leeds, and the University of Sheffield will presumably have the same privilege granted to them shortly. Each such addition must be counterbalanced if the chance of abuse of power on the part of the educational bodies is to be removed, and the Council would tend to become in the end an unwieldy body.

The difficulties involved in alteration of the numbers of the Council have led to the suggestion that the medical profession as a whole might be more adequately represented upon the Council if the representatives of the qualifying bodies were chosen by the vote of the members of the corporations, or by the medical graduates of the universities, instead of being delegates from the respective ruling bodies of the universities and corporations. Undoubtedly if the representatives of the educational bodies were chosen by the votes of the constituency at large the general practitioner would feel himself much more fully in touch with the disciplinary body of the profession. He would have a vote for the election of his own representative, which is in accordance with all popular notions of reform, but there is none the less a good deal to be said against the idea. The university graduates (at any rate an ascertainable portion of them) do not ask for the privilege of voting for their representatives on the General Medical Council, while the charters of the corporations appear to vest the power of appointment of a representative on the Council in their governing bodies. Before the reform can take place these charters must be abrogated. Again, elections are a weariness to the voters, as is shown by the small number of medical men who register their votes at the comparatively infrequent elections for direct representatives on the General Medical Council. Elections also impose much trouble and annoyance upon candidates and it would not be easy in all instances to secure the candidature of the best man, because he would not care to submit himself to the worries and personalities of an election. It may be all in a day's work for a politician, but a medical man is not inured by his professional life to being called, even by implication, a time-server, an anarchist, or an idiot, which might be the fate of any candidate who happened to seek election to the General Medical Council at a time when medical opinion was divided and feelings were running high. We have only to refer to the incidents of the election for direct representatives in 1901, when the registration of midwives was on the *tapis*, to feel certain of this. A large section of the medical profession at the time was bitterly opposed to the suggested legislation and the amenities of debate were considerably strained by the champions of either side. This acrimony could again be caused by the public discussion of many topics of politico-medical or ethico-medical interest and a series of elections might come to mean a series of rows. Besides it is, to say the least, doubtful whether the medical profession would be better served if the representatives of the various examining bodies were to be selected by the whole constituency. Such a body as the Council of the Royal College of Surgeons of England, for example, is sure to be represented under existing methods by a tried and capable official—a past examiner familiar with educational theory and routine, a man who can carry weight among his colleagues on the General Medical Council. His qualities are known *au fond* by the Council of his College before the interests of the College are confided to him. But if the Fellows and Members of the Royal College of Surgeons of England, a constituency of 18,000 persons, were allowed to select one man among them as a representative the chances of their choosing the man who asked most urgently for their suffrages and who was most prolific of promises would be great. And similarly great would the chances be that such a representative would turn out a failure on taking his seat at the Council board. I have selected the Royal College of Surgeons of England as an example, because it is a very large constituency, numbering over 18,000, governed by a very small body which, in its turn, is elected by an upper class numbering about 1200—that is to say, that 17,000 Members of the College have no voice in the election of their representative on the General Medical Council either directly or indirectly.

There is a way out of this position. The Council which chooses the representative might itself be elected by the 17,000 Members and not by the 1200 Fellows—a liberal development that has for three-quarters of a century been urged by THE LANCET. And in a similar way the General Medical Council might be liberalised throughout. The Council of the Royal College of Surgeons of England is understood to have no serious objections to the change of constitution by which it would itself become a representative body, and at one time a majority of the Fellows, who might be expected to wish to retain their constitutional prerogative, was actually in favour of the reform. THE LANCET aided the movement unceasingly and a decade ago it seemed that the Members of the College were in a fair way to obtain a share in the management of their affairs, but the untactful behaviour of a few "whole-hoggers" ruined the *entente cordiale* between Fellows and Members. Relations could be renewed again if the proper course were taken. This is a very suggestive fact, for if the governing bodies of the corporations were selected by the members of the corporations then the members would feel that representatives appointed to the General Medical Council by such governing bodies were really appointed by the corporations as a whole—that is, by themselves—and their confidence in the deliberations of the General Medical Council would be much increased. The change in the constitution of the General Medical Council that would be produced by the change in the election machinery of the various universities and corporations need not be great, but it would be a wise and good reform, because it would give the General Medical Council more the character of a popularly elected body. To proceed further in making the Council popularly elective would be to call n the members of the profession to go frequently to the tings, and this they would not do, nor is it certain that best candidates would seek their suffrages.

2. *The One-Portal System.*

Ve come next to the proposal that all medical men uld enter the medical profession after passing one te examination. The "one-portal system" has been ired ardently by some of the most liberal thinkers doing away with all possible opportunities that some dents may enjoy for entering the medical profession upon ier terms than their fellows; and the British Medical sociation has provided in its new Bill for a State examina- n to precede admission to the Register. The simple y of securing a one-portal system that would give isfaction to the medical profession would be for the ite to hold identical examinations in certain capitals and iversity towns simultaneously and to admit the successful ndidates to the Medical Register under the title of M.D., or least with the clearly specified right for each man to call mself "Doctor." As far as the public would be concerned medical men would then be equal, and any favour which a an enjoyed with the public would be due to his work and s character. Appointments would no longer be open only graduates of certain universities or diplomates of surgery certain corporations. Every candidate for a post could oduce, as additional evidence of fitness, any testamurs at he possessed, but the non-possession of them would bar man from competing. The London student, working in e splendid clinical field of the metropolitan hospitals with e elaborate scientific environment of a metropolitan edical school, when entering private practice would no nger find himself described as "not a real doctor" ecause he did not possess a university degree. All edical men would be equal in the eye of the public nd the substantial grievance under the present *régime*, hat of two equally well-informed men one has and e other has not an academic right to the popular title f "Doctor," would disappear. Is there anything to be said gainst so simple a reform, so sure a way of making edical education uniform, so obvious a way of avoiding a ultiplicity of examinations, so complete a way out of the ifficulties that have arisen from the use of the word "Doctor" s a popular style as well as an academic title? Unfortu- ately, there is another side to the question; the institution f a State examination to the medical profession would robably be opposed by the medical corporations. The Universities might have nothing to say against the immediate doption of such a system but the corporations would be likely to take an opposite view. A student commencing his medical career at a university would naturally desire to graduate in medicine at that university. He would pass any examination additional to the State examination and pay any fees additional to the State fees, so that he might receive the hall-mark of his *alma mater*. But the student not entering the medical profession by way of a university, having passed the State examinations in medicine, surgery, and obstetrics, and having obtained a place on the Medical Register with the right to style himself "Doctor," would have little inducement to seek from a College or a Hall any Diploma? The honour diplomas or fellowships might still command candidates, but the rank and file of the medical profession would hardly consent to pay fees for pass diplomas when they already possessed the legal title of "Doctor." The corporations would probably suffer considerably, so that a one-portal system would have far-reaching consequences of a sort that must provoke opposition. And very awkward opposition, too, for the presidents and office-bearers of the Royal Colleges have a way of being the friends as well as the medical advisers of those who make the law of the land, and an amendment to the Medical Acts which the Royal Colleges decided to oppose would have but small chance of becoming law. A final examination of all students, wherever educated, for the right to a place on the Medical Register with the title of "Doctor" has so long been the conception of the reformer that the idea cannot be given up without reluctance; indeed, it should not be given up altogether, but those who hope for it will surely have to exercise patience, for no such reform will immediately be granted.

3. *The Legal Prohibition of Medical Practice by Persons not Registered Medical Men.*

Such a prohibition would be to do away with the impunity now enjoyed by quacks and would necessitate an alteration of the Medical Acts of a decided sort. The Medical Act of 1858 in its opening clause says that the Medical Register is to enable the public to ascertain who is and who is not a *bonâ-fide* medical practitioner, but it leaves the public to choose between the qualified man and the quack, merely supplying the necessary information so that the choice need not be made blindfold. The State recognises nothing but the qualified man. Only he can give a death certificate, or medical evidence, or express a medical opinion of any sort that will carry legal weight. But anyone in this country can practise medicine and practise it for gain; the law will only interfere with a man who says he is a registered medical practitioner under the Act when he is nothing of the sort, or who pretends to have a legal position as a medical man. The amount of that interference is shown by Clause XL. of the same Act, which runs as follows:—

> Any person who shall wilfully and falsely pretend to be or take or use the name or title of a physician, doctor of medicine, licentiate in medicine and surgery, bachelor of medicine, surgeon, general practitioner or apothecary, or any name, title, addition, or description implying that he is registered under this Act, or that he is recognised by law as a physician, or surgeon, or licentiate in medicine and surgery, or a practitioner in medicine, or an apothecary, shall, upon a summary conviction for any such offence, pay a sum not exceeding twenty pounds.

It is quite clear that almost no one will ever be convicted under such a clause. An irregular practitioner has only to tell the public that he belongs to no benighted medical corporation, but is practising upon some eclectic system of his own, to escape all penalty for his action. This position ought to be altered and as public appreciation of science grows it will undoubtedly be altered; but before Parliament will sanction reform it will have to be clear to the country that restraint upon quackery is called for on public grounds. Medical men naturally, but unfortunately, have been in the habit of regarding everything in the nature of medical treatment by unqualified persons as so productive of evil that they have a little blinded themselves to the fact that their fellow-men are free agents, free to ask whom they like to treat their bodies or their souls. A man need not belong to the Established Church because he happens to be an Englishman, nor need he employ a registered medical man. This must not be forgotten nor must the effect of coercion be disregarded. Any attempt to make it illegal to employ unqualified men might lead to a still larger employment of them, for the public would consider the restraint imposed upon it intolerable. Members of the public have a right to consult whom they like when they are sick, even no one at all if it is they themselves who are sick and not their infant children. Yet there are good grounds for Parliament interfering with the present unbridled liberty of unqualified practitioners and it is certain that the wiser sort of the community would welcome an attempt to do so. The misery that is wrought by quacks, the lives that are sacrificed by their lust for gain, the false hopes that are inspired by their advertisements, the hard-earned money that is wasted upon their rubbish,—all these make it necessary in the public interest that a check should be put upon the nefarious practices of charlatans. In the Medical Acts Amendment Bill, prepared by the British Medical Association, there is a clause to meet the situation, which runs as follows:—

> *Penalty for practice by unregistered persons.*—Any person who is not registered under this Act and who medically treats patients, or otherwise practises medicine, surgery, or midwifery, or performs any surgical operation for which he demands or receives any fee, gratuity, or remuneration, and also any person who not being registered under the Act, pretends to be, or takes or uses the name or title of physician, or surgeon, doctor of medicine, licentiate of, or bachelor of, medicine or surgery, or master in surgery, or assumes any other style, title, addition, designation, or description, either attached to the name of the person or to his place of residence or business, or otherwise exhibited, implying that he possesses the skill and knowledge necessary for the practice of medicine, surgery, or midwifery, or that he is recognised by law as a physician or surgeon or licentiate, in medicine or surgery or midwifery, or a practitioner in medicine, or an apothecary shall be guilty of an offence under this Act, and shall on summary conviction under the Summary Jurisdiction Acts be liable (1) for the first offence to the penalty of not less than ten and not exceeding twenty pounds, and to imprisonment in default of payment of not longer than two calendar months; and (2) for each subsequent offence to a penalty of not than less twenty and not exceeding forty pounds, and to imprisonment in default of payment for not longer than six calendar months.

With this clause every medical man must be in accord, and members of the public who have realised the real dangers of quackery, its horrible menace to public health, its extraordinary depletion of the public purse, should take the same view. The clause wants certain modification, as it must be made quite clear that the ministrations of the neighbour, the nurse, or the masseur are not illegal, but with this alteration it would serve the purpose of protecting the public. It would not stop quackery, for while men are greedy there will be disgraceful advertisements and the money of the public will be divided between rogues and the proprietors of unscrupulous newspapers. But this scandal would be lessened if the complete impunity of the quack were lessened. The chances of fine and imprisonment would give pause to the quack desiring to claim openly "that he possesses the skill and knowledge necessary for the practice of medicine, surgery, or midwifery," and editors could not plead convenient ignorance concerning convicted quacks when the propriety of an advertisement was called in question.

But though an amendment of the Medical Acts which should prevent quackery is called for, and although to many medical men the call seems particularly loud and clear, no legislation is likely to occur without opposition. Parliament in its dislike to the appearance of granting a monopoly to any class, will require much persuasion, and even here there is wanting the unanimity of voice among medical men, the lack of which has been noted as standing in the way of so many reforms. Legislation against quackery appears to some of the most enlightened members of the medical profession unnecessary and undesirable as savouring of an undignified protection of true science. More than half a century ago, when the question of making unqualified practice illegal was being discussed, Sir Benjamin Brodie spoke strongly against the view. He urged that the medical profession should stand or fall upon its merits and did not require any legal protection. Things have changed for the worse since Sir Benjamin Brodie's time, yet we know that even then quackery was rampant. The dignified attitude that this great surgeon took up is one that many medical men will be found to adopt to-day, and even legislation against quackery will not be pressed upon Parliament with the complete unanimity of the medical profession that might have been expected.

While the majority of medical men, at any rate of those who give heed to the public relations of medicine, are in favour of amendments to the Medical Acts on the lines that have just been discussed, it must be borne in mind that no legislation is likely to occur without considerable struggle. The reasons for the alteration of the constitution of the General Medical Council are not incontrovertible, while no alteration, it would seem, can be suggested that will not give rise to some friction among the bodies to be represented, and so prevent that unanimity of view that the public will almost require of the medical profession before it will give support to any amendment of the Medical Acts. The institution of a State doctorate, though so desirable a reform, can hardly take place without seriously damaging the various medical corporations. Anything like drastic prevention of quackery by law, though this would mean a saving in lives and money to the nation of many thousands of pounds annually, is sure to be resisted strongly when it is mooted in Parliament.

These things must be remembered and the difficulties ahead should make medical reformers additionally anxious to be unanimous in their aims.

(*To be concluded.*)

THE MEDICAL CURRICULUM.

Mr. John Tweedy, the President of the Royal College of Surgeons of England, speaking at the prize-giving at the Medical School of Westminster Hospital on June 28th, drew attention to the present condition of the medical curriculum and observed that there was danger sometimes in over-rating mere academic successes during the student's earlier life. After all, the medical profession required the power of doing something and successes in class examinations might only imply a power of acquiring knowledge. Knowledge and power, he need scarcely tell them, were two very different departments of life. Knowledge was not even synonymous always with wisdom. Many of them, no doubt, would remember Cowper's lines:—

> "Knowledge and wisdom, far from being one,
> Have oft-times no connexion. Knowledge dwells
> In heads replete with thoughts of other men;
> Wisdom in minds attentive to their own."

When a student came to a medical school very often to his surprise, instead of beginning, as he imagined, the practical study of his profession, he found that he had to encounter several so-called preliminary sciences—chemistry, physics, and biology—before he could begin what are known as the early medical subjects of anatomy and physiology. That arrangement had been forced upon them by the kind of patchwork legislation that had been going on in the medical curriculum during recent years. If he were to criticise the medical curriculum he believed he would have the sympathy of a good many of those present when he said that the first thing he should like to see in it was a great simplification. So far from adding bit by bit to the burden which the student nowadays had to bear, he would take off a good many of the subjects which were now put upon the over-burdened student, taking care that he had more time for the thorough training of his faculties and the training of his powers of observation, instead of merely converting himself into a grinding machine in order to pass examinations. The teaching of these preliminary subjects in medical schools connected with hospitals had stood in the way, for some time, of the best medical education and he congratulated the authorities of Westminster Hospital on being the first to complete the arrangements for removing the teaching of those *preliminary subjects from a medical* school and arranging for the students to study those departments of natural science at a science institution. That was good, he was sure, for the medical students and it was good for medical education. The practice of medicine was largely one of applied science, and it was but right that those who were about to enter upon the medical profession should be trained in scientific methods. Those methods could best be taught in great scientific institutions. So long as the teaching of those preliminary sciences was kept in the medical schools one could not but feel that their importance as disciplines of the mind was somewhat lessened. On the other hand, the men who learned physical science in a great science centre benefited by great traditions and they acquired the best methods of observation and of reasoning. The student's scholastic training was generally a literary training, a training in which authority counted for everything; but in sciences authority counted for nothing except so far as it was based upon accurately observed data. That was one of the great benefits which medical education would derive and medical students would *gain from eliminating those preliminary* sciences from the medical course of studies at a hospital. Assuming that the student had completed his preliminary science training and had also completed those earlier medical studies, such as anatomy and physiology, upon the importance of which it was unnecessary for him to dwell, he then came to the great work of his life, the study of disease in the wards of the hospital, and he insisted that it was the work done in those wards that determined a man's career. An experiment was to be tried at Westminster Hospital in regard to the lectures to be delivered there. Instead of having the whole course of lectures on systematic medicine or systematic surgery given by one man it was proposed to break up those subjects and to intrust to different members of the staff different subjects. That was an experiment for which much might be said and it was an experiment which he should watch with a good deal of interest. He hoped, however, that in that arrangement there would not be neglected what he thought was necessary in all studies —a sort of propædeutic or introductory course expounding the great principles of medicine and surgery. If that were done he thought the experiment of handing over the several departments to experts might be successful. Otherwise he feared that it would lead rather to too early specialisation. Students were prone to think that medicine was so rapidly progressive that knowledge soon became obsolete, but the knowledge which students would acquire in the wards of the hospital during their course of training would be the basis upon which they would have to build the whole of their practice in the future. Knowledge grew, but truly and carefully observed phenomena did not change. Their conceptions had to be changed, their explanations of phenomena had to be readjusted, their theories often had to be recast entirely, but the fundamental problems of knowledge remained the same. If the clinical cases which might come under their observation were observed by them without prejudice they would constitute the true foundation of their knowledge and remain as the working capital of the whole of their subsequent lives.

THE LANCET.

LONDON: SATURDAY, JULY 8, 1905.

The Romanes Lecture: "Nature and Man."

THE title selected by Dr. RAY LANKESTER for his lecture the Sheldonian Theatre at Oxford is one which must vitably attract the attention of members of a profession cerned in daily observation of problems presented by Nature and Man." That the subject should be approached h some degree of vehemence will cause no surprise; Dr. Y LANKESTER has on many former occasions demonstrated power of expressing his views with an energy which nost challenges contradiction, since it betrays a strong rtisan spirit with an air of intolerance, doubtless accintal and unintentional, for the opinions of those with iom he differs. Most medical men must be credited th convictions about the true relation of nature to man d yet may hesitate to follow the line of argument in this cture or to express entire concurrence with its logical conusions. In contradiction of POPE's dictum that the proper udy of mankind is man we are presented with an altertive study of nature as comprised in physics, chemistry, ology, and biology. It might be hastily considered that r. RAY LANKESTER, *speaking* on such a theme, would giving us the shoemaker's view of the value of leather it this would be an injustice to the amount of thoughtful gument displayed in the course of the lecture. Dr. RAY ANKESTER believes that "the time has arrived when the ue relation of nature to man has been so clearly ascertained iat it should be more generally known than is at present ie case, and that this knowledge should form far more rgely than it does at this moment the object of human ctivity and endeavour—that it should be in fact the guide of tate Government and the trusted basis of the development human communities." He employs the word nature as a ame for the "entire mechanism of the universe, the kosmos all its parts," and he maintains that man has attained n extraordinarily complex control of the conditions in which is life is carried on. While man is a part of nature, a roduct of the definite and orderly evolution which is niversal, he is driven by the relentless mechanism which we all nature, and "it is his destiny to understand and to ontrol it." This view seems rather revolutionary; it almost epresents man as a child who, having learnt to some extent iow the wheels go round, is to be encouraged to attempt to egulate their action or even to try to produce new results y interfering with the works.

There can be no doubt that man has not been content to remain a passive spectator, that his will or olition has become a power in nature, which has proundly modified not only his own history but that of the whole living world and the face of the planet on which e exists. That man is to be regarded as "nature's rebel" is shown by reference to recent progress, to the immensely increased facilities in the application of mechanical power, in locomotion, in agriculture, and in endless arts and industries; and, on the other hand, equal progress has attended measures which he has adopted for the relief of disease and pain. The primary lesson which must be learnt from a consideration of any scientific history is that there is no finality—no stage at which it is possible to rest content with past achievements. The march of progress is endless and relentless. Dr. RAY LANKESTER asserts that civilised man, in his rebellion against natural selection and his defiance of nature's pre-human dispositions, has produced such a special state of things that he must either go on and acquire firmer control of the conditions or perish miserably by the vengeance certain to fall on the half-hearted meddler in great affairs. He is threatened on every hand by dangers hitherto restrained; no retreat is possible; the only hope is to control the sources of these dangers. The section of Dr. RAY LANKESTER'S address dealing with disease is one replete with interest, serving to present many familiar facts in a new light, and for the benefit of medical readers we may say that the address has been issued as a pamphlet. While nature eliminates those diseased or liable to disease man continually rebels and endeavours to prolong life. From the standpoint of the biologist the congenitally diseased are destroyed, as far as race development is concerned, before they can reproduce; parasites either carry off the congenitally weak (and thus strengthen the race) or become harmless by the survival of individuals capable of tolerating attacks without injury, and so we have the establishment of immune races. It is asserted that with few exceptions every disease to which animals are liable is due to man's interference. By treating disease man staves off the "adjustment by death" and thus accumulates vast populations of unadjusted human beings, animals, and plants which from time to time are ravaged by disease. This fact affords no material for discouragement to Dr. RAY LANKESTER but forms the immediate prelude of the cheering statement that the knowledge of the causes of disease is so advanced that it is practically certain that by the application of methods of investigation and consequent controlling action "all epidemic disease could be abolished within so short a period as 50 years. It is merely a question of the employment of the means at our command." We should not have ventured to go so far ourselves but undoubtedly it would be as bad to set a limit to what might be effected by the diligent application of the results of pathological research as it is to prophesy immediate and sweeping issues from the same. But unless the work of research is definitely encouraged at our seats of learning and education these results will not produce any great revolution. And it may be freely granted that Dr. RAY LANKESTER is right in holding that research is discouraged in this country by the comparative lack of State recognition and financial support. If more men and abler men were employed in study and experiment better results would be obtained in a shorter time, and these results would be of "greater significance to mankind than the emendation of a Greek text or the determination of the exact degree of turpitude of the statesmen of a bygone age." The supersession of the classical and historical scheme of education by a scheme of education in the knowledge of nature is Dr. RAY LANKESTER'S suggestion for our future guidance and he advances his views with characteristic vigour and wit. Scholars in history and adepts in classics will not think him fair or unprejudiced, while many—and among them many medical men—will see no possible objection to the immediate adoption of his views, so that the excitement created by the Romanes Lecture of 1905 was to be expected.

The knowledge of nature intended by the lecturer had already been defined as that comprised in physics, chemistry, geology, and biology, subjects which, with the exception of geology, now form part of the training of medical students, and Dr. RAY LANKESTER believes that every man of even a moderate amount of education should acquire a sufficient knowledge of these subjects to enable him to appreciate their value and to take an interest in their progress and application to human life. Those who have watched the study of natural laws by medical students are not in unanimous agreement with this view. Perhaps it will be argued that the poor results of the instruction of medical students in natural science are due to the novelty of the subjects and to the lack of adequate previous training. Still, what now happens in the case of medical students might well happen, at any rate for some time, among all students if a course of instruction in natural science became compulsory. There might be great danger in the possession of a mere smattering of scientific jargon by the man in the street, and it must not be forgotten that with no classical training scientific terminology is likely to cause grave difficulties to the average schoolboy. While we should gladly welcome public measures producing a greater number of scientific workers, it may be well to maintain an open mind as to the value of wholesale change. It is impossible to expect that every schoolboy is in future to be trained as a scientific investigator, though it is desirable that greater encouragement should be afforded to those with scientific aptitude. Dr. RAY LANKESTER is to be congratulated on the courage with which he has advocated his views in his lecture. It may be feared that his references to classical and historical studies are not likely to be of much service to the advancement of science, and the assertion that the University of Oxford is exercising an injurious influence upon the education of the country does not seem to us warranted. Already there is a scheme for the development of technical science by the formation of an Imperial College of Applied Science in London but this is not antagonistic to the classical and historical schemes of education associated with the older universities.

The Prevalence of Cancer.

THE question as to whether cancer is increasing amongst the population is one which is continually being raised, both by the public and by members of the medical profession. The recent discussions which took place at meetings of the Life Assurance Medical Officers' Association demonstrated that some difference of opinion on this point still exists even amongst those who have given a large amount of thought and time to the subject. An answer can unfortunately only be given by the study of statistics. Such a method is generally acknowledged to be liable to fallacies and various speakers pointed out the errors that may arise in the different courses which have been adopted in the endeavour to arrive at the truth.

The discussion was opened by Dr. W. S. LAZARUS-BARLOW and Dr. GORDON TAYLOR who had prepared a paper entitled "The Evidence yielded by the Statistics of the Middlesex Hospital on the Question of an Increase of Cancer." An ingenious plan of obtaining statistics had been adopted. If a person dies in a hospital at the age of, say, 50 years, the actual year of his birth can be deduced from the year of his death. Therefore, if the post-mortem records of a hospital over a number of years are examined and each case is marked on a previously prepared sheet under the year of his birth a population is created by working backwards from the deaths of individuals. By this means, the authors of the paper maintained, it was possible to ascertain whether the proportion of deaths from cancer during a certain period had increased or otherwise. Several fallacies in the method were pointed out, not only by Dr. LAZARUS-BARLOW and Dr. GORDON TAYLOR, but also by subsequent speakers. From the very nature of the case it is clear that the results deducible from these statistics cannot be directly applied to the entire population. The class from which a general hospital draws its patients is insufficiently representative of the entire community. The patients are to a certain extent selected and we think that it may fairly be urged that especially is this the case at the Middlesex Hospital. In this institution there is a wing entirely devoted to cases of cancer and thus there is a probability that a larger proportion of such cases would be admitted in contrast to other cases than would be found amongst a similar number of individuals amongst the general population. Nevertheless, these statistics are of great interest and at any rate they show what is the experience of this particular hospital. A similar examination was made of the records of St. George's Hospital. At both hospitals it was found that from the time at which the statistics were first calculated (about 1830) to about the year 1870 there was an increase in cancer amongst women and a stationary high level had been maintained from that time to the end of the century and at both hospitals there had been in men a steady increase of cancer from the earliest date (1830). From a further investigation it was concluded that the increase in cancer was somewhat intimately associated with the alimentary tract in both sexes. Dr. J F PAYNE was also of opinion that the number of cases had increased in recent times and he agreed that a great part the increase was due to malignant disease of the digesti tract "from one end to the other," basing his opinion up the statistics of the Registrar-General for England Wales and for Ireland respectively Dr. A. NEWSHOL expressed his belief that there was no trustworth evidence of a true increase in the rate of m tality from cancer. He did not, however, state grounds upon which his opinions were founded. admitted, on the other hand, that the disease causes high mortality in all civilised countries. He pointed that in England cancer is reputed to cause, according to returns of the Registrar-General, a mortality of about 0·8 1000 of the population. He further stated that he consider that this figure is an under-statement of the real facts that when a more complete registration of all the dea vhich are due to malignant disease is established it will found that the deaths will be at least 1 per 1000 of population and judging by some local returns in his session he feared it might be as high as 1·2 per 1000. The neral opinion expressed in the course of the discussion was cidedly in favour of the view that during recent times ere has been an increase in the mortality from cancer. r. R. HINGSTON FOX, however, drew attention to the signiant remarks to be found in the second report of the nperial Cancer Research Fund. In this report no definite ew is expressed on the point which we have been discussing ut it is intimated that the extent to which cancer is ecorded is inversely proportional to the difficulties which ave to be overcome in obtaining information. Therefore he conclusion is reached that the data at present to hand re not sufficient upon which to form an opinion as to the lleged increase of malignant disease. The whole subject nust be *sub judice* but satisfaction may be felt in the nowledge that the last report of the Cancer Research Fund, is will be seen by reference to another column of this ue (p. 104), shows that researches are being undertaken hich may at any moment end in definite results.

Before concluding we may draw attention to another point hich was raised by Dr. HINGSTON FOX in the discussion—amely, as to whether the taking of alcohol has any influence producing cancer. Great difficulty must naturally be xperienced in investigating this question, but the evidence dduced from the death claims of life insurance offices is oubtless of considerable value. Dr. NEWSHOLME referred o statistics which he had published[1] based on three years' xperience of the United Kingdom Temperance and General Provident Institution, a large society which has two completely independent experiences, that of abstainers and that of non-abstainers. Without going into detail he stated that it was found that the death-rate from cancer amongst the abstainers was 0·95 per 1000, and amongst the non-abstainers it was 1·34 per 1000. In other words, if the death-rate from cancer amongst non-abstainers be taken as 100, it would be 70·9 amongst abstainers, or 29 per cent. less. Dr. HINGSTON FOX urged that further support of the relation of the use of alcohol to the increase of cancer was to be found in the frequency with which the disease attacked the digestive organs, suggesting that alcohol might have some deleterious local action on the mucous membrane of the stomach and the intestines. These remarks cannot be accepted as more than suggestive. It would be rash without further evidence to conclude that there is an etiological relationship between alcoholism and cancer.

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Pathology in the Streets.

IT is the medical man's privilege or penalty—for he may regard it either way—that his profession is always with him, and that whether he will or not he must needs view his fellows with something of the critical attitude that he adopts towards his patients. He is always, so to speak, on sentry go, and cannot, like the majority of professional men, emerge at will from the beaten path of his life-work. The solicitor may rise from his desk, shut away his documents, and leaving his office tread the streets in entire forgetfulness of the particular education that earns him his bread. The medical man cannot do this. Even if he be heedless in a general way of what goes on around him, still he remains an observer from the point of view of his own science. This is the groove that the nature of his calling has planned for him and he cannot escape it, however much he may be at leisure. It was half-way to this standpoint that CARLYLE in his "Sartor Resartus" would have led the academic mind, but only half-way, since the medical man's eyes look out upon a humanity, not merely stripped of clothes, but displaying its vital organs to his inspection. The medical man must to a larger or less degree remain the pathologist in the streets. It is, as we have said, doubtful whether this is a privilege or a penalty. But the medical man is seldom a sentimentalist in the accepted sense of the word; and the unsuspected tragedies which unfold themselves before him are well enough balanced by the compensations that smooth their path and the comedies that rub shoulders with them on either side. SHERLOCK HOLMES owed both his prototype and his creator to the ranks of the medical profession and if we recollect rightly his powers detected as many innocents as criminals. And it is just this balance that saves the medical man's peace of mind from any morbid result of his instructed vision.

That there is a grim side to the question cannot be denied, for to the medical man more than to any man superficial appearances are no disguise at all. To him the pathological truth becomes apparent, even in the briefest journey, sunning itself on the pavement or hurrying, bag in hand, to railway station or crowded mart. The medical man is on nodding terms with death at most street corners in our larger towns, and if he were called on to prophesy his knowledge might well make him a very JEREMIAH among his fellows. For who else would suspect the sword of DAMOCLES that is hanging above this red-faced merchant or see in his cheeks the signal of a fruit overripe? To the lay mind this portly person stands for all that is prosperous and confident, and his appetite is the envy of many of his dyspeptic friends—who will send wreaths to his funeral. See the bluff and kindly manner with which he hands his shilling to a thin-faced woman selling bootlaces in the gutter. It is only the medical man who would dare to prophesy white hairs for her long after her benefactor has been gathered to his fathers. There may be no great tragedy in this. There is more, perhaps, behind some sunburnt cheeks that make all these other jostling faces look pallid and worn by contrast. The layman glances curiously at them and covets their brown-red hue; the medical man is quick to recognise the imprint of the health resort, other things pointing to an ominous diagnosis. There are other instances where disease is rather suggested than revealed by the appearance of its owners, cases where the medical man cannot help suspecting the presence of a cirrhotic liver, granular kidneys, and the like. These are the cases that do not obtrude themselves upon the average man in the street and form the group that, according to his humanity, makes the medical man pay the highest price for his wisdom. But in the more obvious pathological lesions he begins to discover its solace. For here he becomes able to judge, as no other man can, of their relative significance. He does not share the pity that runs through the crowd as some chalk-faced patient, with his arm in a sling, walks slowly and painfully along the pavement, for his prophetic instinct shows him this same man, two or three months hence, wielding a spade or hunting four days a week, leading, in fact, a perfectly healthy physical existence in accordance with the sphere in which he lives. On the other hand, the woman with the curious red spot upon her face, half hidden by hair and a veil, affords him a far more sombre chapter for reflection. For whether it be lupus, or epithelioma, or a rodent ulcer, and whether it be treated or not, it will have meant, when these same months have passed, a far greater obsession of bodily and mental pain than that of any broken limb. Such cases as these are fairly balanced and the medical man has no greater distress in his perambulations of the streets than the average observant layman, only he pities those whom the layman does not observe, and sees no great hardship in the plights that must appeal to the uninitiated.

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[1] Brit. Med. Jour., December, 1903.

In the last of the pathological groups to which we shall refer the medical man's knowledge is really useful. For we must all know the picture of the chronic invalid and cripple who year by year drags his deformed limbs before the pitying eyes (and purses) of his fellow-citizens and it is not difficult to imagine the feelings that are harrowed by so sorry a sight. As often as not, too, these victims wear an expression of the profoundest suffering which may impose upon many but cannot often deceive the trained eye. To the medical man it is perfectly evident that these ankylosed joints can have caused no pain for years. He recognises some old tuberculous trouble, arrested long ago, and never likely to recur unless the misguided patient shall submit to a so-called cure at the hands of a bone-setter, who will break down the adhesions and light up the old trouble afresh at the expense of an apparently straightened limb. The medical man, again, can tell very quickly that these congenitally dislocated hips are no warrant at all for the anguished look of their possessor whose abilities for the enjoyment of life are probably as great as those of most of his commiserators. Such cases as these, and they are too common upon our streets, cause the medical man to smile rather than to sigh and here his education will spare him many of the pangs that assault the softer-hearted of his comrades. And so the streets stretch out before him an infinite field for research and wonder and filled with all manner of substance for meditation. And with it all it is well to remember the exuberant sea of vitality that must abundantly overwhelm the pathological, even in the streets of London. And, doing so, the medical man of to-day will hesitate perhaps to subscribe to the opinion of old Sir THOMAS BROWNE in his "Religio Medici," that the world is "not an inn, but an hospital; and a place not to live, but to die in."

KING'S COLLEGE HOSPITAL.—The executors and trustees of the late Miss Marianne Frances Hasker have promised a donation of £20,000 towards the fund for the removal of King's College Hospital to South London.

Annotations.

"Ne quid nimis."

THE BIRTHDAY HONOURS.

Professor T. McCall Anderson, Mr. T. F. Chavasse, Dr. P. S. Jones, Dr. W. J. Smyly, and Dr. E. S. Stevenson have each had conferred upon them the honour of knighthood. Professor Thomas McCall Anderson, who is Regius professor of medicine at the University of Glasgow and the representative of his *alma mater* on the General Medical Council, graduated M.D. of Glasgow with honours in 1858 and obtained the Fellowship of the Faculty of Physicians and Surgeons of Glasgow in the same year. As the dean of the Medical Faculty of the University of Glasgow and as examiner in medicine and pathology to the Army Medical Service and the Indian Medical Service he has done good work in the interest of his profession and is the author of several books on cutaneous diseases and tuberculosis. Mr. Thomas Frederick Chavasse, the senior surgeon of the Birmingham General Hospital, is a justice of the peace for the county of Warwick. He graduated M.D. of Edinburgh in 1878 and obtained the Fellowship of the Royal College of Surgeons of that city in the same year and was made a Fellow of the Royal College of Surgeons of England, *honoris causâ*, in 1899. He is the author of various surgical monographs and has been a frequent contributor to the medical press. Dr. William Josiah Smyly, President of the Royal College of Physicians of Ireland, graduated M.D. of Trinity College, Dublin, in 1875, and became a Fellow of the College of which he is now President in 1884, having obtained the Fellowship of the Royal College of Surgeons in Ireland in 1877. He is a contributor to Allbutt and Playfair's System of Gynæcology and Quain's Dictionary of Medicine. Dr. Philip Sydney Jones, M.D. Lond., F.R.C.S. Eng., is honorary consulting physician to Prince Alfred Hospital and to Sydney Hospital, Australia, and Dr. Edmond Sinclair Stevenson, M.D. Brux., F.R.C.S. Edin., is a member of the medical council of the Colony of the Cape of Good Hope. The military branch of the medical profession is represented by Surgeon-General Charles McDonagh Cuffe, C.B., who has been promoted to Knight Commander of the Bath; Surgeon-Major Thomas Egerton Hale, V.C., a survivor of the Crimean War, and Surgeon-General William Launcelot Gubbins, M.V.O., Principal Medical Officer of the Western Command, in India, who have been made Companions of the Bath; and Colonel David Bruce, F.R.S., R.A.M.C., and Lieutenant-Colonel and Hon. Colonel William Coates, R.A.M.C. Volunteers, who also received similar honours in the civil division. To each of these gentlemen we offer in the name of the medical profession hearty congratulations.

PROPOSED CHARTER FOR THE BRITISH MEDICAL ASSOCIATION.

THE annual representative meeting in Oxford last year instructed the council of the British Medical Association to take the steps necessary to obtain the alterations in the memorandum of association contained in the Birmingham resolutions, subject to such modifications as might be required to harmonise them with the present articles. One of the Birmingham resolutions would have given power to the Association to expend money for the defence, promotion, or maintenance of the honour or interests of the medical profession, including in particular taking or defending legal proceedings. The matter was referred by the council to a committee, which has held numerous sittings and has taken legal opinions upon the course which should be followed. As a result the committee, at a meeting on June 2nd, requested the chairman of council to ascertain what prospect there would be of the Privy Council advising the Crown to grant a charter to the Association. Mr. Andrew Clark was able to report to a meeting of the committee on June 19th that as the result of inquiries at the Privy Council Office he had gathered the impression that the Association had a good prospect of obtaining a Royal Charter. The committee presented a report embodying the above facts to the council at its meeting on July 5th and the council then determined to report to the representative meeting that the information obtained as a result of inquiries as to the probability of the Association being granted a Royal Charter was so encouraging that it recommends the meeting to make an application to the Privy Council praying His Majesty to grant a Royal Charter.

VITAL STATISTICS OF THE JEWS.

THE desire has from time to time been expressed for trustworthy vital statistics of the Jews, partly perhaps on account of the absence in this country of any satisfactory basis for their calculation. No religious census has ever been taken in the United Kingdom; neither does the birth- or death-rate afford any information as to the religious persuasion of deceased persons or of the parents of children born. These facts, however, do not detract from, but rather add to, the interest of a paper read before the Royal Statistical Society on June 27th, entitled "A Contribution to the Study of the Vital and other Statistics of the Jews in the United Kingdom," by Mr. S. Rosenbaum. While it is difficult to accept as entirely satisfactory all the conclusions arrived at by the writer of the paper, based upon a number of somewhat hypothetical assumptions and estimates, he has brought to his task a sound knowledge of statistical method and of the fallacies that beset so much statistical work. The paper, therefore, deserves the careful attention of those who are interested in the subject. The total Jewish population of the United Kingdom is estimated at about 240,000, as the mean of two methods of estimation, based upon the recorded numbers of marriages solemnised in accordance with the usages of the Jews. Bearing in mind that a considerable, but unknown, proportion of Jews are admittedly married according to the rites of the Established Church, or are married in Nonconformist registered buildings or by a superintendent registrar without religious service, this estimation of the Jewish population in the United Kingdom is probably below the true number. Such under-estimate, however, would not affect some of the other conclusions arrived at by Mr. Rosenbaum. It appears from statistics relating to burials in Jewish cemeteries that an abnormally large proportion of young children are therein buried, from which was falsely assumed, by at least one witness at the recent Royal Commission on Alien Immigration, an abnormally high rate of infant mortality among the Jews. In the paper under notice the fallacy of such an assumption is clearly proved, as correct rates of infant or child mortality cannot be deduced from the recorded age at death without knowledge of the number of infants and young children born or living, which information is not available concerning Jews. Mr. Rosenbaum appears to establish the correctness of his assertion, with special reference to the aggregation of foreign Jews in the metropolitan borough of Stepney, that the birth-rate among this Jewish population is considerably higher than among the resident English population and that infant mortality is considerably lower, thus corroborating the general impression that Jewish women are remarkably good mothers. It appears that in the three quinquennial periods ending respectively in 1890, 1895, and 1900, while the metropolitan rate of infant mortality (deaths under one year to 1000 births) successively increased from 153 to 156 and 161, the rate in the borough of Stepney declined from 170 to 168 and 165. These figures do not show a low rate of infant mortality in Stepney, but they prove that the steady and remarkable recent aggregation of Jewish aliens in that borough has been accompanied by a decline of infant mortality concurrently with a general increase in the mortality of infants in the whole of the metropolitan area. The paper shows sound reason for believing that the Jewish birth-rate, at any rate in East London, is considerably higher than the non-Jewish birth-rate and that it was equal to 45 per 1000 in 1903. It is further asserted that this high birth-rate is not only due to the large proportion of Jewish women who are married but also to the greater fertility of Jewish wives. Whether Mr. Rosenbaum was well advised to use his hypothetical figures for the construction of a life table is open to some doubt, but the resulting table shows a higher expectation of life at all ages and for both sexes than is shown by life tables based upon the mortality of the general population of England and Wales. This is attributed not only to the more careful treatment of infants and children by Jewish mothers but also to the generally temperate habits of the Jewish population. The combined result of the high birth-rate and the low death-rate among the Jews is an abnormally high rate of natural increase, by excess of births over deaths. Mr. Rosenbaum admits that his conclusions have been mainly based upon the Jewish population of East London, which has an extremely abnormal age constitution, due to the alien immigration, including very few children or elderly persons, and it seems open to doubt whether the effect of this exceptional age constitution has been fully allowed for in estimating the marriage-, birth-, and death-rates of the population. The paper is, however, full of interest and many of the conclusions appear to be, in the main, well founded.

A CASE OF ABSCESS OF THE SPLEEN AFTER TYPHOID FEVER.

ABSCESS of the spleen after typhoid fever is a very rare complication and very few cases are on record. A case of exceptional interest is recorded by Dr. Federmann of Berlin in the *Deutsche Medicinische Wochenschrift*, No. 15, 1905, in which this condition occurred and was cured by operation. The patient was a labourer, 23 years of age, who was admitted into the Moabit Hospital for an attack of typhoid fever of moderate severity. On the eleventh day after the decline of the fever the patient developed a further febrile attack with leucocytosis. An exploratory puncture showed the presence of turbid purulent fluid in the left pleural cavity. About six centimetres of the ninth rib were removed subperiosteally and 300 cubic centimetres of this purulent fluid were evacuated; the lower lobe of the lung was adherent to the diaphragm which bulged upwards to a considerable degree. Subphrenic suppuration was in consequence suspected and on puncture thick brownish pus escaped. On incision below the diaphragm 500 cubic centimetres of stinking pus, containing masses of necrotic spleen tissue, were discharged, leaving a space, as large as two fists, with very thin walls, beyond which the stomach, the liver, and coils of gut could be distinctly felt. The abscess occupied practically the whole of the upper half of the spleen. The cavity was carefully cleaned out and packed with iodoform gauze. Convalescence was somewhat protracted but three and a half months later the patient left the hospital, his wounds being completely healed. Since that time he has remained healthy and is able to work. Dr. Federmann, in discussing the diagnosis of the condition, considers that the important features of the case were the evidence of fluid in the pleura and the leucocytosis. As is well known, uncomplicated typhoid fever produces a state of leucopenia or a reduction in the number of leucocytes. In this case a leucocytosis of 14,000 per cubic millimetre occurred in the second week of the illness, subsequently increasing to 25,000. The surgical treatment of the condition offers a very fair chance of recovery, since in the 27 cases recorded in the literature there is only a mortality of 15 per cent.

TEA AND THE EFFECTS OF TEA-DRINKING.

WHILE everyone knows that it is wrong to stew tea, to draw from it as much of its astringent principles as possible, yet there are few who pay any practical regard to the warning not to prepare tea in this way. It cannot be too widely known that not only is theine the most essential constituent of tea but also that it is almost as quickly soluble in hot water as is sugar. The making of the infusion is therefore complete in a few minutes and only tea so prepared is the "blessed beverage." The abuse of tea, like the abuse of anything else, is, of course, reprehensible and the guilty person deserves all the unpleasant symptoms which excessive tea-drinking or the drinking of strong, stewed tea sooner or later brings in its train. The subject is a well-worn one but in view of the enormously increasing consumption of tea in this country it is desirable to return to it and to remind our readers to impress upon their patients the undoubted evils to which immoderate and careless tea-drinking gives rise. In 1893 THE LANCET Analytical Commission published a report on "Tannin and Theine in China and Indian Teas" which was based on a number of laboratory experiments and the results were distinctly instructive, leaving no doubt as to the way in which tea should be consumed if the vicious principles are to be eliminated and the virtuous principles retained. More recently Dr. W. Scott Tebb, public analyst to the metropolitan borough of Southwark, has conducted an investigation at the instance of the Southwark borough council on similar lines and his report printed in pamphlet form contains some interesting observations on the subject of Tea and the Effects of Tea-Drinking. He concludes, and we are inclined to agree with him, that in the first place we drink too much tea as shown by a simple calculation from the average annual amount imported for consumption. Then as regards the best method of preparing tea, he recommends that the tea should be infused (not stewed or decocted) for no longer a period than five minutes. As to the variety of tea, he says that although it is not certain that the average China teas contain less tannin than do the Indian teas there is no doubt that individual samples of China tea can be procured comparatively free from this astringent principle. Tea, he suggests, should be examined for the amount of alkaloid and tannin and the price should be based on the proportion of the essential ingredient, the alkaloid; and the public should in each case, he thinks, be informed of the quantity of tea required to be used with boiling water—according, in fact, to the alkaloidal contents—and at the same time an indication should be given of the proportion of tannin liable to be extracted in a standard infusion. Such a procedure, surely, would be utterly impracticable and we doubt if it is scientifically sound. To begin with, the quality of tea bears no sort of relation to its alkaloidal contents any more than does the quality of tobacco depend upon its proportion of nicotine. The best cigar or tobacco does not necessarily contain the smallest amount of nicotine. Again, the proportion of tannin extracted depends upon the kind of water used. As was shown in the report of THE LANCET Commission referred to, soft or distilled water (which latter, by the way, Dr. Tebb employed in his experiments) dissolves the tannin more rapidly than does tap water but effects no increase in the amount of theine dissolved. Hard water will, indeed, render part of the tannin insoluble. Much depends, too, on the size of the leaf and there is no doubt that the most economical way of preparing tea is to powder it, in which case the time during which it is allowed to infuse can be considerably shortened, although the alkaloid and flavouring substances will be almost completely extracted. Another point to which we may draw attention is that caffeine and tannin are chemically antagonistic; they may also be to an extent physiologically antagonistic also. A hot infusion of Indian tea when allowed to cool yields a considerable deposit containing both tannin and theine. Tannin, in truth, is a precipitant of many alkaloids and a strong solution either of tannin or of tea is directed to be administered in certain cases of poisoning by alkaloids. It is probable that the physiological action of an infusion of tea is not identical in every respect with that of pure theine. The tannins comp an exceedingly numerous class of substances the memb of which do not behave physiologically or chemica in the same way. Tannin is present, for example, tea, in coffee, and even in cocoa, but the astringent p perties of the three beverages are very different, thoug the actual amount of tannin consumed may be t same. The use of plenty of milk with tea, it may be adde is a wise precaution and must be regarded as a soun physiological proceeding, since the proteids of milk destro astringency and probably prevent the otherwise injurio action of tannin on the mucous membrane of the stomach. In the intestinal juice the proteids are separated and the tannin probably combines with the sodium salts. The immoderate drinking of tea is an unquestionable evil but, on the whole, we are inclined to think that the evils of tea-drinking have been exaggerated. The real difficulty is to convince people that a lightly drawn infusion gives them their money's worth.

THE BLOOD PRESSURE IN CONVALESCENTS: "THE HYPOTENSION OF EFFORT."

AT the meeting of the Société Médicale des Hôpitaux of Paris on May 5th M. C. Oddo described an interesting phenomenon which he had observed in studying the blood pressure of convalescents—a fall of pressure after slight effort, such as going rapidly round the ward or ascending and descending two flights of stairs. This he terms the "hypotension of effort." Usually there was produced first a brief and feeble rise of pressure; after a minute the fall began and lasted for two or three minutes; five minutes the pressure became again normal or rem for some time below the normal and regained the n slowly. In other cases there was no rise of pressure an fall immediately followed the effort. The fall of pre usually amounted to from one to two centimetre mercury on the sphygmomanometer of Potain, but somet it amounted to as much as four centimetres. Us the blood pressure was subnormal before the experim varying from 11 to 14 centimetres of mercury, but s times the pressure was normal; in several cases a pres of 16 or 17 centimetres fell after the effort to 13 or This fact is of particular interest because it shows tha convalescents the blood pressure is not only feeble unstable, and that it may be unstable without being fee The frequency of the pulse generally follows the bl pressure—that is to say, the pulse is momentarily accelera after the effort, then rapidly falls, and finally beco normal at the same time as the blood pressure. T is in contradiction to Marey's law but exceptio to it in disease are well known. However, in so cases the pulse rate increases while the tension fal e hypotension of effort is not constant in con- lescence; it is most frequent in the early stages hen the blood pressure is low but even then it may absent. In the normal state the effect of effort is to crease the blood pressure. But when exertion is carried to e point of fatigue the pressure falls. It is easy to under- and why a slight effort has the same effect on the blood ressure in convalescence as prolonged exercise or violent fort in health. Exertion during convalescence submits the eart to a task which is too great; it is unable to discharge nto the arteries sufficient blood to maintain and to elevate he pressure. If cardiac fatigue immediately follows the effort ypotension results. But if the heart preserves enough of nergy to discharge into the arteries the excess of blood rought to it by the veins the blood pressure is momentarily aised. Then the increased work is followed by exhaustion nd the blood pressure falls. The vessels also play a part: heir muscular fibres are exposed during the effort to an in- reased strain; they become exhausted and relax, contributing o the fall of pressure. Usually these two factors, cardiac nd vascular, combine in producing the hypotension. But ometimes the predominance of one or the other is observed linically. The cardiac factor is shown by tachycardia, rhythmia, and feebleness of the sounds; the vascular y vaso-dilatation of the lower part of the body in the tanding posture, redness or pallor of the face, and ermographia. The last M. Oddo has often observed in convalescents. It follows that to appreciate the cardio-vascular condition of convalescents it is not sufficient to measure the blood pressure during rest but also to ascertain its stability after exercise.

THE CHOICE OF AN OCCUPATION FOR THOSE WHO SUFFER FROM AFFECTIONS OF THE EYES.

SYSTEMATIC examination of the eyes of school children seldom fails to show that a considerable proportion of them have defective sight and will therefore be placed at a disadvantage if in after life they engage in employments for which normal vision is desirable. Some useful suggestions on the practical side of this question will be found in Dr. Wilhelm Feilchenfeld's "Gesundheitspflege des Auges." He says, for instance, that sufferers from sensitive eyes, with easily irritated conjunctiva, or with chronic or frequently occurring inflammation of the lids, ought not to engage in work which is either associated with the production of much dust—such as baking or milling—or which involves exposure to a dazzling light, such as the occupation of a furnaceman. Individuals in whom symptoms of ocular fatigue easily come on ought not to choose an occupation which requires straining of the eyes by long-continued near work, such as sewing, knitting, copying, or shorthand writing. Individuals with one eye only should be warned against all kinds of employment which frequently lead to injuries of the eyes, such as metal-working or stone-masonry, because to such persons any injury to the eye is exceptionally serious. Also, one-eyed individuals should not choose any occupation which demands a very exact estimation of distance, because for this vision with both eyes is almost absolutely necessary, although a person can learn, up to a certain degree, to estimate distances with one eye alone. Individuals with progressive shortsightedness must avoid all occupations which entail great exertion upon the eyes; they should not engage in study, or become clerks, or mechanics, tailors, dressmakers, fancy needleworkers, or quilters; on the contrary, agriculture, gardening, milling, or brewing should be recommended to them, or they could become shop assistants, or, if women, cooks. Individuals who are colour-blind should not become seamen, and, if employed on a railway, it should not be in the outdoor department. Individuals who require to wear spectacles always, on account of some error of refraction, ought not to be employed near a furnace or in rooms containing steam, because in such places the spectacles continually become steamy and so cause indistinct vision; such individuals, therefore, are not suitable, e g., for locksmiths, engine-drivers, firemen, or, if women, for laundresses.

FOURTH-OF-JULY TETANUS.

EXUBERANT patriotism is not without attendant dangers. In any case the health authorities of Chicago have issued a timely and official warning. The bulletin of the health department, published a fortnight before the event, discusses the proper treatment of Fourth-of-July wounds. The American Medical Association and its journal have often dealt with the question of the "prophylaxis of the Fourth-of-July tetanus." The celebration of American independence, when loyal citizens endeavour "to blow the country off the map," produces what is described as thousands of "useless injuries." These are caused very generally by premature explosions of blank cartridges and are frequently followed by tetanus. It is therefore urged that large quantities of tetanus antitoxin should be held ready at the disposal of the public on every July 4th. According to the available information no case of lockjaw has occurred when this preventive has been used. It is also considered perfectly harmless. Consequently it was employed in a large number of hospitals last year and efforts have been made to insure its wider use on the present occasion. The only deaths from tetanus were among those who had not used the antitoxin before the symptoms of the disease had appeared. It is odd that national rejoicings should lead to numerous and fatal injuries. Nothing could be more brilliant than the fêtes of July 14th in France and they do not occasion such accidents. But the French people generally trust "the Administration" to manage matters for them and leave pyrotechnic displays in the hands of specialists fully qualified to handle these explosives. If in America the money which each individual spends in squibs and petards was paid into a central fund a display of fireworks really worth seeing could be organised, and this without endangering the lives of the citizens.

THE ANATOMICAL AND FUNCTIONAL INDEPENDENCE OF THE LOBES OF THE LIVER.

M. H. Sérégé has contributed an interesting paper to the Académie des Sciences of Paris[1] wherein he argues that the lobes of the liver are anatomically and functionally independent, advancing anatomical, physiological, pathological, and clinical reasons in support of his views. The anatomical independence of the lobes was affirmed by Glenard in 1895 and confirmed by Wertheimer and Lepage in 1896. The writer considers the proposition is proved by the injection of a solution of methylene blue into one of the branches of the portal vein when it is observed that only one lobe is coloured by the dye. The physiological independence of the lobes is demonstrated by the existence of a double current of blood in the portal vein. If a drop of Chinese ink be injected into a small vein of the small intestine the coloured particles are found in the right lobe, but if the ink be injected into the splenic vein the particles reappear in the left lobe. Another physiological proof consists in the determination of the amount of urea present in the different lobes. It has been observed that the left lobe contains the most urea until the third hour of digestion, after which the right lobe contains the most until the next meal is taken. During abstinence from food both lobes contain an equal quantity of urea. Again, the determination of the quantity of glycogen present in each lobe during digestion shows that the left lobe is richest in glycogen until the third or fourth hour of digestion and the right lobe contains the most from the fourth to the tenth hour. But if the fasting be prolonged it is surprising to note that from the twelfth hour onwards and until the next meal the left lobe again contains the most glycogen. In conjunction with Dr. E. Soule, M. Sérégé determined the rate of flow of blood in the right and left lobes. The flow was more rapid in the right lobe than in the left, a result which is in agreement with the work of M. Jolyet and M. Rosapelli, and offers a rational explanation of the difference in the quantity of glycogen present in each lobe. M. Sérégé further considers that the records of pathological anatomy and clinical experience in medical literature furnish ample evidence of the independence of the lobes of the liver.

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[1] Comptes Rendus, No. 12, p. 804.

A DEAN'S OPINION AS TO CLEANLINESS.

THE Dean of Canterbury appears to hold views which, we hope, are peculiar to himself upon the virtue proverbially described as holding a position next to godliness. He is reported as having delivered himself recently of sundry observations upon the subject of luxury among modern schoolboys at the celebration of the jubilee of the Clergy Orphan Corporation at St. Edmund's School, Canterbury, and to have held up to his audience as an example of the sybaritic tendencies of the age the fact that the governors of a great public school "had actually found it necessary to provide the poor little boys with shower baths when they came in from football." He appears to have added, by way of explaining his point of view, that when he himself was a schoolboy "there was scarcely anything necessary for the purpose of his education except a room, a book, a man, and sometimes a stick." Making every allowance for the humorous side of this description it would seem that the Dean of Canterbury considers that the modern mechanical aids to cleanliness are not desirable so far as boys are concerned because when he himself was a boy he was not provided with them. The word "necessary" is a somewhat misleading one. Cleanliness is an adjunct and aid to healthy life but no sanitary precaution is "necessary" unless we start by regarding it as "necessary" to provide for the young the healthiest surroundings that are reasonably attainable and to train them to the use of sanitary appliances for their own benefit. Schoolboys are never likely to carry washing to excess, but they come from a game of football on a moist November day begrimed with mud, their clothes damp with perspiration, and sufficiently fatigued to be grateful for the refreshment of a bath. Clean and dressed again in dry clothing they are more likely to benefit by the healthy exercise which they have taken than if they remained dirty and in their wet clothes and we ask the Dean of Canterbury whether he would seriously deny this. Perhaps he would answer that they should be allowed to change their clothes if these are wet and muddy, although no doubt in the days when he was young change of clothes for games was less universal than now. Would he, however, suggest that a boy should change his clothes when they are dirty but should not cleanse his skin when it is in a similar condition? And if the boy is to wash is there any reason why he should not be furnished with a form of bath which will insure his doing it efficiently and rapidly without giving him the opportunity for soaking himself in warm water, a performance which might fitly be described as a luxury and as one likely to lead to undesirable results? If the Dean of Canterbury does not agree with us let him visit a room full of boys fresh from football in the act of changing their clothes and of performing such ablutions as may be within their reach and he may not only modify his views as to the "necessity" of shower baths and as to their position as luxuries, but may also feel that as a schoolmaster he would prefer to be shut up on a winter's afternoon, with a class of lads fresh from their luxurious baths to instructing the same youths in the hardier circumstances which he recalls as characteristics of his own boyhood. It is not a little disappointing to those who have at heart the education of all classes of the nation to the appreciation of healthy conditions of life to find an eminent member of the ecclesiastical profession belittling cleanliness as a superfluity and a luxury The clergy occupy an admirable position for the teaching of many things besides the doctrines and precepts of religion and they are not as a rule averse from interfering in purely medical matters or from lecturing upon subjects which have no direct connexion with their vocation. It would neither compromise their dignity nor diminish their usefulness if they were to put themselves in the forefront of the sanitary progress of the present day, but it cannot be said that they have hitherto done so to any marked extent. Schools in which they have held considerable, if not paramount, authority have not always been conspicuous for the high quality of their sanitation. Ventilation in churches is by no means carried to the point of making them wholesome places for large numbers of persons to remain in for an hour or two at a time The Dean of Canterbury, however, seems to have gone further than mere indifference to undesirable conditions which others view with disapproval and to have suggested that cleanliness must be obtained with difficulty or must be deemed a luxury, and to have been influenced in doing so by the fact that it was not regarded as worthy of consideration when he himself was young. Those who remember public schools in those days, however, and who are acquainted with the schoolboy of the present century sufficiently to know what his life really is and to compare it with their own, will probably think that if his existence is more luxurious than it would have been in the last generation it is cleaner, happier, and better, not only physically but morally. It is the effort, at all events, of those who supervise it to make it so and they will probably not relax their efforts because the improvement which they seek to introduce was not 50 years ago regarded as "necessary."

SECONDARY FACTORS IN THE MORTALITY AND TRANSMISSIBILITY OF PULMONARY TUBERCULOSIS.

AT the first medical congress of the Republic of Cuba, which was held in Havana on May 23rd, Dr. Carlos J. Finlay, chief sanitary officer of the Republic, read a preliminary note on the Importance of certain Secondary Factors in the Mortality and Transmissibility of Pulmonary Tuberculosis. THE LANCET of May 27th contained a report of a paper on the Significance of Phthisis Death-rates, read by Dr. Arthur Ransome before the Epidemiological Society in London on May 19th, and when that issue of THE LANCET arrived in Havana on June 9th Dr. Finlay was kind enough to send us an abstract of his paper. He holds it to be an aphorism that the tubercle bacillus *in pure culture* is practically incapable of developing in the pulmonary tissues either the anatomical or the clinical symptoms characteristic of confirmed pulmonary tuberculosis, and he considers that precautions against the infection of healthy persons by bacilli from the sick are not nearly so important as the elimination, both for the sick and the healthy, of everything that may tend to paralyse in the human organism the natural resources with which it is endowed for its defence against the invasion and development of the tuberculosis infection. He says that the two resources which the human system possesses against the aggressions of Koch's bacillus are. first, the phagocytic properties to he leucocytes and, secondly, the stimulus towards proferation experienced by the connective tissue cells nder the action of the secretions of the bacillus. nder the influence of this stimulus the connective tissue ells build up around the bacilli a capsule which on the one and protects the bacilli against the avidity of the phagoytes and on the other impedes the multiplication of the acilli as well as the transudation of their secretions towards he adjacent tissues. The protection obtained by the atient through the encapsulation of the bacillary focus is iable, however, to be precarious, inasmuch as if in its eighbourhood a focus of pyogenic bacteria should be nstalled these through their necrotic and ulcerative endencies may destroy the walls of the protective apsule. Such bacilli as may have survived will thus e set free; they will multiply and with the proection that their association with the pyogenic bacteria ill afford them against the phagocytes, they will ccomplish the work of destruction in the adjacent tissues nd will bring about the formation of new foci either within he body of the same patient or externally wherever particles f the mixed culture (tuberculo-pyogenic) may have been onveyed from their original site. Among these pyogenic acteria Dr. Finlay includes not only the staphylococcus and treptococcus but also Friedländer's and Frankel's cocci, he bacillus of influenza, and the micrococcus tetragenus of affky, and he naturally arrives at the conclusion that the est prophylactic of tuberculosis and the best remedial reatment are the *respiration of pure air.*

STANDARDS AND THE SEASONAL VARIATION IN THE COMPOSITION OF MILK.

THE adoption of analytical standards in regard to milk whilst affording a certain degree of protection to the community against adulteration is not calculated to secure the supply of milk of maximum quality. It is evident that the temptation to water a rich milk or to reduce the fat to such an extent that it still complies with the requirements of the standard is, in many instances, irresistible. In the recently published report, for example, of the public analyst of the borough of Portsmouth, Mr. Edward Russell, B.Sc., F.I.C., for the year ending Dec. 31st, 1904, the figures indicate a studied and systematic sophistication of the milk-supply of that borough. The figures, that is to say, run perilously near the legal limit, or, in some instances, are just that trifle below which makes it difficult to differentiate between a poor genuine sample (in the light of the legal minimum) and a tampered milk. When the analyst calculates that the milk is adulterated with 5 per cent. of water or is deficient in fat to the extent of 5 per cent., based on the legal standard, the extreme probability is that the milk has been tampered with to a larger extent than these figures would indicate. As suggested by Mr. Russell, it would be well if the calculation of the extent of the adulteration in those cases in which the fat falls below the minimum legal limit could be based on such a standard as the mean between the two lowest points of the curve given in a table showing the seasonal variations of genuine milk. The curve of undoubtedly genuine samples is practically parallel in this table with the curve illustrating the variation in the general supply. As an example a milk showing 2·85 per cent. of fat on analysis is quoted. This would be reported as being deficient in fat to the extent of 5 per cent. below the legal minimum, whereas if the standard figure 3·4 (the lowest point of the general curve) were used as the basis of calculation the deficiency would be represented as 16 per cent., which is probably much nearer the truth. As is well known, distinct variations occur in the quality of milk at periods in the year corresponding with the seasons. Thus in winter milk is of good quality, while in summer the milk is poorest, and in the spring and autumn the quality is neither rich nor poor. The plan suggested seems to us to be worthy of attention and its adoption would undoubtedly result in a considerable improvement in the quality of the milk-supply.

PATHOLOGICAL MATERIAL SENT BY POST.

THE attention of the Postmaster-General has been drawn to the fact that pathological specimens are frequently sent by post by members of the medical profession and other persons in packets which have not been registered as required by the Post Office regulations. The Postmaster-General desires to give notice that the transmission of such specimens is sanctioned only on the condition that they are handed in at a post office for transmission by registered letter post, and that they are packed in accordance with the regulations published in the Post Office Guide. These regulations, which are necessary for the protection of Post Office servants and of the public, provide that any deleterious liquid or substance sent by post must be inclosed in a receptacle hermetically sealed, which receptacle must itself be placed in a strong wooden, leathern, or metal case in such a way that it cannot shift about, and with a sufficient quantity of some absorbent material (such as sawdust or cotton-wool) so packed about the receptacle as absolutely to prevent any possible leakage from the packet in the event of damage to the receptacle. The packet must also be marked "Fragile, with care." Any person who sends by post a deleterious liquid or substance for medical examination or analysis otherwise than as provided by these regulations is liable to prosecution, even if he be a patient sending something to his medical adviser for his opinion or a medical practitioner sending something to a laboratory or elsewhere.

THE DANYSZ VIRUS FOR FIELD PESTS.

AN example of the national character of the work undertaken by the Pasteur Institute in Paris is afforded by the annual report of the British Consul at Bordeaux, just published. In the department of Charentes, which lies to the north of Gironde, the crops have suffered terribly from the inroads made by a small animal described as something between a field mouse and a field rat. These rodents, as a rule, occupy the lower marshy ground, chiefly meadows and pasturage; but the floods following the heavy rains of 1902–03 drove them from their natural habitat on to the higher arable land, where they wrought serious havoc. In spite of various efforts at extermination they throve in their new quarters and multiplied at a terrific rate, their numbers being estimated at from 1,000,000,000 to 1,200,000,000. Nux vomica was the chief medium employed to rid the country of these marauders but it proved unsatisfactory inasmuch as small birds, game, domestic fowls, and animals were freely numbered among its victims. Then the Pasteur Institute came to the rescue with a specially prepared remedy. At first this Danysz virus did not prove very efficacious until experience taught that it must be distributed while fresh and protected, as far as possible, from the action of light. The practice adopted was to prepare the rolled oat grain used as bait in dimly lighted sheds and to spread it on the fields in the evenings. Under these conditions it is claimed, says Mr. Vice-Consul Hamilton, that "the mortality induced by it in the field mice, as the result of recent experiments, is as high as 98 per cent. within 15 days, as not only those 'campagnols' which have eaten the bait die within five days but the others are infected by the disease and die in their turn. The contagious malady induced by the Danysz virus resembles typhoid but is innocuous to all living beings except rats and mice, to which animals it is fatal. There is a special service attached to the Pasteur Institute in Paris for the preparation of this virus, which is prepared in combination with a tempting broth and is sent down to the Charentes in bottles on receipt of requisitions from the mayors of the communes affected. The inhabitants of many communes are marshalled by the mayor in semi-military formation and the bait spread methodically in such a manner as to leave no portion of ground without its share of poisoned grain."

LECTURES ON EXPERIMENTAL PSYCHOLOGY.

WE have received a prospectus announcing the following courses of lectures in experimental psychology at King's College, London, for the ensuing academic year. In the first term Professor W. D. Halliburton will lecture on the General Structure and Histology of the Nervous System and of the Sense Organs. In the second term a course of eight weekly lectures will be given by Dr. C. S. Myers on Modern Investigations in the Psychology of Memory. Dr. Myers will also deliver during the second and third terms a course of lectures in Experimental Psychology, accompanied by demonstrations and laboratory work in the rooms of the new psychological laboratory which adjoin the physiological laboratory of the college. The second term's work will be mainly devoted to the study of sensations and their relation to experiences of space, form, weight, time, rhythm, and harmony; the third term mainly to the study of attention, fatigue, practice, work and memory, the effect of drugs, the chronometry of mental processes, and the general principles of psycho-physical research. For the benefit of students of the laboratory a departmental library has been started which contains the principal English and foreign books and periodicals devoted to general and experimental psychology. The days and hours of the lectures are not yet fixed but would-be students are requested to communicate with the Secretary of King's College.

THE MODE OF ORIGIN OF NEOPLASMS.

AT the meeting of the French Academy of Science held on May 29th there were presented two papers bearing upon the question of the development of malignant growths. In one of them, entitled "Reproduction Expérimentale du Cancer de l'Homme," M. Mayet claimed to have succeeded in infecting a dog by means of fluid obtained by the maceration of the tissue of a uterine myoma. On May 4th and May 14th, 1904, there were injected into the animal respectively 20 cubic centimetres and 40 cubic centimetres of the fluid, after this had been filtered through porcelain and the absence of perceptible organisms had been confirmed by the use of the microscope. The dog died on May 18th, 1905, and there was then found in its spleen a tumour which was described as being of the size of a nut and of sarcomatous character. This experiment M. Mayet regarded as supporting his earlier observation that tumour juice would set up in white rats processes giving rise to the production of neoplasms differing in form from that of the original tumour and situated far from the region of injection. The second paper referred to was by M. Charrin and M. Le Play and dealt with the effects produced by the subcutaneous and intraperitoneal injection of pure cultures of the fungus stearophora radicicola which grows upon the root of the vine. Under the skin and mucous membranes of the animals examined were found nodules made up of lymphocytes, polynuclear leucocytes, and a few connective tissue fibrils, together with a network of the mycelial filaments of the fungus. The growths attained in some cases the size of a pigeon's egg and contained a good deal of black pigment, giving them a melanotic character. In the liver and kidneys there were further growths, different in the two organs. Hæmorrhagic foci occurred in the spleen, the medulla of the suprarenals, and the nervous system, and there was diminution in the numbers of the red corpuscles and in the amount of hæmoglobin. Most remarkable, however, were the changes in the skeleton. The bones were found to be altered in composition, there being a diminution in the quantities of water, phosphoric acid, and lime normally present, while individual bones were deformed from the development in or upon them of curvatures and nodosities. Other parasites of the same group produced effects displaying a general similarity to those above mentioned. These researches may be correlated with those of Plimmer, whose experiments led him to the conclusion that the "cell inclusions" found in malignant growths are parasites allied to the saccharomycetes, for there is some reason to think that both saccharomyces and stearophora are degenerate members of the group of fungi known as ascomycetes.

THE BRITISH ELECTRO-THERAPEUTIC SOCIETY.

AS will be seen by a reference to our advertising columns, this society intends to hold its provincial meeting at Leicester on July 26th, 27th, and 28th, during the visit of the British Medical Association. These meetings will be free to all members of the British Medical Association and other qualified medical men. A programme of the papers to be read and discussions to be held will shortly be announced and any medical practitioner wishing to take part in the discussion or to read a paper is invited to communicate without delay with the honorary secretary, Dr. E. Reginald Morton, 22, Queen Anne-street, London, W. The British Electro-Therapeutic Society is doing good work in the application of electrical forms of energy for the cure and relief of disease and one of its most stringent rules is that its members must be qualified medical men.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE sixty-fourth annual meeting of this association will be held on July 20th and 21st at 11, Chandos-street, Cavendish-square, London, W., under the presidency of Dr. T. Outterson Wood. The educational committee will meet on July 18th at 4 P.M. and the parliamentary committee on the 19th at 5 P.M. The adjourned annual meeting will be held on the 19th. On the 20th the council will meet at 9.30 A.M. and the annual meeting will commence at 11 A.M. With regard to the election of officers, council, and standing committees, we are asked to remind members that the voting papers must either be handed in at the annual meeting or sent by post to the general secretary at 11, Chandos-street, London, W., so as to reach him at least seven days before the date of the annual meeting and must be legibly marked on the outside "Voting Paper." There are eight candidates proposed for election as members. After the various elections have been decided, several reports received, and other formal business transacted the annual meeting will re-assemble at 2 P.M. when the retiring President, Dr. R. Percy Smith, will introduce his successor, who will present any prizes or medals that may have been awarded during the year. The President will then deliver his address. Immediately after the presidential address Dr. George M. Robertson, medical superintendent of the Stirling District Asylum at Larbert, will introduce for discussion the question of the Employment of Female Nurses for the Care of Insane Men and several members have promised to take part in the discussion. On the 21st, at 10 A.M. (in view of the introduction of two Lunacy Bills in Parliament), the question of the treatment of insanity and the proper accommodation to be provided, especially for early mental disorders, will be brought forward for discussion. Dr. Helen Boyle, late an assistant medical officer in the London County Asylum, Claybury, will read a paper upon Some Points in the Early Treatment of Mental and Nervous Cases, with Special Reference to the Poor. Dr. J. Milson Rhodes, member of the Lancashire asylums' committee and member of the committee which reported upon asylums in the United States, will read a paper upon the Provision of Suitable Accommodation for the Various Forms of Insanity. Dr. Alan McDougall will read a paper upon the David Lewis Colony for Epileptics, Alderley Edge, of which he is the resident medical officer. At 2 P.M. the question of pulmonary tuberculosis in asylums will be brought up for discussion. Dr. George W. Greene, medical officer, Claybury Asylum, will read Notes upon the Incidence of Tuberculosis in Asylums. The following papers are also promised: Some Definitions, by Dr. Charles A. Mercier, and Some Remarks in Regard to Urine Testing, by Dr. Robert Jones. The annual dinner will take place on July 20th at the Whitehall Rooms, Hôtel Metropole, London, at 7.30 P.M. Tickets one guinea (wines included).

INFORMATION has just come to hand that the committee of organisation of the Fifth International Congress of Obstetrics and Gynæcology, having received numerous intimations from gynæcologists in Russia and outside that country suggesting that the Congress should be postponed for a year, has decided, after a discussion at a special meeting, to put off the Congress, which was to have been held in September, 1905, in St. Petersburg, to next year (1906).

IN connexion with the visit to England of their Imperial Highnesses Prince and Princess Arisugawa of Japan the King has appointed Dr. Ishinoské Mimura, physician to His Imperial Highness Prince Arisugawa of Japan, to be an Honorary Member of the Fifth Class of the Royal Victorian Order.

THE distribution of medals and prizes to the students of Guy's Hospital will be held at the hospital on Wednesday, July 12th, at 3.15 P.M. The governors and the medical staff are giving a garden party on the occasion and the prizes are to be distributed by Dr. P. H. Pye-Smith, F.R.S.

INVITATIONS to a Conference on the Prevention of Epidemic Small-pox, to be held at the Mansion House, London, on Tuesday, July 18th, at 3 P.M., have been issued by the Lord Mayor.

Dr. G. E. Herman, consulting obstetric physician to the London Hospital, has been elected an honorary member of the Gynecological Society of Chicago.

THE Long Fox Memorial Lecture for this year will be delivered by Dr. E. Markham Skerritt in November.

EPSOM COLLEGE JUBILEE.

ON Saturday last the jubilee of the opening of Epsom College was celebrated by a large gathering of old boys at the College. Close upon 250 arrived between 3 and 4 P.M. and many of the older ones were greatly interested in talking over old times and in observing the improvements introduced since their days. A large number of the visitors found their way to the cricket field where they witnessed the close of a match between the College team and Merchant Taylors' School. Refreshments were served in the headmaster's garden at 4.30, there was a short service in the chapel at 5.45, and a party of considerably over 200 sat down to dinner in the big school-room at 6.30 under the chairmanship of Mr. Henry Morris, one of the earliest scholars, and at present honorary consulting surgeon to the College. He was supported by the Earl of Rosebery, President of the College, Sir Richard Douglas Powell, Sir Constantine Holman, Dr. F. Needham, Dr. F. de Havilland Hall, Dr. J. H. Galton, and Dr. M. Baines, and by the following amongst other prominent old boys, Mr. H. Robertson, M.P., Surgeon-General A. M. Branfoot, C.I.E., I.M.S., Dr. Frederick Taylor, honorary consulting physician to the school, Mr. Bilton Pollard, Mr. George C. Croft, and Mr. C. L. Smiles, chairman of the Jubilee Committee. Archdeacon Thornton, the first headmaster of the College, was too unwell to be present, but he sent an interesting letter of congratulation on the successes achieved and of the progress made, with his affectionate remembrances to his old friends.

In proposing the toast of "His Most Gracious Majesty the King, Patron of the College," the CHAIRMAN referred to the fact that His Majesty had visited the College as a lad of close upon 14 years of age when his father, the Prince Consort, opened the College in 1855, and that His Majesty laid the foundation stone of the lower school in 1895. Moreover, the present Prince of Wales was following in the footsteps of his father, for so recently as in 1903 His Royal Highness had visited the College and had taken the chair at a festival dinner. The toast having been drunk with enthusiasm, the Chairman proposed the toast of the evening, "Success to Epsom College." In a long speech, during which unfortunately many guests were compelled to leave the room in order to catch the last train from the Downs station, he sketched the growth and educational progress of the College. He observed that when the College was opened there were only about 18 acres of land and the buildings accommodated 150 scholars; but now the College possessed close upon 80 acres and was able to accommodate from 300 to 350 boys, including those in the lower school. He gave an interesting account of the introduction of lectures in chemistry and natural philosophy about ten years after the opening of the College and of more time being allowed a few years later for the study of modern languages at the expense of classical studies. About this time the council built a proper laboratory and made large additions to the apparatus, a class-room fitted up as a laboratory having served the purpose for some years, and a year or two later the study of botany, the elements of physiology, and zoology was started. He referred to the numerous improvements which had been introduced in recent years and drew attention to the fact that these were in a great measure due to the efforts of the treasurer, Sir Constantine Holman. He observed that the College was now recognised as a school of science by the English Conjoint Board of the Royal Colleges of Physicians and Surgeons. In conclusion, he referred to the fact recently mentioned in our columns that when granting her patronage to the College 50 years ago Queen Victoria expressed the wish that the designation of the institution should be "The Royal Medical College," thus omitting the objectionable word "Benevolent," which existed in the title until 1903, when it was altered to "Epsom College."

In responding to this toast Lord ROSEBERY spoke as follows: Mr. Chairman and Gentlemen,—I speak to you under singular disadvantages to-night, because I have by some blunder of my own undertaken to do that which no man, however great, has ever been able to do, which is to eat two dinners; and I have the uneasy consciousness that for the last 40 minutes a dinner party has been waiting for me at my house. That will conduce, at any rate, to the brevity of my speech; but I am afraid that there is another reason for that brevity even more efficacious—namely, that I cannot, though president, speak with that internal knowledge of its arrangement which alone would justify me in detaining you. I do, indeed, as a neighbour take a great pleasure in visiting the College and watching the matches at cricket and football in which the College is so eminently distinguished, but I take no part in the teaching; and I am inclined to think that if it was known that I did take part in the teaching not only would it have a serious effect on the views of the parents of Epsomians but it might seriously tend to reduce the standard of the teaching itself, so I must lead you into other branches of education which are not touched on here. Well, gentlemen, I can, at any rate, speak with some knowledge not on the process by which Epsomians are turned out but of the result, and I venture to say that no finer body of young sent out by Epsom College. It turns out Englishmen and English gentlemen, healthy in mind and in body, fit to go anywhere and to do anything, and it is my belief that if the number of schools like Epsom College were multiplied, and if the number of scholars inside Epsom College were multiplied, it would be none the worse for this country or this Empire. I am sometimes puzzled by one very curious anomaly. In this country we have the best raw material in the world. We turn out annually thousands of young fellows splendid in physique, energetic in mind, and not ill-trained intellectually as compared with other nations, the most valuable body that a nation can have. Now, in an Empire like ours there should be an unlimited demand for such men. There is practically an unlimited need for such men and yet why is it that the demand and supply in this country do not coincide? You never sit next to parents at dinner who know the least in the world what they are going to do with their sons. It is the great problem of the age. While this is certainly true, and I, as a parent, speak with the utmost sympathy of the difficulty of finding proper avenues of employment for one's sons, some find it in the cricket field, some elsewhere. Still, I am, on the other hand, conscious that there is for almost all the young men I have been speaking of turned out by our public schools a round hole somewhere in the Empire if they could only find it. And it is, therefore, a difficulty which must be solved some day by some statesman, some legislator, or some educationist: the difficulty of finding some adaptation of the peg for the hole throughout the British Empire. As regards physique, at any rate, I can testify to this. I happened to be watching a cricket match here the other day—I speak under the correction of the captain whom I see present—when I saw a young fellow, who measures so many inches that I could not help thinking that Frederick the Great's father, who stuck at nothing to procure tall soldiers, would have kidnapped that young man from the ground without demur. I can speak with thorough belief of the way in which old Epsomians are conducting themselves in the various avocations which they have chosen. We have here a most splendid teaching establishment, headed by my friend Mr. Smith-Pearse, we have the healthiest situation in the world, and if the College does not develop as it should or as it might it can only, I think, be due to the timidity of parents who believe that the counter attractions of Epsom may have some deleterious influence on the tender years of their sons. If my voice can reach them from here let them be sure that the race week is a period of monastic seclusion to the boys of Epsom College, that no contamination is allowed to reach them. They, I believe, never know the name of the winner of the Derby until they have separated for the vacation when they learn it from tradition at home. And for those who intend to be medical men there is that rudimentary element of health, the Epsom well, which is supposed to have supplied Epsom salts to an admiring world. With these advantages, and without, so far as I know, any drawbacks, we may look cheerfully to the next jubilee.

ANNUAL DINNER OF THE EPIDEMIOLOGICAL SOCIETY.

THE fifty-fifth anniversary dinner of this society was held at the Grand Hotel, Trafalgar-square, London, W.C., on June 30th, the chair being occupied by the President, Dr. B. Arthur Whitelegge, C.B., His Majesty's Chief Inspector of Factories. There were also present Dr. E. F. Bashford, Dr. R. M. Beaton, Dr. W. A. Bond, Dr. G. S. Buchanan, Dr. H. T. Bulstrode, Dr. Dudley W. Buxton, Mr. Wolf Defries, Lieutenant-Colonel R. H. Firth, R.A.M.C., Mr. K. W. Goadby, Dr. W. J. Gow, Dr. W. H. Hamer, Dr. G. E. Herman, Mr. T. H. Kellock, Dr. T. N. Kelynack, Dr. H. R. Kenwood, Mr. John Langton (President of the Medical Society of London), Dr. R. Bruce Low, Dr. T. Glover Lyon, Dr. Hector W. G. Mackenzie, Mr. G. Millson, Sir Shirley F. Murphy, Dr. Arthur Newsholme, Colonel J. Lane Notter, R.A.M.C. (retired), Dr. J. Frank Payne, Sir Richard Douglas Powell, Bart., K.C.V.O., President of the Royal College of Physicians of London, Dr. H. Meredith Richards, Dr. James Robertson, Dr. John Robertson, Major Ronald Ross, C.B., F.R.S., Mr. W. N. Shaw, F.R.S., Mr. P. Sidney Spokes, Dr. R. D. Sweeting, Dr. John F. W. Tatham, Mr. D. Lewis Thomas, Dr. G. L. Turnbull, Mr. A. C. Waters, and Dr. Dawson Williams.

After the usual loyal toasts, "The Medical Departments of His Majesty's Forces" was proposed by Dr. PAYNE, who, in speaking of the Medical Department of the Navy, referred to the testimonial which Admiral Rodney gave to Gilbert Blane, physician to the English fleet, who was a candidate for a vacant physiciancy at St. Thomas's Hospital. The admiral wrote: "It was owing to Dr. Blane that the fleet at my command was kept in a condition ready to attack the public enemy." Dr. Payne had no doubt that an admiral of to-day would have to write in the same terms of the present Medical Department were the necessity to arise.

Colonel **LANE NOTTER** responded.

Dr. **DAWSON WILLIAMS**, in proposing "The Medical Societies," of which he observed there were 22, drew attention to the economy which would accrue could a satisfactory scheme of amalgamation be devised. He expressed the opinion that the poor attendances of the meetings of the medical societies were largely due to the fact that the proceedings were reported in the medical papers and he suggested the desirability of the exclusion of the medical press if the attendances were to be improved.

Sir **RICHARD DOUGLAS POWELL**, in responding, thought that these bad attendances were a growing evil and that some form of concentration was eminently desirable. He was not, however, in agreement with the proposer of the toast as to the exclusion of the medical press. In the old days reporting was very imperfect but now that the reporting was all that could be desired it was essential that the practice of thus recording the proceedings should be continued.

Mr. **LANGTON**, with whose name the toast was also coupled, pointed out that chaos, as regards the medical societies, began as far back as 1808. He hoped, however, that although amalgamation in practice was a much more difficult matter than in theory and was beset by many difficulties, financial and other, a scheme would be presented within the next few weeks which would afford a means of escape from the present unsatisfactory state of affairs.

Colonel **FIRTH** proposed "The Visitors" and Major **ROSS**, in responding, expressed the great pleasure which it had afforded him to find the brilliant researches of Colonel D. Bruce recognised in that day's birthday honours. Commenting generally upon investigations in the tropics, Major Ross accentuated the importance of encouraging the numerous younger men who for very little pay indeed were content to go forth on missions which were by no means free from risk and which in some instances had resulted in the death of the workers. He would like, too, to see more energetic action on the part of the Government with regard to the many places where malaria was at present rife but from which without serious difficulty it might be eradicated. In his view the medical profession was somewhat too backward in pressing the claims of science upon the public.

Mr. **SHAW**, the recently appointed director of the Meteorological Office, also acknowledged the toast and in discussing the relationship between epidemiology and meteorology, confessed that there was some truth in the statement made by the schoolboy who, when asked as to the nature of a barometer replied: "A barometer is an instrument shaped like a banjo; it is meant to foretell the weather *but it cannot foretell it for long*." Although the Meteorological Office issued forecasts with regard to the weather which had an undoubted value there was nevertheless force in the schoolboy's criticism. Mr. Shaw thought that possibly the epidemiologist had been in the past somewhat too prone to associate outbreaks of disease with meteorological events which had immediately preceded the outbreak, whereas possibly such an outbreak might be partly due to an accumulation of influences some of which had been operative several months previously. As a suggestion in this direction he might make reference to the fact recently drawn attention to by him in the *Times* that the wheat crop of any given year was due, not to the weather of the preceding spring, but to the amount of rainfall in the preceding autumn—i.e., to an event which happened some ten months before the result, *quâ* the wheat yield, was apparent. It had been calculated that every inch of rainfall by washing out the nitrates from the soil was responsible for a loss of one and a quarter bushels of wheat per acre in England, an amount which in the mass meant a loss of some £300,000 to the farmer.

Dr. **TATHAM**, in proposing "The Epidemiological Society," took the opportunity of thanking the members for the honour which they had recently conferred upon him in electing him to fill the presidential chair in succession to Dr. Whitelegge. Dr. Tatham looked forward to the time when his office, the General Register Office, by furnishing general statistics as regards sickness, would be in a position to afford to the Epidemiological Society very considerable additional assistance in its researches.

Dr. WHITELEGGE, in replying and in discussing the enormous advances made in epidemiology since the foundation of the society in 1850, drew attention to the circumstance that curiously enough both the epidemiology and the bacteriology of the common cold had been practically neglected notwithstanding the fact that the indirect effects of this communicable condition must exercise a very substantial effect both on the sickness and mortality records. Research, however, extended first in one direction and then in another, and the most remarkable discoveries of recent years had doubtless been in relation to the part played by the insects and protozoa in the distribution of disease. The society was, he was glad to report, in a decidedly flourishing condition. The attendances at the meetings had been better than ever before and the papers and discussions had been of a very high order. He alluded in eulogistic terms to the services rendered to the society by the honorary secretaries and treasurer—a compliment which was suitably acknowledged by Dr. BULSTRODE, Dr. HAMER, and Dr. SWEETING.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are some of the principal amounts, additional to those already announced in THE LANCET, received at the Mansion House up to Wednesday evening, when the sum paid in came to £40,000:—

	£	s.	d.
St. Paul's Cathedral, with additions	4900	0	0
Christ Church, *Lancaster-gate*	1312	0	0
St. Jude's, South Kensington	505	0	0
St. Paul's, Onslow-square	396	0	0
All Saints, Ennismore-gardens	391	0	0
St. Paul's, Wilton-place, and St. Mary's, Graham-street	361	0	0
St. George's, Hanover-square	324	0	0
St. Mary's, Bryanston-square	320	10	0
Church of Annunciation, Marylebone	248	0	0
Union Chapel, *Islington*	236	0	0
St. Mark's, Hamilton-terrace	202	0	0
St. James's, *Piccadilly*	200	0	0
Holy Trinity, Tulse Hill	197	0	0
Holy Trinity, Brompton	194	0	0
Westminster Abbey	176	0	0
Roehampton Parish Church...	161	0	0
Emmanuel Church, Wimbledon	160	0	0
St. Peter's, Brockley, with additions	146	0	0
St. Augustine's, Highbury	146	0	0
Christ Church, Mayfair	145	0	0
Holy Trinity, Sydenham	140	0	0
St. Mary's, Kilburn	137	0	0
St. Bartholomew's, Sydenham	134	0	0
St. James's, Kidbrook...	131	0	0
Bromley Parish Church and *Chapel of Ease*	125	0	0
St. Paul's Presbyterian Church, Westbourne-grove	125	0	0
St. Peter's, Bayswater...	116	0	0
St. George's, *Bickley*	112	0	0
St. John's, Penge	110	0	0
St. Mark's, North Audley-street	109	0	0
Aldenham Parish Church	109	0	0
St. Anne's, Soho	106	0	0
Ascension Church, Balham Hill	101	0	0
Mr. and Mrs. G. P. Gooch	100	0	0
"A. B."	100	0	0
St. John's Presbyterian Church, Forest Hill	100	0	0
St. Andrew's, Leytonstone	97	0	0
Immanuel Church, Streatham	95	0	0
Church of the Annunciation, Chislehurst	94	0	0
St. Mary's *Parish Church*, Stoke Newington	92	0	0
St. Michael's, Blackheath Park	92	0	0
St. John the Evangelist, Putney	87	0	0
Greek Church	85	0	0
St. Mark's, Reigate	82	0	0
Beckenham *Parish Church*	78	0	0
St. Mary's, Boltons, with additions	78	0	0
Collection at the London *Commercial* Sale-rooms	77	0	0
Bromley Congregational Church	76	0	0
Christ Church, Hornsey	71	0	0
St. Thomas's, Portman-square	68	0	0
The Oratory, Kensington	66	0	0
Stamford-hill Congregational Church	65	0	0
St. Luke's, Hackney	65	0	0
St. Saviour's, Denmark Park	65	0	0
St. Luke's, Nutford-place	63	0	0
Christ Church, Brondesbury	63	0	0
St. Margaret's, Lothbury	63	0	0
All Saints, North *Peckham*	62	0	0
St. Gabriel's, Warwick-square	62	0	0
Brockley Park Church Open-Air *Mission*	60	0	0
Heath-street Baptist Church, Hampstead	59	0	0
Emmanuel, West Hampstead	59	0	0
Old Malden Parish Church	58	0	0
St. Stephen's, *Ealing*	58	0	0
St. Mary Magdalen, Wandsworth Common	56	0	0
All Saints, Notting Hill	55	0	0
St. Saviour's, Brixton-hill	54	0	0
St. Paul, Finchley	54	0	0
Orpington Church	53	0	0
St. Saviour's Cathedral, Southwark	53	0	0
Messrs. J. H. Vavasseur and Co.	52	10	0
Highgate *Presbyterian Church*	52	0	0
All Saints, Margaret-street	51	0	0
St. Andrew's, Totteridge	50	0	0
St. Mark's, Marylebone	48	0	0
Crouch-hill *Presbyterian Church*	47	0	0
Kensington Congregational Church...	47	0	0
St. Mary's, Hornsey Rise	46	0	0
Box outside Mansion House...	46	0	0
St. George's, Campden-hill	45	0	0
St. Augustine's, Kilburn	45	0	0
Christ Church, Highbury	45	0	0
Chapel Royal, Hampton Court	43	0	0
St. Matthias, Kensington	42	0	0
St. Cuthbert's, West Hampstead	41	0	0
St. Paul's, Harringay	41	0	0
St. Luke's, West Hampstead	41	0	0
Bromley *Presbyterian* Church	41	0	0
Hayes, Kent, Parish Church	41	0	0
Hornsey Parish Church	41	0	0
St. Mary's, *Acton*	40	0	0
Clapham Congregational Church	40	0	0
St. Matthew's, Sydenham	38	0	0
Christ Church, Southgate	38	0	0
Brixton Wesleyan Circuit	38	0	0
St. George's, Tufnell Park	37	0	0
St. Jude's, Chelsea	36	0	0
St. Matthew's, Brixton	36	0	0
Ilford Parish Church	35	0	0
St. Mary's Parish Church, Islington	35	0	0
Gray's Inn Chapel	35	0	0
St. Mary Magdalene's, Munster-square	35	0	0
King's Weigh House Church	34	0	0
Westminster Cathedral	33	0	0
St. Luke's, Holloway	33	0	0
Putney Parish Church	32	0	0
St. German's, Blackheath	32	0	0
Monken Hadley Parish Church	32	0	0
St. Michael's, Stockwell	32	0	0
St. Paul's, Wimbledon Park	31	0	0
St. Phillip's, Sydenham	30	0	0
Park Chapel, Chelsea	30	0	0
Woodford Parish Church	30	0	0
St. Mary Magdalen, Holloway	29	0	0
All Saints, Norfolk-square	29	0	0
Clapton Park Congregational Church	29	0	0
St. Mary-le-Park, *Battersea*	28	0	0
All Saints, Upper Norwood	28	0	0
Hammersmith Parish Church	27	0	0
South Woodford Congregational Church	26	0	0
	26	0	0
[illegible] lge...	26	0	0
[illegible] h ...	26	0	0
[illegible] Church	25	0	0
Holy Innocents, High Beach	25	0	0
Keston Parish Church	25	0	0
Belgrave *Presbyterian Church*	25	0	0
Hersham Parish Church	25	0	0
Whitfield Tabernacle, Tottenham Court-road	24	0	0
Kentish Town Parish Church	24	0	0
St. Barnabas's, Clapham-common	24	0	0
St. Simon's, Chelsea	24	0	0
Camberwell Parish Church	23	0	0
St. Paul's, Canonbury	23	0	0
St. Anselm's, *Pinner*	23	0	0
St. George's Garrison Church, Woolwich	23	0	0
St. Barnabas, S. Lambeth	22	0	0
Upper Holloway Baptist Chapel	22	0	0
All Saints, Child's Hill	22	0	0
Muswell Hill Presbyterian Church	22	0	0
Muswell Hill Congregational Church	22	0	0
St. John's, Upper Holloway...	22	0	0
St. Matthias, Upper Tulse Hill	21	0	0
Brentwood Parish Church	21	0	0
Holy Trinity, Northwood	21	0	0
Munster Park Wesleyan Chapel	21	0	0
Christ Church, Woburn-square	21	0	0
Nutley Lane, Reigate	21	0	0
Chipping Barnet Parish Church	21	0	0
Church of the Ascension, Lavender Hill...	21	0	0
	21	0	0
[illegible] Chapel	21	0	0
	20	0	0
Christ Church, Westminster	20	0	0
St. Saviour's, Holly Park	20	0	0
St. Luke's, Bromley, Kent	20	0	0
St. Augustine's, Grove Park	20	0	0
	20	0	

THE IMPERIAL CANCER RESEARCH FUND.

THE fourth meeting of the general committee of the Imperial Cancer Research Fund was held at Marlborough House on July 5th and was presided over by H.R.H. the PRINCE of WALES, the President of the Fund.

Those present included Lord Strathcona, Sir William Broadbent, Sir William S. Church, Sir Henry G. Howse, Sir Alfred Cooper, Mr. James Coats, Mr. H. L. Florence, Mr. H. J. Read, Dr. J. F. W. Tatham, Mr. J. Tweedy, President of the Royal College of Surgeons of England, Dr. J. Rose Bradford, Mr. H. T. Butlin, Mr. W. Watson Cheyne, Professor J. R. Dewar, Mr. J. Langton, Mr. R. Littlejohn, Professor J. McFadyean, Professor A. E. Mettam, Mr. J. A. Mullens, Dr. P. H. Pye-Smith, Dr. T. T. Whipham, Professor G. Sims Woodhead, Mr. R. Brudenell Carter, Mr. E. R. Frere, Mr. Henry Morris (honorary treasurer), Dr. E. F. Bashford (general superintendent of the research work), Dr. W. Cramer, and Mr. F. G. Hallett (secretary).

Sir WILLIAM CHURCH, Bart., K.C.B., chairman of the executive committee, moved the adoption of the annual report and in doing so gave an account of the proceedings of the executive committee and of the scientific investigations during the year. "Cancer investigation," he said, "has been carried out during the year in close conformity with the plan determined on in the second year of our research and may be conveniently described as falling under three main heads—the statistical, the histological, and the experimental. Additional data have been accumulated since, confirming the opinion that cancerous growths cannot be associated with any peculiarities of diet. Further evidence has been obtained that in considering the frequency of the occurrence of cancer due regard must be paid to the individual ages of the population under consideration and when it occurs in young subjects to the organs in which the disease manifests itself, cancer in young persons occurring for the most part in tissues and organs which lose their functional activity in early life and normally undergo degeneration and more or less complete absorption. The continued tabulation of the cases of malignant growth in the metropolitan hospitals, in which the presence of cancer has been proved by microscopical examination, has confirmed the opinion that in cases of internal growths the errors of diagnosis, even when under the charge of most experienced and accomplished observers, are much greater than would be expected and in no small degree explain many of the reputed cases of cure. Dr. Tatham of the General Register Office has had the national statistics of malignant disease rearranged in a manner which will enable them to be compared with the figures obtained from hospitals and other sources and thus afford a broader basis for the control of statistics. Histological, cytological, and experimental investigations have been vigorously carried on and have yielded results of remarkable interest, raising questions in connexion with malignant disease which had hardly been suspected before. The results which had been obtained in mice pointed to the necessity for yet more closely studying the processes of cell multiplication, for in the means which permit this to continue incessantly appears to lie the mystery we are in search of. Certain cancerous tumours are found occurring sporadically in mice which can be transplanted into other mice. In this way it has been found possible to perpetuate a malignant growth through successive generations of mice and thus obtain material for observation and study. Every transplantation does not succeed, very far from it, and at present we are not in a position to say what determines the success or failure of the experiment. Slight racial differences in the mice seem to have a distinct bearing on the success of transplantation. For example, Professor von Leyden of Berlin was kind enough to send us a live mouse which had a tumour which had been transplanted through three generations in Berlin wild mice, together with 20 Berlin wild mice. 47·3 per cent. of the transplantations made into the 20 Berlin wild mice were successful, whilst the transplantations into London wild mice gave only 1·4 per cent. of success, and in London tame mice the proportion (0·54 per cent.) was even less. When the initial difficulty of transplanting a tumour from one strain of mice to another has been overcome the percentage of success reaches approximately that which obtains when mice of the same strain are used. Careful examination of transplanted tumours has shown that a continuous power of growth is manifested by the transplanted cells and that the new growth originates from them and not from the cells of the host irritated or stimulated by the transplanted material; the reaction caused in the tissues of the host affords the means by which the transplanted cells are nourished. Another fact which is of great importance is that whilst in mice, as in man, spontaneous malignant growths occur in the aged rather than in the young, transplanted growths flourish as well, or better, in young and vigorous mice. I will not weary you with a description as to the differences between these mouse tumours and what are called infective granulomata; sufficient to say here that in the infective granulomata it is the cells of the infected animal which take on abnormal growths. It has long been recognised that malignant growths produce their injurious effects by their power of continuous cell multiplication. The artificial propagation of malignant growths is a demonstration of this power of cell division, for by its means we have from a single mouse tumour produced an amount of tissue equal in bulk to more than a thousand mice. As bearing on the infectiousness of cancer, it may be mentioned that large numbers of healthy mice have been kept for long periods in the same cages with mice suffering from both sporadic and inoculated tumours and yet in no single instance did the malignant growth occur in an uninoculated mouse. In connexion with the treatment of malignant growths a large amount of experimental work has also been done. The action of normal sera upon cancer cells outside the body does not prevent their growth when transplanted into the body, but subjecting them to the action of an immunising serum has in some cases deprived the cells of the power of growth, but no definite action has yet been observed when an immunising serum has been injected into a mouse suffering from cancer. The action of radium and radio-active solutions has been carefully studied and there is no doubt that both at times exert an influence on the growth and development of both normal and tumour tissues. No evidence, however, has yet been obtained that radium emanations have any selective or special action on tumour tissues, whilst the amount of radio-active solutions which is necessary to produce any action on the tissues is far in excess of what can be introduced into the body with safety. The Research Fund is indebted to Sir William Ramsay for preparing and placing radio-active solutions at its disposal. The expenses of the research must increase if we are to keep the highly trained staff which is necessary. We have lost the services of Dr. Cramer, who has accepted the appointment of Lecturer on Physiological Chemistry at Edinburgh; whilst Dr. Murray, I am happy to say, would not leave us, although offered a more valuable appointment as director of the Liverpool Cancer Research Fund. It places our research in very disadvantageous circumstances if we are unable adequately to remunerate the services of highly skilled members of our staff whose loss we should be unable to replace. Our work during the past year has been greatly aided by the collaboration of foreign investigators, more especially by Professor Borrel of the Institut Pasteur, Professor Jensen of Copenhagen, and Professor von Leyden and Dr. Michaelis of the German Cancer Committee. Very valuable assistance has also been afforded by the India, Foreign, and Colonial Offices, as well as by other public offices and bodies, and by private individuals, both in this country and abroad, but I regret to say that the unaccountable action of the postal authorities in refusing to transmit perfectly innocuous postal packets addressed to the research will disorganise the arrangements which, through the coöperation of the India, Foreign, and Colonial Offices, had been made for the transmission of specimens from India, the colonies, and other foreign countries. In conclusion, I think I may venture to say that the cytological and experimental work done during the past year marks a real progress in our knowledge of the mode of growth in certain forms of malignant disease. The malignancy of cancer appears to consist in the inherent power the cells possess of division and multiplication. If we can find out the nature of this apparently unlimited growth it is not unreasonable to hope that we may be successful in obtaining means for checking or limiting their proliferation and thus neutralising their malignancy."

Mr. TWEEDY, in seconding the motion, said he thought that all the subscribers to the Fund on reading the general report, and more particularly the scientific reports, must feel that this body was making distinct progress in the solution of the great mystery of the origin and the nature of cancer. Many of those who did not understand the processes of scientific investigations might desire that they should attain their goal at one step, as it were, but knowledge was not to be gained in this way. Whether they would ever attain the goal aimed at, or when, no man living could say, but he was convinced that this body for the investigation of the causation of cancer was proceeding by the right method—the method of science—which must give them true knowledge so far as it went. In the end he hoped that they would obtain the knowledge which they all so much desired.

The report was unanimously adopted.

Lord STRATHCONA proposed a vote of thanks to the chairman and members of the executive committee, the subcommittees, the honorary treasurer, and others who had assisted in the work of the Fund during the past year and expressed the gratification of the supporters of the Fund at having Sir William Church at the head of the executive committee.

Mr. LITTLEJOHN seconded the motion which was carried unanimously.

Sir WILLIAM BROADBENT proposed a motion as an amendment to the scheme of the Fund whereby the executive committee would be able to retain the services of valuable *ex-officio* members, when their terms of office having expired, their membership of the executive committee of the Fund also ceased. The amendment also proposed to add to the executive committee other persons likely to assist in the management of the Fund, for whose election at present no means were provided.

The motion was seconded by Mr. LANGTON and was unanimously agreed to.

Mr. MORRIS, in moving that the best thanks of the meeting be given to His Royal Highness for presiding and for permitting the meeting to take place at Marlborough House, said that they were all aware that from the inception of this scheme the hearty sympathy and goodwill of His Royal Highness had been given towards the establishing of a cancer investigation. As soon as the scheme was sufficiently advanced the Prince of Wales accepted the presidency, and on every occasion when opportunity had offered he had been good enough to make a gracious and encouraging mention of the work and of the objects of the Fund.

Mr. FLORENCE seconded the motion which was carried with acclamation.

The PRINCE OF WALES, in reply, said: My Lord and Gentlemen,—I beg to thank Mr. Henry Morris and Mr. Florence for the kind words they have used in proposing and seconding this vote and I thank you all sincerely for the way you have received it. I am very glad, as your President, to meet here again the members of the general committee of the Imperial Cancer Research Fund and to hear the very satisfactory record of the past year's work. Naturally, you will not expect me to touch upon the highly technical subjects dealt with in the annual report and in Dr. Bashford's scientific reports which have been circulated among you. But we all can recognise in them much evidence of laborious and careful investigation and of sure progress. These reports cover a very large field of investigation and show that no line of inquiry, however unpromising, is being overlooked. The search after fresh facts has been stimulated by the rejection during the past three years of certain fallacies which previously obscured the true problem and have now been exposed. One result obtained shows that cancer is not transferable from one individual to another as if it were an infectious disease. The destruction of preconceived ideas of the origin of cancer has cleared the way for further advance, while the number of hitherto unsuspected facts certainly gives hope of final success. The researches in the various British colonies and protectorates continue to yield information of increasing value and prove that the investigation is truly an Imperial one. Last year I mentioned that India had recently been included in the scope of inquiry. Since then India has contributed additional and interesting facts. Amongst the various races and castes of that great empire, differing so widely in customs, mode of living, and diet, cancer has been shown to be not uncommon. It is found in vegetarians as well as in those who eat fish and meat. Increasing interest in the question is being manifested in the larger self-governing colonies It is important to notice that owing to our possessions throughout the globe we are in a more favourable position than other nations for studying this disease, which manifests itself irrespectively of the varying conditions of life. These opportunities are being fully utilised not only for our own information but to the advantage of the scientific investigators of other nations less favourably situated. Many reputed remedies for cancer have been sent to our laboratories during the past year for examination not only from this country but from India, Australia, South Africa, and America. Unfortunately any value that they may have possessed to those who believed in them has been based upon the application of the term "cancer" to diseases which are not true malignant new growths. They have not survived the test of scientific examination. It is gratifying to know that our work is being carried out in harmonious conjunction with that of French, German, and American scientists. I feel sure that the committee share my feelings of satisfaction in having secured the retention of Sir William Church's services on the executive committee, of which he has been re-elected chairman. We have to acknowledge with gratitude the kindness of the Royal College of Physicians and the Royal College of Surgeons in placing their laboratories at the disposal of the Fund. In conclusion, I have to assure the executive committee, general superintendent, treasurer, and secretary of my deep appreciation of the eminent services rendered by them in their steadfast endeavours towards the solution of what still remains one of the greatest problems of human life.

The proceedings then terminated.

ASYLUM REPORTS.

Ayr District Asylum (Annual Report for 1904).—The report of the medical superintendent, Dr. C. C. Easterbrook, states that the average number of patients daily resident was 517. The admissions numbered 140. 56 were discharged recovered, the recovery rate being 44 8 per cent. on the admissions minus transfers from other institutions and minus admissions from private care of congenital and chronic cases. Ayrshire, it appears, stands twenty-eighth amongst the 33 counties of Scotland arranged according to the prevalence of insanity in them and is therefore one of the sanest. Dr. Easterbrook goes exceptionally fully and with copious statistical tables into the causation of insanity in the admissions. Insanity in the family was acknowledged in 36 per cent. of the males and 44 per cent. of the females. "Insane and neurotic constitution" was present in 40 per cent., and in 21 per cent. there had been one or more previous attacks of insanity. Alcohol was the cause of the attack in only 13·7 per cent., as against 25·9 per cent. in the previous year. The decrease in alcoholic cases mainly accounts for a fall below the average of the admissions for 1904 and this decrease is explained by the depression of trade during 1904. The deaths during the year numbered 59 and consent to necropsy was only refused in six. Only seven deaths occurred from pulmonary tuberculosis. The infirm and acute wards of this asylum appear from the report of the Commissioners in Lunacy to be overcrowded greatly, but a new hospital is to be erected.

Surrey County Asylum, Brookwood (Annual Report for 1904).—From the report of Mr. James E. Barton, the medical superintendent, it appears that the average number resident in this asylum during the year was 1309. The admissions numbered 346 (including 35 transfers from other asylums and two found "not insane"), the discharges 161, and the deaths 129, this last figure giving a proportion of 9·86 per cent. on the daily average number resident, which is slightly lower than the average rate in English asylums. The type of insanity in the admissions was, as for several years past, very unfavourable, about 25 per cent. only being considered to have reasonable prospect of recovery. Out of 22 cases of general paralysis, which were all that occurred amongst the 346 admissions, a history of syphilis was obtained in eight. Hereditary predisposition is stated to have existed in only 74 cases (21 per cent, or 24 per cent. excluding transfers and those "not insane"), which is certainly an unusually small proportion. Figures on this point are notoriously untrustworthy, depending as they do upon the statements of patients' relatives. The recovery rate, calculated as is usually done, was 30·64 per cent. on the admissions The Commissioners in Lunacy report that the asylum is maintained in very good order. Some important improvements to meet the contingency of an outbreak of fire have been carried out. The weekly charge for home patients is 12*s.*, which is high for a county asylum.

Looking Back.

FROM

THE LANCET, *SATURDAY*, July 7, 1827.

The answers to some of the queries propounded by the Royal Commissioners[1] are extremely curious and amusing, as showing the coolness with which these Northern Professors assume and defend the most ridiculous of all absurdities. They distinctly state, that a man's chance of success in his profession is in the inverse ratio of his attainments—directly opposed to his merits and his talents! One of them, Dr. Alison, Dean of the Faculty of Medicine, mentions this as "a general fact, of which evidence can be adduced!" And how does the reader think this "general fact" is assumed? Why, on the ground that the general practitioners are more employed than the Edinburgh graduates, who, according to Dr. Alison, have a world of scientific attainments which the former are supposed to want! His graduates, he says, are oftener surpassed in practice by men who are their inferiors, than by men who are their superiors in general literature and science; he would say, *much oftener*. But assuming all this to be true, that in the lottery of physic the chance of a man who holds ten tickets is decidedly worse than that of one who is possessed but of five—which by-the-bye is absurd—it does not follow that a person taking a doctor's degree, which is in some respects a *literary* degree, should not be grounded in literature and general science; for wanting these the degree of *doctor* is as much abused as his Majesty's head upon a bad shilling. What would they have? They surely do not pretend that practical medicine can be best learned at Edinburgh, and they do not wish to enforce any great degree of literary study; yet, forsooth, the *gradus doctoris* is to be the stamp of superior excellence in both! The day will come, it has already dawned upon us, when the empty distinctions of colleges, which were probably of some use during the dark ages, shall be valued as they merit, just as the glimmering midnight-taper is unseen or disregarded in the meridian sun; but in the meantime we cannot see the difference between an *unlearned* doctor, a doctor unacquainted with Greek and Latin, polite literature, and the arts, which Dr. Alison thinks he may be—and the disgraceful, but well known Eady, neither of them being what he pretends to be, nor what the ignorant give him the credit of being. As long as a knowledge of Greek and Latin is expected from a gentleman, so long, at least, will it be from the physician, and there are many reasons, strictly professional, which might always render such knowledge desirable, although no invidious contrast were drawn and no such acquirements expected; of course it is a great error to give more attention to the extra-professional departments of literature and science than can be conveniently spared; but as these things are usually studied in early life, and furnish a calm and delightful retreat from the severer studies, anxieties, and occupations inseparable from our calling, we, for our parts, (Dr. Alison may think as he pleases), should be very loth to have been altogether without them.[2]

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[1] The Royal Commission for visiting the Universities and Colleges of Scotland.

[2] Excerpt from leading article.

ROYAL INSTITUTION.—A general monthly meeting of the members of this institution was held on July 3rd, Sir James Crichton-Browne, treasurer and vice-president, being in the chair. Baroness Gray was elected a member. The special thanks of the members were returned to Sir Andrew Noble, K.C.B., F.R.S., for his donation of £100 to the fund for the promotion of experimental research at low temperatures, and to Mr. Rollo Appleyard for his gift of a portrait of the late Professor J. D. Everett, F.R.S., M.R.I.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

County Borough of St. Helens.—The St. Helens milk depôt has not, Dr. J. J. Buchan reports, been extensively patronised during 1904, although it was kept prominently before the public during that time. The number of children using the milk continuously was 160 and more than half of these—i.e., 86—were, when first taken to the depôts, suffering from gastro-intestinal disorders consequent upon hand-feeding. This point is a very important one, as it has a distinct bearing upon the statistics furnished in the following table:—

Year.	Number of children on books.	Death-rate per 1000 among children at depôt.	Infantile death rate.
1899	232	103	157
1900	332	102	188
1901	282	106	175
1902	200	82	167
1903	183	54	137
1904	160	68	174

Dr. Buchan infers from these figures that "had the ordinary death-rate in the borough in each year occurred among the users of the milk the deaths for these six years would have been increased by 109; in other words, there are 109 children living now who would have been dead but for the infant milk depôt." Without wishing for a moment to detract from the good work done by the depôt we are afraid that this method of presenting the gain is a little too optimistic. There are, of course, many critics who would take exception to these figures altogether and who would say that the children are selected in that they belong to mothers who have sufficient care for their lives to take them to the depôt at all, whereas many of the mothers who do not thus take their children belong to the neglectful class amongst which there is naturally a high infantile mortality. But this criticism seems to be met in the present case by the statement that more than 50 per cent. of the children were suffering from gastro-intestinal disorders. Be this as it may, we are hardly justified in asserting that the 109 children who did not die while they were attending the depôt are still alive. To say this is to imply that all children die from errors in diet. The main difficulty in connexion with the St. Helens depôt is that of distribution at convenient centres, and apparently the Dairymen's Association, which was approached on the subject, was not able to render assistance. The amount falling on the rates by the operations of the depôt during 1904 was £176 3*s.* 7*d.*

Metropolitan Borough of Woolwich.—This borough council now maintains three beds at Peppard Common sanatorium but Dr. Sidney Davies states that as regards cure sufficient time has not elapsed to form a trustworthy opinion. He adds, however, that of 17 patients who have been in the sanatorium three are still at the institution and three have died. Of the remaining 11 all were much improved in weight and other ways by their stay. Two are at home apparently quite well—one is at work and the other is seeking work. Four have relapsed since their return. Of these one is now in the Brompton Hospital, one is at work but getting worse, and two are being treated at home. In three cases the treatment did not arrest the disease, although it improved the patient's general condition. Dr. Davies thinks that, although isolation in this sanatorium may prevent the infection of other members of the same family and afford education in curative and preventive measures, it cannot be expected that three months' treatment will, as a rule, complete the cure. For this he regards six months at least as being necessary.

County Borough of Croydon.—Dr. H. Meredith Richards makes a contribution in his current annual report to the discussion as to the value, if any, of isolation hospitals for scarlet fever. He divides the cases which occurred in 1904 into two groups. In the "hospital" group—i.e., in the group in which the patients were isolated in hospital—there were 298 susceptible children (under 14 years of age) left at home after removal of the primary case or cases. In the "home" group there were only 50 such susceptible children at home on the notification of the primary case or cases. In the "hospital" group 63, or 21·2 per cent. of the susceptible children developed scarlet fever after removal to hospital of the primary case, while in the "home" group 19, or 38 per cent., developed the disease. Dr. Richards regards these figures as showing the advantage of hospital isolation and he points out that the majority of the "home" group consisted of patients who could be satisfactorily nursed at home. Certainly the figures are of value but they would, we think, have been more trustworthy had the susceptible children been split up into age groups and the incidence on each age group for both classes furnished. Dr. Richards does not think highly of the midwife. He tells us that during 1904 the appliances of the Croydon midwives were inspected and that in nearly every instance the cases, mainly through ignorance as to the meaning of the words used in the rules, were improperly kept. Several of the midwives being unable to write had to have their forms filled up by deputy. Many of the women did not possess the instruments which they are required to take with them, but this omission Dr. Richards does not regret as, in his opinion, the women are totally ignorant of the uses to which to put the instruments. Dr. Richards has been appointed medical adviser to the education authority, his duties being (*a*) to report on the sanitary condition of the schools and the general health of the scholars; (*b*) to examine blind, deaf, and defective children; (*c*) to examine plans for altering or erecting school buildings; (*d*) to examine pupil teachers selected for appointment; (*e*) to examine truant children; (*f*) to visit any employé absent through illness; (*g*) to examine children stated to be physically unfit to attend school; and (*h*) to advise the committee when required to do so.

County Borough of Bournemouth.—The desire of the people of Bournemouth to consume what they think is a "rich" milk is well illustrated by the fact that 64·8 per cent. of the samples purchased and examined during 1904 were artificially coloured with annatto. We should have thought that the educated class which forms such a substantial portion of the total population of Bournemouth would have had more discrimination in the matter of natural milk. It is, however, on the other hand, gratifying to read that for the first time for several years all the samples of milk analysed were found free from preservatives; presumably formalin was looked for as well as boric acid.

Edmonton Urban District.—Dr. A. W. J. MacFadden, commenting upon the notification of pulmonary tuberculosis, remarks, "Compulsory notification under the Act of 1899 has in most cases been preceded by a probationary period of voluntary notification during which the benefits of the system have become apparent and its opponents have been reconciled to the inclusion of phthisis in its proper category—namely, that of the compulsorily notifiable diseases." But it is news to us that pulmonary tuberculosis is a compulsorily notifiable disease in any place other than Sheffield, and even there the disease is not subject to any of the penal clauses of the Public Health Act. Perhaps Dr. MacFadden will kindly furnish in his next annual report a list of the places in which the disease in question is notifiable. The Edmonton district council has provisionally arranged to take up three beds at the proposed Middlesex sanatorium. It seems almost a pity that some of the beds at the Mount Vernon Sanatorium at Northwood cannot be utilised by the sanitary authorities in Middlesex.

Plympton St. Mary Rural District Council.—Mr. S. Noy Scott, speaking of sanatoriums for consumption, says, "Since my last report another year's experience has been gained of the 'sanatorium treatment' and I am forced to state that in spite of much good that can legitimately be assigned to such institutions, yet there seems to be a steadily growing opinion that the great expectations which were at first formed of them were exaggerated ones, and that the time has come for a thorough investigation of the whole question. No one doubts that the methods on which sanatorium treatment is based—viz., unlimited fresh air, abundant feeding, and good general hygiene—are absolutely right, but many accurate observers are expressing the opinion that these methods can be more easily obtained by a much less costly and extravagant system than is at present in vogue, and, further, that in building sanatoria we are using money and energy which could be far more beneficially spent in such prime preventive measures as well-built cottages on suitable sites." Seeing that there is a sanatorium for Devonshire near Brent it would have been perhaps more helpful had Mr. Scott told us something as to the after-history of the cases treated at that institution.

Borough of Eastbourne.—Dr. W. G. Willoughby thinks that a sanatorium for consumption should be used largely on educational lines and not merely as an institution to replace the workhouse infirmary. Admission to a sanatorium should, in his opinion, be limited to ratepayers of some years' standing and he evidently sees that otherwise consumptive patients might be attracted to Eastbourne were a sanatorium erected there. He points out, however, in connexion with the question of providing such an institution that "the decrease in consumption commenced long before sanatoria became the fashion, by improved sanitation, and after all the object of a sanitary authority should be to make every house and the whole borough as sanitary as a sanatorium." Perhaps this is a somewhat extreme view, since the fresh country air is one of the essentials of the sanatorium treatment and this is difficult to procure in an existing town.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8496 births and 379 deaths were registered during the week ending July 1st. The annual rate of mortality in these towns, which had been 13·5, 13·4, and 13·0 per 1000 in the three preceding weeks, further declined to 12·7 per 1000 last week. In London the death-rate was 12·0 per 1000, while it averaged 13·0 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 6·8 in Willesden, in Hornsey, in Leyton, and in Handsworth (Staffs), 7·2 in East Ham, 7·5 in King's Norton, and 7·6 in East Ham and in Walthamstow; the highest rates were 17·5 in Stockport and in Tynemouth, 17·6 in Blackburn, 18·1 in Wigan, 19·1 in Merthyr Tydfil, 20·7 in Middlesbrough, 21·2 in Sunderland, 23·1 in West Bromwich, and 23·9 in Stockton-on-Tees. The 3793 deaths in these towns last week included 371 which were referred to the principal infectious diseases, against 413, 355, and 348 in the three preceding weeks; of these 371 deaths, 120 resulted from measles, 89 from diarrhœa, 72 from whooping-cough, 39 from scarlet fever, 32 from diphtheria, 18 from "fever" (principally enteric), and one from small-pox. In Tottenham, Leyton, Brighton, Southampton, Burnley, Halifax, and in ten other smaller towns, no death from any of the principal infectious diseases was registered, while they caused the highest death-rates in West Bromwich, Bootle, Warrington, Sheffield, Middlesbrough, and Sunderland. The greatest proportional mortality from measles occurred in West Bromwich, Warrington, Barrow-in-Furness, Sheffield, and Sunderland; from scarlet fever in Bootle; from whooping-cough in Oldham, Preston, and Middlesbrough; and from diarrhœa in Bootle and Rhondda. The mortality from diphtheria and from "fever" showed no marked excess in any of the large towns. One fatal case of small-pox was registered in London but none in any of the large provincial towns. The Metropolitan Asylums Hospitals contained four small-pox patients at the end of last week, against nine, seven, and six at the end of the three preceding weeks; one new case was admitted during the week, against three, three, and one in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 2285, 2356, and 2427 on the three preceding Saturdays, had further increased to 2473, on Saturday, July 1st; 334 new cases were admitted during the week, against 269, 292, and 325 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 191, 189, and 144 in the three preceding weeks, further declined last week to 140, and were six below the number in the corresponding period of last year. The causes of 36, or 1·0 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Leicester, Nottingham, Manchester, Leeds, Hull, Newcastle-on-Tyne, and in 51 other smaller towns; the largest proportions of uncertified deaths were registered in Hanley, Liverpool, Sheffield, Sunderland, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal

Scotch towns, which had been 16·4, 15·7, and 15·1 per 1000 in the three preceding weeks, rose again to 16·5 per 1000 during the week ending July 1st, and was 3·8 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 12·2 in Perth and 14·7 in Edinburgh and in Leith, to 18·2 in Glasgow and 19·3 in Greenock. The 555 deaths in these towns included 31 which were referred to whooping-cough, 17 to measles, 14 to diarrhœa, two to "fever," and one to diphtheria, but not any to small-pox or scarlet fever. In all 65 deaths resulted from these principal infectious diseases last week, against 62, 74, and 60 in the three preceding weeks. These 65 deaths were equal to an annual rate of 1·9 per 1000, which was 0·7 per 1000 above the mean rate last week from the principal infectious diseases in the 76 large English towns. The fatal cases of whooping-cough which had been 23, 29, and 18 in the three preceding weeks, rose again last week to 31, of which 22 occurred in Glasgow, five in Edinburgh, and two in Greenock. The deaths from measles, which had been 17, 26, and 18 in the three preceding weeks, further declined to 17 last week, and included ten in Glasgow, five in Edinburgh, and two in Perth. The fatal cases of diarrhœa, which had been 15 in each of the two preceding weeks, decreased last week to 14, of which eight were registered in Glasgow, two in Dundee, and two in Leith. The deaths from "fever," which had been three, two, and three in the three preceding weeks, declined to two last week and were both registered in Greenock. The deaths referred to diseases of the respiratory organs in these towns, which had been 89, 63, and 74 in the three preceding weeks, declined again last week to 68, and were 12 below the number in the corresponding period of last year. The causes of 16, or nearly 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 19·3, 17·2, and 17·9 per 1000 in the three preceding weeks, declined again to 14·9 per 1000 during the week ending July 1st. During the past 13 weeks the death-rate has averaged 20·4 per 1000, the rates during the same period being 14·3 in London and 16·1 in Edinburgh. The 108 deaths of persons belonging to Dublin registered during the week under notice were 22 below the number in the preceding week and included seven which were referred to the principal infectious diseases, against five, three, and six in the three preceding weeks; of these, two resulted from measles, two from diarrhœa, and one each from diphtheria, from whooping-cough, and from "fever," but not any from small-pox or scarlet fever. These seven deaths were equal to an annual rate of 1·0 per 1000, the death-rates last week from the principal infectious diseases being 1·1 in London and 1·7 in Edinburgh. The deaths from measles, diphtheria, "fever," and diarrhœa corresponded in each case with the numbers in the preceding week; one fatal case of whooping-cough was registered, against two, two, and none in the three preceding weeks. One inquest case and two deaths from violence were registered; and 42, or more than a third, of the deaths occurred in public institutions. The causes of seven, or more than 6 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Fleet Surgeon Francis Austen Jeans has been promoted to the rank of Deputy Inspector-General of Hospitals and Fleets in His Majesty's Fleet (dated May 27th, 1905).

The following appointments are notified:—Fleet Surgeons: G. D. Twigg to the *Victory* and P. B. Handyside to Chatham Hospital. Staff Surgeons: S. T. Reid to Chatham Hospital; J. C. Durston to the *Flora;* and R. J. MacKeown to the *Vivid.* Surgeons: P. W. MacVean to the *Niobe;* A. A. Forrester to Chatham Hospital; H. W. Hull to the *Pathfinder on commissioning;* J. H. Jones to the *Pyramus;* W. M. Keith to the *Eclipse;* and W. L. Hawkins, lent to the *Speedy.*

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel L. E. Anderson is appointed to the medical charge of the Cambridge Hospital, Aldershot, and to command No. 1 Company, vice Lieutenant-Colonel H. W. Hubbard. Major J. D. Ferguson, D.S.O., is appointed second-in-command of the Depôt and Training School, Aldershot, vice Major F. J. Greig.

INDIAN MEDICAL SERVICE.

Bengal: Majors to be Lieutenant-Colonels (dated April 1st, 1905): Francis James Drury, Herbert Jekyl Dyson, Frederick Arthur Rogers, D.S.O., and Edward Richard William Charles Carroll.

The King has approved of the retirement from the service of the undermentioned officers:—Surgeon-General George William Robertson Hay (dated Dec. 27th, 1904); Colonel Charles Henry Joubert (dated March 29th, 1905); Lieutenant-Colonel George Spiers Alexander Ranking (dated May 30th, 1905); Lieutenant-Colonel George Tucker Thomas (dated June 26th, 1905); Lieutenant-Colonel Arthur James Sturmer (dated April 12th, 1905); Lieutenant-Colonel Cooverjee Cowasjee Vaid (dated May 18th, 1905); and Lieutenant-Colonel Upendra Nath Mukerji (dated Feb. 17th, 1905).

VOLUNTEER CORPS.

Rifle: 3rd Volunteer Battalion the Gloucestershire Regiment: Surgeon-Lieutenant (Surgeon-Captain, Army Medical Reserve of Officers) C. R. Browne to be Surgeon-Captain (dated July 5th, 1905). 5th (Glasgow Highland) Volunteer Battalion, the Highland Light Infantry: Surgeon-Lieutenant W. Ritchie to be Surgeon-Captain (dated July 5th, 1905).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Leicester and Lincoln Bearer Company: Alastair MacGregor to be Lieutenant (dated July 5th, 1905).

THE BIRTHDAY HONOURS.

In the list of birthday honours are the names of Surgeon-General Charles McDonagh Cuffe, C.B., who has been promoted to Knight Commander of the Bath; Surgeon-Major Thomas Egerton Hale, V.C., a survivor of the Crimean War, and Surgeon-General William Launcelot Gubbins, M.V.O., Principal Medical Officer of the Western Command in India, who have been made Companions of the Bath; and Colonel D. Bruce, F.R.S., R.A.M.C., and Lieutenant-Colonel and Honorary Colonel William Coates, R.A.M.C. Volunteers, who have been made Companions of the Bath in the Civil Division.

ROYAL VISIT TO MILLBANK MILITARY HOSPITAL.

On July 1st the King and Queen, accompanied by Princess Victoria, visited Millbank Military Hospital. Among those present to receive their Majesties were Surgeon-General A. H. Keogh, C.B., Director-General of the Army Medical Service; Major-General L. J. Oliphant, C.B., commanding the London District; Colonel A. T. Sloggett, A.M.S., C.M.G., Principal Medical Officer, London District; the Hon. Sidney Holland, and Sir Frederick Treves, C.B., K.C.V.O.

THE SCHOOLBOYS' REVIEW.

As regards the late review in Hyde Park of some 4000 or 5000 public school boys by the Duke of Connaught we may remark that the public had a good opportunity of seeing on that occasion the material which is ready to hand for forming a new line of defence. On both physical and moral grounds we hope that the time will come when it will be compulsory that every boy shall be taught the elements of military drill and shall learn the use of the rifle so as to fit himself to take part, if need be, in the defence of his country.

THE WAR IN THE FAR EAST.

There is no news of any special medical interest from the seat of war. That about the general state of affairs in Russia, and more especially as regards the actual condition of her naval and military forces, if taken in connexion with the recent unprecedented events at Odessa, Sevastopol, and elsewhere, has been so conflicting and liable to undergo such sudden and complete changes almost from day to day that it is impossible to form any accurate picture of the situation. It seems clear, however, that the forces of the Russian Government have been going through a very grave crisis and that, so far as Odessa at any rate is concerned, its inhabitants are only now emerging from a state of panic. It is settled that the Peace Conference is to take place but whether there is to be any armistice beforehand has not been decided. According to the latest accounts, Admiral Rojdestvensky is progressing favourably.

Several Russian medical men now in active service in the

Far East have asked the Minister for War whether those who have already been five years in service in that region may now have the option of returning to European Russia. The answer was in the negative unless such return were necessary for their recovery from wounds or illness, but owing to the undermanning of the medical service in the active army no one who was physically fit could be spared.

Correspondence.

"Audi alteram partem."

THE PRINCIPLES OF HEREDITY.

To the Editors of THE LANCET.

SIRS,—Mr. M. D. Eder's arguments in THE LANCET of June 17th, p. 1675, are somewhat difficult to follow. In his opening paragraph he paraphrases Dr. Archdall Reid and then seems to think he has controverted him. But to paraphrase is not to controvert.

The doctrine of evolution through natural selection is almost universally accepted by scientific men. Until recently it was universally believed that races which have long been exposed to a lethal and prevalent disease are more resistant than races which have been less exposed—for example, negroes as compared to Englishmen in relation to malaria and Englishmen as compared to Polynesians in relation to tuberculosis. It was believed also that South Europeans and Jews are more temperate than North Europeans in regard to alcohol and North Europeans than Red Indians; whereas natives of India, who have long used opium, are more temperate as regards it than Chinamen, who have used it less and who, on the other hand, are more temperate than Burmans, Polynesians, and Australian natives who have only recently made the acquaintance of the drug. Since, however, Dr. Reid attributed this acclimatisation (i.e., evolution) to natural selection Mr. Eder and one or two other gentlemen have discovered that it has no real existence. There is a direct conflict of evidence, but I am inclined to think that most people will believe, for example, that Englishmen are more resistant to tuberculosis than Polynesians, and Italians and Jews more temperate than Englishmen and Red Indians.

Mr. Eder's assumption that malaria has disappeared from England because Englishmen have become quite immune is totally unwarrantable. Dr. Reid clearly shows that no race can become *immune* to any disease to which it is susceptible through natural selection. He has assumed merely that negroes have become more *resistant* than Englishmen because they have suffered more. When Mr. Eder states that plague has been endemic in the East from a remote period does he mean that during this period the mass of the population has been continually exposed to infection? If he does not mean this his objection has no point. As a fact, the literature of the subject proves that plague is peculiarly an epidemic malady.[1] Apparently he disputes the statement that disease when epidemic is more terrible than when endemic. But, to take a couple of examples out of very many, the inhabitants of Great Britain flourished when both small-pox and measles were endemic. But a single epidemic of small-pox swept away 3,500,000 of the comparatively small population of Mexico, and quite recently (1876) more than a quarter of the inhabitants of Fiji perished during an epidemic of measles. In each case practically the whole population was stricken down, the sick were left untended, the business of the community was neglected, and famine followed.

Of course, Dr. Reid does not attempt to prove that the "non-inferiority" of certain races as compared to others is due to the use by the former of alcohol. Such a doctrine would contradict his entire teaching. No one has been so absurd as to suggest that the races which have used alcohol would have risen to the superman of Nietsche if they had not used it. The principle of parsimony has been thoroughly recognised by students of heredity, but they have recognised also the principle of correlation. Mr. Eder states that Dr. Reid has devoted little "space to the relation of the germ plasm to the environment." The actual truth is that many pages—one might almost say the whole work—are devoted to a consideration of this point. He implies that Dr. Reid advocates the sterilisation of the insane. Dr. Reid does not even hint at it. Both in his actual statements and in his implications Mr. Eder is inexcusably inaccurate throughout.

For myself, I can only say that I have read the work with great profit and pleasure and with entire conviction. It contains new matter and is original to a very unusual degree; it is lucidly, vividly, and interestingly written; it is the most considerable work on the subject that has appeared in the English-speaking world and the most comprehensive that has been published anywhere. It is not too much to say that no student of heredity, medicine, or sociology can afford to neglect it.—I am, Sirs, yours faithfully,

June 19th, 1905. D. WAUDBY.

To the Editors of THE LANCET.

SIRS,—Without any burning desire to confer a valuable service on science and humanity I willingly accede to Dr. Archdall Reid's request to amplify, so far as I can, my account of an epidemic of beri-beri in South America. The incident to which I referred took place at Puerto Alonzo, on the River Acre, a tributary of the Purus, in the year 1902-03. Puerto Alonzo is situated about 11° S. and 73° W. (I am writing without my papers and books to refer to). As to the number of Europeans who lived there and the number attacked I can speak positively because I saw them all, including the one who was still ill when I arrived (a Boer). I cannot furnish the exact numbers of the garrison nor of those attacked because I only reached the place towards the end of the siege; the returns were not my property and many of the papers were lost under the difficult conditions we were in. There is no exaggeration in the figures I give; the garrison was over 350 and more than 100 died from beri-beri. These figures were based on personal communication of the commanding officer and others to myself and on information I had from those who attended the sick. I must point out, however, that my observation was a particular one; having seen beri-beri in Europeans I could hardly have stated that it does not occur in Europeans. Dr. Reid writes that if my observation be correct there must be something in the waters of the Upper Amazon to account for the relative immunity of Europeans. Surely this is hardly one of these uses of the imagination in science which Tyndall advocated. Hypotheses by the score pass through the mind but I should think only those deserve publication that can be more or less readily verified by experiment.

Having had special opportunities of studying disease among the Jews during the last two years I repeat that this race within the limits of my observation suffers from alcohol pathologically like other races and that they are not moderate drinkers. To controvert my criticism of Dr. Reid's views on malarial immunity with a series of suppositions but strengthens my argument. It is asked why I suggested that there is no evidence to show that the malaria parasite which once flourished here was different from that in existence elsewhere. I suggested it precisely to meet by anticipation the views of those with whom conjectures pass for facts. I failed in my object. My experience of the South American people is to some extent confirmed in the very number in which you printed my letter. "Intemperance is general amongst the working-classes," observes the British Vice-Consul at Oruro, Bolivia.[1]

Please, Dr. Campbell, I did not repudiate the principle of natural selection. I should not be so impertinent. But really to-day the expression is quite devoid of meaning, seeing that it has so many. If Dr. Campbell tells me what he understands by the principle I shall be glad to repudiate his view, the editors' patience and my time permitting. Statistical evidence is alone in favour of the hereditary nature of tuberculosis; the affirmative view of so many great clinicians is of the same nature—i.e., so many cases where successive generations have suffered that no further evidence appears to them necessary. But if one can find a dozen (or even one) assured cases of tuberculosis without any evidence of the disease in the preceding generations all the so-called inherited cases can be explained by infection. The predisposition of man to tubercle, to the tænia solium, and certain other parasites is racial, just as other animals have their particular parasite. The explanation of parasitism is now undergoing solution. The current text-books of pathology give no support to the view of the inherited nature of tuberculosis.

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[1] See, for example, Hirsch's Handbook of Geographical and Historical Pathology, vol. i., pp. 494–544.

[1] THE LANCET, June 17th, p. 1666.

I deprecated legislation or medical interference—*e.g.*, sterilisation—based on the *view that insanity is inherited.* For the present I will not respond to Dr. Campbell's challenge and decline to say whether I consider any forms of insanity are inherited. One of my purposes in criticising Dr. Reid's work was that I believed he had built up a [illegible] a few incorrect observations and [illegible] think it illegitimate *for scientists to warn legislators against, e.g.*, interfering with the licensing laws on such insufficient evidence.

Dr. Karl Pearson, in his interesting essay on Education prefaced to the "Encyclopædia Britannica," states that during the course of his investigations he received many foolish suggestions from all sources, but that the most unscientific and absurd came from medical men. This reproach will not be removed so long as we hold to formula instead of to facts, to loose expressions that sound well and mean nothing. A thrombus occurs in the jugular vein as part of a pathological condition; the reporter must needs remark: "The blocking of the venous channel was nature's effort to localise the inflammatory process." As well say the diseased patient was nature's effort to maintain the doctor. The College of Physicians might find employment for several censors confining themselves solely to medical literature.

I am, Sirs, yours faithfully,

June 23th, 1905. M. D. EDER.

MEDICINE, ITS PRACTICE AND ITS PUBLIC RELATIONS.

To the Editors of THE LANCET.

SIRS,—I have read with considerable interest the various articles on "Medicine, its Practice and its Public Relations," which have appeared in *your columns since February last* and would like to make a few comments on the report of the *present state of medical education.* It seems to me this fifth year of the curriculum has been a "sore spot" ever since it was added, and the intention of the General Medical Council in lengthening the course from four to five years was undoubtedly that of enabling the student to devote his final year more entirely to clinical work. Why has this wise intention been frustrated? I think it is generally admitted that a serious waste of *time occurs during the first year* in taking the elementary subjects of chemistry, physics, and biology, whilst *later* the student also becomes hampered with the additional items which gradually continue to increase *in number.*

Now it occurs to me that the broad lines of reform necessary are these: (1) the subjects of chemistry, physics, and biology should be *passed previously* to commencing the curriculum; (2) the whole course of lectures and hospital appointments, including attendance on vaccination, fevers, ophthalmology, &c., should be completed in four years, including examinations, leaving only that of medicine and surgery to be accomplished at the end of the fifth year; and (3) the final year, or, at any rate, six or eight months of it, should be spent in compulsory pupilage to a registered general practitioner.

This latter suggestion may appear odd, but I have *formed* the opinion, and am confident of *many* who support it, that herein lies a problem of the utmost importance to the student, *the profession, and the* public. Undoubtedly the hospital system is a great advance on the old apprenticeship days, but we run the risk of serious *error in* excluding *altogether* this experience of general practice which formerly obtained. *I have heard the statement repeatedly* made by men, six months after qualifying and taking an assistancy, how much they regretted not having had *the same period in* actual practice prior to passing their final examination. Under existing conditions a man may even *possess his* diploma or degree without ever having been brought into contact with such a common malady as measles, and *of* course the knowledge of the management and routine of practice, to say nothing about the all-important *factor of tact and judgment* in dealing with the various phases of humanity, these things are a complete blank to him. And yet these are the men who when qualified seek assistantships in general practice and demand the usual salaries. They then discover that they have to learn *to apply* their knowledge in very different ways to those which were enjoyed in hospital life, surrounded by nurses and appliances *ready to* hand at any moment, and it is then only the man with skill and resourcefulness under awkward conditions who can hope to be successful.

It would be interesting to hear an expression of opinion from your readers on this matter. My point is that the curriculum of *five years should result in a complete* equipment of the student to manage at any rate a general practice and *resting exclusively on the* hospital training. I ask, Is it so?

I am, Sirs, yours faithfully,

Horbury, near Wakefield, June 27th, 1905. WALTER ASTEN.

THE TREATMENT OF RINGWORM OF THE SCALP BY THE X RAYS.

To the Editors of THE LANCET.

SIRS,—In reply to the letter of Mr. Winwood Smith in THE LANCET of July 1st, p. 49, I would say that, so far as the scalp in childhood is concerned, I have found practically no difference in the susceptibility of different individuals since I have been able accurately to measure the dosage by means of Sabouraud's pastilles. That there is, however, a difference in the susceptibility of different regions in the same individual there can, I think, be no doubt, and I should hesitate to apply to the face more than half the maximum dose for the scalp. It is said, too, that the largest dose which the skin can absorb without risk to its integrity is greater in the case of old people than in the middle-aged and greater in adults than in children. But upon *this point* I do not feel competent to give an opinion. Certainly an inflamed surface is much less tolerant than a normal skin and should receive a smaller dose.

I would explain the occurrence of radio-dermatitis in the *cases mentioned by Mr. Smith by the supposition* that, in spite of the apparently similar conditions, the output or the *quality of the x rays* was not the *same* in each instance; *the* same tube may emit a different amount and quality of rays during two *equal and consecutive periods of time, although* the primary current remains the same, for the tube may become heated by the passage of the current and so lowered in vacuum, thus allowing a greater amount of current to pass through it. Other points to be taken into consideration are: (1) the distance of the surface exposed from the anticathode of the tube, since with the same quality and quantity of rays coming from the tube the therapeutic activity varies inversely with the square of the distance; and (2) the *interval of time* between consecutive exposures, since if a second exposure takes place before the action of the first has passed off there will, of course, be a cumulative effect. I have no doubt that in the examples given by Mr. Smith the unequal results were due to the impossibility at present of insuring accurate dosage except by measurement of the rays as they leave the tube, which, so far as I know, can only be made by means of the pastilles of *Holzknecht* or of Sabouraud. The pastilles of Sabouraud and *Noiré may* be obtained *from* the maker, M. L. Drault, 57, Boulevard Montparnasse (VI^e^ Arrt.), Paris, *or* from Mr. Schall, New Cavendish-street, London, W.

I am, Sirs, yours faithfully,

Weymouth-street, W., July 1st, 1905. H. G. ADAMSON.

VINCENT'S ANGINA AND THE BACILLUS FUSIFORMIS.

To the Editors of THE LANCET.

SIRS,—In reference to the article on *the above subject*, which appeared in THE LANCET of May 13th, p. 1260, by Professor H. Vincent, the following case may be of interest. A native cavalry soldier came under my care last year for ulceration of the gums and loosening of the teeth. On the right side of the lower jaw the gum was swollen, pulpy, and tender, and was perforated in five or six places on the outer *aspect.* The first and second molars and both bicuspids were quite loose and might have been removed with the finger and the thumb. *On* pressure a considerable amount of fœtid pus welled up around the teeth and oozed out of the perforations *referred* to. The condition had *only* existed for a week or so and the chief complaint was the difficulty in masticating, the disagreeable taste in the mouth, and slight fever. The case was looked upon as one of Riggs's disease—pyorrhœa alveolaris—and treated energetically by local antiseptic applications and douching. A smear of the pus was taken and laid aside; the circulating blood was examined for malarial parasites with a negative result. About ten days afterwards and when the patient had recovered I had occasion to examine the smears of pus and was surprised to find a very unusual condition. One slide was stained by Leishman's method and one with methylene blue. The following organisms were present: (1) spirilla in very large numbers; (2) a short curved organism; (3) a diphtheroid short bacillus in masses; and (4) a long, curved, ribbon-shaped organism in small numbers.

To describe these in more detail: 1. The spirilla were very numerous and in some places matted so that as the organisms were frayed out from a common centre a "cat o' nine tails" appearance resulted. In size they varied from an average 14–18μ to extremes of 40μ and 10μ. The breadth was generally 1–2μ but certain individuals presented a thin ribbon-like form. There were two, three, or four curves in each spirillum. The continuity of some, especially the broader forms, was interrupted by a glancing spot or a definite chromatin-like body. Sometimes where many spirilla were collected several free, red (Leishman stain) round bodies were seen. I did not see any spirilla phagocytosed. 2. The short sickle-shaped body was generally about 7 or 8μ long by 2μ broad. The ends were rounded and the staining was not homogeneous. Almost invariably on careful focussing under a magnification of 1800 diameters chromatin-like particles could be made out and were sometimes visible as obvious red spore, or nuclear-like bodies. In the methylene-blue preparation some of these sickle bodies stained homogeneously, but in some evidence of division into a bacillary form was noted. 3. The diphtheroid bacillus was evidently quite independent of the other elements. In their arrangement these bacilli suggested the Klebs-Löffler bacilli in that they tended to lie in rows, squads, and palisades, but the resemblance stopped there. They were shorter and stained unevenly, so that in many cases it was just a question whether they were not diplo-bacilli. They showed marked metachromatism, or, at least, red particles, dots, and round bodies were seen lying in their protoplasm. They were nearly always aggregated into masses and were sometimes phagocytosed. 4. There were certain bodies, few in number, which looked like narrow curved ribbons. They were about as long as a spirillum but without indulations. They showed no trace of segmentation but, nevertheless, showed four or five well-marked blood-red rounded bodies lying at intervals in the pale blue protoplasm. Their size and general shape strongly suggested some relationship to the spirilla and especially to the broader forms mentioned under heading 1. They may have been spore-bearing bacilli but spores are not stained red by Leishman's stain after ten minutes' application. I do not know the relationship between metachromatism and the special phenomenon seen where nuclear matter reacts to Romanowsky's stain, but I feel sure that the appearance here noted is due to one or other of these causes.

It is interesting to note that the fusiform bacillus described and figured by Professor Vincent in the article above mentioned was not met with. The sickle-shaped body I describe could not have been identical, though it is possible it may have been an involution or degenerate form. In Dr. H. W. Bruce's article on this subject[1] I see, however, that he writes: "Shorter forms are seen (6–8 μ) occasionally curved and comma shaped. Very long badly staining bacilli are also sometimes present, and now and then a bacillus is seen which is greatly swollen in its centre, the expanded part not taking up the stain, whilst its edges are defined by a thin dark line." I think probably he is referring to the bodies which I have described under headings 2 and 4. In the descriptions of these two writers the fusiform bacillus was present in large numbers and the spirilla were looked upon as of less importance but in my case the spirilla were in enormous number and the other forms were few and far between. In my case, also, the pus was contaminated by the ordinary buccal organisms. In The Lancet of July 9th, 1904, p. 73, there is a note by my late teacher, Dr. A. E. Wright, on this subject in a short article called "Pathological Suggestions." I fully agree with him when he suggests that the fusiform bacillus is a stage in the life-history of a trypanosome. I believe that the spirillum itself, the fusiform bacillus, the sickle-shaped body, and the ribbon-like body I have described will all turn out to be different stages in the life of one parasite.

From the description of the fusiform bacillus in Professor Vincent's and in Dr. Bruce's paper it does not suggest the appearance of a true bacillus. Its length (as Dr. Wright points out) is against that; its vacuolation, which Professor Vincent lays stress on, and above all its behaviour to Romanowsky's stain, are highly suggestive of a protozoic origin. By this method chromatin in its densest form stains a brilliant blood red and so aggregations of nuclear material if young and active and the special chromatin structures in protozoa like the centrosome are always stained red. The spore bodies of protozoa, as those of bacilli, are both alike in being formed of highly concentrated nuclear material but are unlike in this respect that the bacillary spore is surrounded by a dense capsule which serves to protect it under its many vicissitudes in the ground or water but the spore body of animal parasites needs no such protection as its further stage is to be carried out in the body of another host. So the bacillary spore needs special staining methods to reveal it. If this is true, then, these red bodies in the protoplasm of the bacillus fusiformis cannot be spores of a bacillus and they are probably chromatin aggregations in the body of a trypanosome-like organism.

I have lately been carrying out some observations (as yet incomplete) on the changes undergone in trypanosomes under adverse conditions. The trypanosomes in the blood of an amphibious tortoise were watched in their course down the alimentary canal of a leech which had been allowed to suck the tortoise's blood. I found that the undulatory membrane and flagella at once disappear, that the body of the animal becomes longer, thinner, and more ribbon-shaped or else it becomes comma or crescentic shaped and seems to become quiescent and unaffected by the digestive fluids of the leech. The protoplasm becomes granular, the granules stain a blood-red by Romanowsky's method, and in the last stage I have yet seen three or four bright red spore-like bodies remain in the pale degenerate body of the trypanosome. I mention this because, comparing it with the forms seen in the pus from the case of pyorrhœa alveolaris, the resemblance is very suggestive. I regret that I was unable to make culture or inoculation experiments but the materials were not available and, moreover, until the appearance of Dr. Wright's paper the possibilities of the subject had not struck me. Dr. Wright calls attention to the occurrence of extreme anæmia with some cases of pyorrhœa alveolaris. This adds an additional interest and importance to the subject and looking further to Dr. W. Hunter's views on oral sepsis and pernicious anæmia it raises questions and possibilities which I have not the temerity to suggest.

I am, Sirs, yours faithfully,
F. Percival Mackie, F.R.C.S. Eng.,
Goona, Central India. Lieutenant, I.M.S.

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[1] The Lancet, July 16th, 1904, p. 135.

TETANUS AND CHLORAL HYDRATE.

To the Editors of The Lancet.

Sirs,—I should like to express my thanks to Dr. J. M. Fortescue-Brickdale for the information given in his kindly letter in The Lancet of May 20th concerning the results obtained by French physicians in the treatment of tetanus with large hypodermic doses of chloral hydrate. The facts there stated clearly demonstrate the danger of overdosing tetanic patients with chloral hydrate but do not, I think, prove anything further. I quite realised this danger at the time of writing the article published in The Lancet of May 6th, and it was for this reason that I suggested "the advisability of commencing the treatment of an adult case of tetanus by doses of about 30 or 40 grains of chloral hydrate and steadily increasing this to a drachm or more until the desired effect was produced, repeating the dose when the spasms recurred, and gradually reducing the quantity as the spasms became less violent in character." If this method of administering the drug were tried the danger of overdosing would be reduced to a minimum. In the cases quoted by Dr. Fortescue-Brickdale, very large doses of chloral hydrate were administered either intravenously or subcutaneously and deep anæsthesia was produced with fatal results in many cases; these cases are consequently not quite on a par with the case I published, in which the drug was administered per os and per anum and only a very slight degree of anæsthesia was produced. The proposition I am anxious to see proved or disproved is that the poisons of tetanus and chloral hydrate are antidotal. In the early days of administering mercury in the treatment of syphilis, overdoses of the drug possibly accounted for nearly as many deaths as the disease itself. To-day we are wiser; our faith in the antidotal power of mercury is, however, an established fact. If we can establish a like relation between chloral hydrate and tetanus another useful weapon will be added to our equipment.

I am, Sirs, yours faithfully,
JOHN MABERLY, M.R.C.S. Eng., L.R.C.P. Lond.
Woodstock, Cape Colony, June 12th, 1905.

PROLONGED ANÆSTHESIA BY CHLORIDE OF ETHYL IN OPERATIONS ON THE NOSE AND THROAT.

To the Editors of THE LANCET.

SIRS,—I have for some time past been working out a method of maintaining anæsthesia in short operations on the nose and throat by means of the vapour of ethyl chloride administered through a tube. By short operations I mean those lasting a little longer than two minutes which is about the limit of available anæsthesia after an ordinary dose of ethyl chloride administered in the usual way. Last winter I brought the results of my first 20 cases before the Society of Anæsthetists. I have now completed nearly 100 cases by the method which I am about to describe with almost universal success, the partial failures I have had being in subjects, not infrequently met with, who do not take ethyl chloride well in any circumstances. My experience has been that where anæsthesia is easily induced by the ordinary method it is easily maintained by means of my apparatus and *vice versâ*.

In order to have a good supply of vapour it was necessary to have a fair bulk of ethyl chloride put up in a suitable chamber, absolutely gas tight, with a suitable tap for the delivery of the vapour through a tube to the patient's mouth or nose. Mr. Paxton, of 93, Dyer's Hall-road, Leytonstone, has made me some in various patterns and sizes and assisted me with much valuable advice as to details. The one which I have finally adopted is a metallic cylinder, holding about 250 grammes, with a screw-down stopper on top which on being partially unscrewed admits the vapour to a tap on its side, whence it passes along a tube to a suitable gag; I use either a Probyn-Williams or a Wingrave with a short metal tube fixed at right angles to the upper blade. The gag must *always* be inserted before commencing this anæsthetic, otherwise there will be difficulty in opening the jaw. Having done this five cubic centimetres of ethyl chloride are administered in the usual way with the ordinary closed apparatus. I generally allow from one to two minutes for the induction getting the patient deeply under, the length of time depending very much on the age and strength of the individual. As soon as the mask is removed the operation commences and I turn on the taps and a little vapour passes down the tube. This would very soon stop owing to the rapid cooling produced by evaporation, but I have at hand a porringer of hot water in which I put the chamber from time to time causing a rapid ebullition. I economise vapour by pinching the tube during expiration with the hand that steadies the gag, and at times for several breaths the tap is turned off altogether lest the anæsthesia get too deep. I generally aim at having a slight corneal reflex, a moderate pupil, and deep regular, but not stertorous, breathing. In this way I have maintained a good anæsthesia in cases lasting from three to 20 minutes at an average expenditure of less than five cubic centimetres of ethyl chloride per minute of available anæsthesia. Except for some special reason I should not advocate the use of this method in operations lasting over ten minutes on account of the expense. In considering the advantages one has to compare with other methods. The only two I know of are gas through a tube or chloroform in a Junker. Of the former I have no practical experience but I am inclined to think that the results would be less certain. The cost would certainly be greater and the weight of cylinders to be carried about is a disadvantage. My ethyl chloride cylinder takes up but little room and when full only weighs 21½ ounces, the contents being sufficient for 50 minutes' anæsthesia or, say, ten cases of five minutes each.

The advantages of this method over chloroform are: (1) Rapidity—a short operation can be finished in less time than it takes to get the patient under chloroform; (2) safety—especially in the sitting position; (3) slighter after-effects; and (4) greater freedom for the anæsthetist to assist, no hand being required to work a bellows There are many minor details into which I might enter but I fear I have already trespassed too far on your space. I will only add one word of warning in conclusion. The ethyl chloride used in charging should be guaranteed made from pure alcohol and free from impurities, otherwise the taps would soon become corroded and ruined. I speak from experience.

I am, Sirs, yours faithfully,
G. A. H. BARTON,
Westbourne-park-road, W. Anæsthetist to Throat Hospital, &c.

LUNACY ACTS AMENDMENT BILL (LONDON) (NO. 2).

To the Editors of THE LANCET.

SIRS,—Since the writing of your very able and exhaustive leading article this Bill has been dropped. You have dealt so completely with the subject that there is very little to add.

That very good work is being done by the metropolitan infirmaries is evidenced by the fact that in 1904 out of a total of 7654 admissions of "alleged lunatics" only 3716 were sent to asylums and 3155 were discharged cured within the period of 14 days, which represents the limit of legal detention in an infirmary or workhouse, and if this period of detention could be extended for another 14 or 28 days a sensible addition would be made to the list of cures. To your formidable array of objections may I point out the hardship which would be inflicted upon the friends of the patient, caused by the necessity for their attendance at the receiving house which must in many cases be some miles from their homes and also that a check upon abuse of enormous value would be abolished. The proposal of the London County Council revolutionised the intention of all previous lunacy legislation which has hitherto regarded it as an essential point that the authority which primarily receives and certifies the cases should not be the same body which has the power of indefinite detention.

Most boards of guardians have during recent years recognised their responsibility and have at considerable expense erected efficient mental wards and are naturally very wroth that their constituents should be called upon to pay an extravagant sum for the realisation of an idea. The party whip has, however, been very vigorously cracked over this matter and many otherwise level-headed administrators have been compelled to "toe the line" sorely against their convictions. The knowledge that we have your support will materially strengthen the position of those who have consistently opposed this proposition since its inception in 1897. I inclose a copy of the report upon this matter, adopted at a recent conference of the medical officers of metropolitan infirmaries and workhouses, called specially to consider this scheme and which unanimously condemned it.

I am, Sirs, yours faithfully,
F. S. TOOGOOD, M.D. Lond.,
Honorary Secretary to the Conference of Metropolitan Poor-law Medical Officers.
Lewisham Infirmary, July 3rd, 1905.

THE RECENT OUTBREAK OF TYPHOID FEVER AT LINCOLN.

To the Editors of THE LANCET.

SIRS,—After the appearance in THE LANCET of July 1st, p. 22, of a "Note on the Recent Outbreak of Typhoid Fever at Lincoln" by Mr. E. Cecil Clements the following additional observations relating to the same outbreak may be of interest. They are based on 138 cases of typhoid fever which occurred in the practice of my friend, Dr. Andrew Burgess of Lincoln, whom I was assisting at the time. In almost every case the skin of the palms of the hands and the soles of the feet was of an intense yellow colour, deepest on the thicker parts of the skin. In some of the severer cases the colouration extended to the skin on the tops of the toes. The hands were affected first—generally at the end of the second week—and the feet soon after. The coloured epithelium next cracked and peeled off in big flakes. One girl shed an abundant crop of warts. The hands were the first to resume their normal appearance. In some cases the skin on the soles of the feet was yellow and peeling freely two months after the onset of the fever. A few patients complained of burning pains in the soles of their feet. The peculiar green stools mentioned by Professor J. Dreschfeld in Allbutt's "System of Medicine" were noticed towards the end of a relapse in two cases. Hæmaturia was noticed in two cases and nephritis with retention of urine and œdema of the face in one case. A case of the apyrexial form of typhoid fever was met with in a boy aged ten years. His temperature was normal throughout with the exception of a single rise on one occasion to 101·6° F. and his pulse was slow—from 56 to 60 per minute. All the other symptoms associated with typhoid fever were present.

Towards the end of the outbreak measles was very prevalent and three cases were seen where typhoid fever and measles were running concurrently. The first case was that of a boy, aged five years, who had a typhoid rash on Feb. 24th and a measles rash on the 26th. He also had hæmorrhage from the bowel on March 3rd and 4th. The second case was a boy, aged six years, who had a typhoid rash on March 19th and a measles rash on the 26th. The third case was a boy, aged six years, who had been troubled with a tapeworm for three and a half years. The typhoid rash appeared on Feb. 17th and on March 21st the measles rash came out. He had troublesome diarrhœa, passed blood on many occasions, and now and them parted with segments of the tapeworm. Two other children in the same house were down with measles at the same time. The symptoms of both diseases were not modified in any way in any of the cases.

I am, Sirs, yours faithfully,

J. F. HODGSON,

Assistant Medical Officer of Health, Halifax.

July 3rd, 1905.

HYDROCHLORIC ACID IN THE GASTRIC CONTENTS AND CANCER.

To the Editors of THE LANCET.

SIRS,—The paper read by Professor B. Moore at the Royal Society and published in THE LANCET of April 29th, p. 1120, on the absence or marked diminution of free hydrochloric acid in the gastric secretion in cases of cancer other than gastric seemed to offer an easy method for solving the difficulty of diagnosing between malignant and benignant new formations. I have recently had opportunity of testing the gastric contents in eight cases of cancer where implication of the stomach could be excluded. In four there was absence of free hydrochloric acid in the fluid drawn off from the stomach after a test meal. In the other four there was a very marked positive reaction. All the eight cases have been examined microscopically. I was rather disappointed at this result as I had hoped that at last an easy method for distinguishing between innocent and malignant growths had been devised. This, however, does not appear to be the case, for although the test (i.e., phloroglucin and vanillin) was applied only qualitatively, yet it is sufficiently sensitive to allow the observer to obtain a fair estimate of the quantity of free acid present. To apply it quantitatively is at present outside the region of ordinary practical clinics. All the eight patients were treated alike but the fluid drawn off was very dissimilar and the difference in quality may possibly afford a clue to the discrepancy in the results, for in those without acid it was watery and had almost no solid, while in those which gave a marked reaction it was semi-fluid and contained much solid matter.

I am, Sirs, yours faithfully.

Westminster Hospital, S.W., July 3rd, 1905. R. G. HEBB.

RUSSIA'S SECOND CONGRESS ON PSYCHIATRICS: 18 YEARS' INTERVAL.—The Second Congress of Russian Psychiatrists will be held in Kieff from Sept. 17th to 24th next. One of the psychiatric societies had expressed the opinion to the organising committee that in view of the difficult situation in which Russia finds herself just now the holding of the congress seemed inopportune. The organising committee nevertheless explained the extreme necessity and urgency, as to time, of the congress, the chief cause being "the imperative call for attention by the unfortunate psychiatric patients in the hospitals, the last congress on the subject having taken place 18 years ago. Besides which it was necessary to think of, and to consult on, those new highly complicated cases resulting from the present serious war and the tension undergone by the people in the great upturn in their social life." The report, says the *Novoe Vremya*, will be printed at the public cost.

DAVOS-PLATZ.

LAWS AND REGULATIONS IN REGARD TO TUBERCULOUS PATIENTS.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

I.

DAVOS-PLATZ is so well known as a station for the treatment of pulmonary tuberculosis that it is not necessary to attempt a general description of the place or a recapitulation of its history. Suffice it to say that Davos is a valley which, though situated at 5350 feet above the sea, is nevertheless surrounded by high mountain scenery, some of the mountains in the immediate neighbourhood reaching an altitude of more than 10,000 feet. The result of this situation is an average temperature similar to that of St. Petersburg —namely, 36·5° F. From the middle of November till the end of April the place is deeply covered with snow, but, on the other hand, there are powerful sunshine, clear, pure, strong light, reduced atmospheric pressure, no fog, few clouds, very little moisture or rain, and shelter from the colder winds. It was not, however, till 1865 that two invalids suffering from pulmonary tuberculosis ventured to pass the winter there. The result was so favourable that others followed their example and thus the sparsely inhabited mountain valley became the present fashionable winter station. The influx of visitors increased so rapidly that the simple peasants who lived in these mountains did not know what to do with all these strangers. Davos-Platz was but an official centre where the church, the municipal building or Rathhaus, the post-office, and a few houses clustered together. Most of the natives live in wooden cottages built in the midst of their fields and dotted about over the vast commune. This is one of the reasons why the statistics in regard to the immunity from infection among the natives are of but little importance. It has been said that if tuberculosis is infectious then there would be an increase in the number of cases among the native population. A considerable effort has been made to obtain statistical information on this point and such observations might be of universal interest. The statistics obtained are not, however, absolutely trustworthy. There has been no attempt to manipulate the figures. What has been done has been honestly done. But in these sparsely populated mountainous districts skilled medical attendance is not easy to obtain and sometimes the only evidence as to the cause of death was that given by friends or relatives. Nevertheless, it is fairly evident that the native population has not been infected by the advent of an enormous number of visitors. The death-rate from tuberculosis among the natives has been below 1 per 1000 per annum. On the other hand, the statistics are based on the number of inhabitants of the whole commune which includes not only Davos-Platz and Davos-Dorf but many miles of surrounding pasture land and mountain. During the 25 years 1876 to 1900 the average native population numbered 1315 and among them there were in that time 36 or 38 deaths from tuberculosis according to whether two doubtful cases are included or not. This is equal to an annual death-rate from tuberculosis of 0·91 or 0·97 per 1000. Only 4·64, or 4·94, per cent. of the total deaths were due to tuberculosis. On the other hand, another set of statistics gives the numbers showing the immense increase of population and of visitors. These amounted to 6830 in 1886, to 10,167 in 1890, and to 15,800 in 1900. In addition to this and in accordance with the census of Dec. 31st, 1900, there were in the commune of Davos 1387 burgesses—that is, peasant proprietors or natives; 3086 other Swiss inhabitants, and 3861 foreigners who had settled in the town Of these there were 266 Swiss and 2268 foreigners notified as having taken up their residence in the commune for at least three months and probably for a longer time. All who did not remain three months at Davos were counted among the 15,800 visitors.

The problem presented by Davos is that of a valley high up in the mountains with a sparse and scattered native population suddenly invaded by a large number of patients, a smaller number of pleasure-seekers, and then again a large number of hotel-keepers and their servants, of shopkeepers and their assistants. The sturdy peasants of Davos might have known what to do to resist a hostile attack from over the Austrian border which is not far away; but this fashionable invasion of friendly people willing to disburse what seemed fabulous sums of money for luxuries unknown among these hardy mountaineers, that was a contingency for which they were in no wise prepared. In vain these peasants came down from their mountains, gathered together in their antique Rathhaus and debated as to what had best be done. The facts of the case grew altogether beyond the experience of their oldest and wisest municipal councillors. So the new-comers, the strangers who had arrived to settle and to trade in the new winter station, took the matter in their own hands. In August, 1871, they constituted a committee for the embellishment of the station. In four years this developed into the Curverein which is practically the local administrative body. On the ground that this committee was organising facilities for the treatment "cure" and for the enjoyment of the visitors it levied a tax of 2½*d.* per day or £1 per annum on visitors. Then it has undertaken various public works such as the water-supply, the drainage, the building of roads, the providing of seats on mountain paths, and vast installations for the sports—the skating, the toboggan races, &c.—that attract so many people other than patients.

In all this there were not only the ordinary public health considerations that arise in all towns but the special risks resulting from the fact that the majority of people who visit Davos-Platz are suffering from tuberculosis. At first, of course, nothing was done; but as the infectious nature of tuberculosis became better known the necessity of taking measures to minimise the danger also became more and more obvious. Disinfection and the prevention of expectoration in public were the two most urgent special measures needed. Nevertheless they were opposed at first even by some of the local practitioners. Now, however, the existing new laws and regulations may be considered as quite in harmony with what is generally conceived to be desirable in such circumstances. What then has experience proved to be necessary in a great centre for the treatment of tuberculosis? This is a matter of practical importance and worth while examining in detail. Considering the large number of invalids and the importance of rest to these sufferers, it was obvious that at night there must be no noise. Therefore there is a series of by-laws against noisy games, such as skittles, *morra*, and against innkeepers or others who allow noisy assemblages or games on their premises at night. Of course, exceptions are made for certain fête days, for weddings, &c.; still, and, as a rule, not a sound is to be heard at night and this is undoubtedly a great advantage for the patients. The hawking of goods in the streets is forbidden as also are the bringing and the sale of cattle in the town, and every driver who uselessly cracks his whip is fined 4*s.* All the fines paid for breaking any of these rules go to the funds of the Curverein.

Having thus taken measures to prevent the patients being disturbed by unpleasant noises the next thing was to see that they are not inconvenienced by unwholesome odours. All cesspits or other receptacles for stagnant and foul waters are forbidden. They must be drained directly into the sewers. No deposit of refuse, such as rags, is allowed within 100 feet of a house or a public road. No accumulation of stable manure except in a closed receptacle is sanctioned within the town, nor is it allowed to beat carpets or bedding in the public streets. All private yards must be kept scrupulously clean and no one is permitted to burn refuse or any object that may cause smoke or an unpleasant odour. Coming to the question of disinfection this is a matter of such importance in all countries and on which so much doubt still prevails that it may be useful to give the actual text of the law:—

Law of July 2nd, 1886, on epidemics which
[illegible]nsidering the cantonal regulations enacted
[illegible]w; the following measures will be enforced
at the station of Davos on and after June 1st, 1901:—

Article 1.—All rooms occupied by tuberculous persons, as also all objects contained therein, such as beds, clothes, linen, bedding, &c., must be thoroughly cleaned and disinfected before they are used by other persons [illegible] rules
A [illegible] l men
dra [illegible] all be
of [illegible]
pe[illegible] hem-

Th[illegible] apparatus and the substances selves proceed to disinfect with the [illegible] under the surveillance of agents [illegible]erein.

[illegible] ust inform the Curverein within 24 hours when a patient leaves. All such rooms must be disinfected unless a medical practitioner gives a written dispensation. Such disinfection need not be applied in the case of rooms occupied by ordinary travellers and commercial travellers.

Article 4.—All patients suffering from chest disease are under the obligation of carrying on their person a pocket spittoon. They are forbidden to expectorate on the [illegible]
of hardware, of glass, or of an [illegible]
every day and should contain [illegible]

Article 5.—It is not admissible that persons suffering from chest diseases should expectorate on the causeway, the road, paths, &c.

Article 6.—Persons who are found by a medical practitioner to be suffering from a contagious disease other than tuberculosis and enumerated by the law on public health, shall be taken to the isolation house, unless the district medical officer shall declare this is not necessary.

Article 7.—The prescriptions of the Swiss Federal law of July 2nd, 1886, and the cantonal rules for the execution of this law, and the instructions given by the medical officer of the district apply to the disinfection of the rooms, beds, clothes, linen, bedding, and to the means of transport employed by the patients as enumerated in Article 6. The Curverein carries out this disinfection.

The following article (No. 8) at first stipulated that any contravention of the above might be punished by a fine not exceeding £2. But Article 5 was omitted. Now this is no longer the case and any patient who expectorates in the street is liable to be fined £2. It will be noticed that at first it was said that it was "not admissible" that a tuberculous patient should expectorate on the ground. This was the period of moral suasion; and then, as public opinion became educated to the point, the public authorities ventured by a by-law of December, 1904, to include Article 5 with the other clauses and now its infraction entails a fine of from 2 to 50 francs. On this subject I ventured to ask the director of the Curverein what he would do if he saw anyone expectorate in the street. The reply was that he would go up and ask the delinquent for his name and address. If he proved to be a stranger and expressed his ignorance of the law and his regret a few words of warning would be considered sufficient. But if it was an old offender or he refused his name and address then, the director said, he would follow him till he met a policeman and then he would give him in charge.

In regard to disinfection, the rule is that all rooms let out must bear a number. Thus visitors are registered on arrival, with the number of their rooms. When they leave the authorities are informed of the number of the room that has been vacated. By telephone with the Curverein an appointment is at once made and the hour for the disinfection is settled. At that time an inspector, who is selected by the Curverein and whose position is legally confirmed by the municipality, presents himself. This functionary alone has the right to close the room and to reopen it. No one has the right to enter the room during the process of disinfection. When but one room is disinfected the charge made by the Curverein is 7 francs (5*s.* 7*d.*) but if it is a suite of rooms then the charge is 4*s.* per room. Trioxymethylene is evaporated on a spirit lamp and the process requires about seven hours. All hotel keepers, and lodging-house keepers or the managers of sanatoriums have to notify the Curverein not only when a patient leaves but even if he merely changes from one room to another within the same hotel or building. In that case the room formerly occupied has to be disinfected. At the end of the year the cost of the numerous disinfections which have been carried out is submitted to the municipality, together with the receipts, and then the municipality decides whether the charges are sufficient or insufficient; in a word, whether any alteration in the tariff is necessary. From this it will be seen that not only is it illegal to allow a healthy person to sleep in a room which has been previously occupied by a tuberculous patient but even patients who are themselves tuberculous must not sleep in a room where the previous occupant suffered from the same disease. In every case the room must first be disinfected. So that really a traveller or visitor is safer at Davos-Platz than he would be in London, Paris, and most other towns where no such precautions are enforced. Then there are also hotels and boarding-houses at Davos-Platz and Davos-Dorf which make it a point not to accept invalids as lodgers. If any patient accidentally gains admittance he is at once sent away and his room is disinfected. Consequently a traveller would incur less risk at Davos, where the majority of the visitors are patients but where every precaution is taken, than in an ordinary town where there are comparatively few cases of tuberculosis but where no precautions whatever are enforced. It may also be noted that private slaughter-houses are abolished and that no meat can be sold at Davos which does not bear the stamp of the meat inspectors who are on duty at the public slaughter-house. The trade in milk is likewise subjected to various regulations and methods of surveillance to prevent its contamination and adulteration. Thus the authorities have taken measures to secure for the population, and especially for the patients, good wholesome food.

In visiting the sanatoriums of Nordrach, of Davos-Platz, and other places, my object was two-fold. First to accumulate evidence and information which should be of practical service in showing how popular sanatoriums should be established and managed in England; and secondly, to set forth the deficiencies of the so-called sanatoriums established by the late Mr. J. J. Jones at Sandgate and the necessity of legislative interference for their abolition. Therefore, and in regard to the latter point, as the late Mr. J. J. Jones advertised that at Sandgate the treatment given was similar to that generally practised at Davos-Platz, it is quite fair to ask whether when the late Mr. J. J. Jones was a member of the Sandgate district council he attempted to obtain the enactment of by-laws for Sandgate at all similar to those described above and applied at Davos-Platz. Was any effort made to *prevent* the cracking of whips and such noises as might disturb the patients at night? There is this similitude between Davos-Platz and Sandgate, that in both instances there are patients in the centre of the town, though at Davos-Platz all the popular sanatoriums are well away from the main road and the centre. In regard to disinfection, Mr. A. R. Bowles, surveyor and sanitary inspector of the Sandgate district, testified before the House of Lords Select Committee on the Sandgate Sanitary Powers Bill that the Jones's home, known as Grosvenor House, had been used as a convalescent home for phthisical patients and then for ordinary boarders. The local authority had not been informed of these changes nor was there anything to show that the place had been disinfected. As sanitary inspector he had never been asked to disinfect when changes were made. The medical officer of health of Sandgate, Dr. C. E. Perry, also bore witness that he had never been called upon to disinfect any of the Jones's homes. It was, however, stated that at least on one or two occasions Mr. Jones had burnt some sulphur in the rooms, notably of Ontario House. Mr. A. J. Gore, who is now in charge of these houses, declared that after the tuberculous patients had been removed from Ontario House and before ordinary convalescent patients were admitted to this home he himself saw the place thoroughly disinfected with formalin and sulphur. On the other hand, Dr. H. Scurfield, medical officer of health of Sheffield and professor of public health at the University College of Sheffield, testified that a medical man did not necessarily know how to disinfect a room. This is an obvious but an important point. It does not form part of ordinary medical education to teach a medical student how to cut long slips of paper or cotton-wool and to render a door or a window airtight, nor is a medical practitioner necessarily an adept at stopping up a chimney. He may know theoretically when it is indispensable to disinfect but the various processes of disinfection are matters of handicraft that form part of the education of an inspector of nuisances and other municipal functionaries. Therefore no disinfection can be counted as satisfactory unless, as insisted upon at Davos-Platz and many other places, it is carried on under the control of the public sanitary authority. Nothing of the sort was done at Sandgate and the contrast between Sandgate and Davos-Platz in this respect is most detrimental to the former town. Finally, it may be observed that before Sandgate can be compared with Davos-Platz a public slaughter-house must be constructed and more rigorous methods of controlling the food-supply introduced.

(To be continued.)

CHOLERA, PLAGUE, AND OTHER DISEASES IN THE NEAR EAST.

(FROM THE BRITISH DELEGATE ON THE OTTOMAN BOARD OF HEALTH.)

THE Turkish empire continues to be quite free from cholera. It is less certain whether Persia is equally so. Reports from Tehran, dated March 29th and April 5th and 12th respectively, stated that the sanitary condition of that country was satisfactory and that no case of cholera had been observed there since Feb. 26th. But the report of April 19th asserted that, in spite of official assurances, there were rumours that cholera was still prevalent at Meshed and at other places in the Khorassan province. On May 8th it was reported that sporadic cases of the disease were occurring in Tehran itself. The latest news, on the other hand, is to the general effect that the public health conditions of the country are "satisfactory", but on June 5th it was reported that some cases of "choleriform diarrhœa" had been observed at Hamadan.

Single cases of cholera are officially reported to have occurred on Russian territory at Askhabad on April 19th (May 2nd) and at Tsaritsyn on the Volga on April 21st (May 4th), and two suspicious cases were reported on May 15th from the Bogorodsk district of the Moscow government. No later news has been received and the presumption consequently is that no cases have been observed since.

The outbreak of plague at Aden has come to an end. During the week ending May 20th there were neither cases nor deaths from the disease. During the following week two cases and no deaths were reported. The last new case was observed on May 24th.

A sharp outbreak of plague has recently occurred at Bahrein, in the Persian Gulf. The date of the first case is not known but it was probably about May 10th. Up to the 20th of that month 20 deaths from the disease had been reported. Five days' quarantine was consequently imposed in Turkey upon arrivals from that island. News has since been received that the outbreak is declining. On the 19th of the same month two cases of plague were observed on a Persian Government boat, the *Persepolis*, which had arrived at Bushire from Bombay.

No further cases of cerebro-spinal fever have been reported in this city. In Russia, on the other hand, according to official news received here, this disease has been showing much activity recently. At the beginning of May some doubtful cases were reported from Rostof on Don and Kremenchug. Down to the end of April (old style) the number of reported cases in all Russia had been as follows: In January, 4; in February, 7; in March, 27; and in April, 15. Among the places in which the disease had been observed were the towns of Stavropol (in the Caucasus), Rostof on Don, Yaroslavl on the Upper Volga, and Lublin in Polish Russia, and the districts of Bendinsk in the Piotrkow government, and of Kuopio and Nyland in Finland. In addition three cases and one death were reported from Taganrog in May; five deaths also occurred in the Polish government of Radom, and (in April) two cases in the Elisavetpol government, nine in that of Kuopio, two in that of Viborg, and single cases in each of the Finnish governments of Nyland, Tavasthus, Abo, Bjorneborg, and Wasa.

Constantinople, June 29th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Medical Officers of Health and Motoring.

THE north-western branch of the Incorporated Society of Medical Officers of Health held its annual meeting at Lancaster on July 1st. A paper on the Public Health Aspect of Motoring was read by Mr. Herbert Jones who spoke approvingly of its indirect benefits, such as the great increase of housing space in large towns that would result from the removal from their centres of "all horses and carriages and carts and wagons," besides the advantage of doing away with a huge mass of offensive material. The horse must be stabled near its work but the motor might be kept ten miles away. The public health would be benefited by the cessation of "the wholesale dissemination of organic material contained in horse manure," which was shown by Professor S. Delépine to be the cause of extensive outbreaks of diarrhœa in Manchester. Mr. E. Sergeant, the medical officer to the Lancashire county council, thought the disadvantages greater than the benefits. The dust was a distinct danger and until roads were made fit for motoring, not only in regard to their surfaces but their width, he was of opinion that it was dangerous to health. Mr. J. J. Weave (Southport) said that the dust problem was largely due to the make of cars and might be left to engineers and road-makers. Dr. Meredith Young (Stockport) spoke of the great waste of water necessary to keep down dust on roads and streets and said that motors would compel engineers to consider the best way of preventing dust. Mr. J. Settle (Barrow) was not thankful for the coming of motor-cars but feared they had come to stay. Mr. A. W. Martin (Gorton) spoke of the indirect benefits that would accrue to agriculture and said that if dust were got rid of, as it would have to be, the death-rate would be lowered and a diminishing birth-rate need not be feared. The President, Dr. J. F. J. Sykes, said that motors would ultimately lead to the improvement of the roads which would be a good thing. Motors did not make dust, they only raised it. In all this discussion nothing seems to have been said of the direct danger to life caused by reckless or unskilful driving. but the newspapers bear almost daily testimony to the reality of this danger and in too many instances to cowardly attempts by the motorists to get away without caring to learn the injury that they have done. Those who often experience the sickening smell accompanying the clouds of dust raised in dry weather on country roads, clouds frequently dense enough to hide the car and its occupants in a few yards, have, no doubt, borne without taking action a nuisance which is declared by this society of health officers to be dangerous to health and therefore to life. Hence it is clearly their duty to take such action as may be necessary to make the roads and streets a little safer than they are at present from danger to life and limb and freer also from the dust dangers which they unite in condemning. But the subject bears sometimes a slightly comic aspect. A case that occurred on the same day as the meeting at Lancaster —July 1st—at Kendal shows that a medical officer of health may differ in opinion from some of his brethren and take steps, as no doubt he ought to do, to guard himself against the dangers of the road. A man was summoned for failing to stop his motor-car when requested to do so by the driver of a horse and trap. Mr. R. M. Craven stated that when driving along one of the Kendal roads he saw a motor-car approach. When within 80 yards of it, being afraid that his pony would shy, he put up his hand and also a flag as a signal for the driver to stop. "Why don't you stop?" he asked the driver, who made no reply. He admitted having written to a newspaper saying: "I am a horse-driver and enforce my rights on the highway. I have a red bunting flag and when I hear a motor-car coming I raise my hand and my flag. If the motor-car driver gives me my side of the road and slows down to six or eight miles an hour I lower my flag and allow him to come on. If he does not I keep my flag aloft and stop him dead until I drive my pony past him." The defendant in his evidence said that when he met Mr. Craven "he pulled up dead slow until he reached him." To show how our own conduct, eminently sane as we think it, may strike one looking at it from another standpoint the defendant said that when passing he remarked to his brother that "the man must be mad." He was "completely dumbfounded by the red flag," so that it is evidently a valuable weapon with which to encounter motorists. The magistrates dismissed the case, the defendant paying the costs, *22s. 6d.* It seems a little hard that motorists should almost monopolise the high roads, to the maintenance of which they contribute so little, and if the roads are to be widened and made dustless the cost should fall on those who make the change necessary and not on the long-suffering local ratepayers.

Bravery.

In THE LANCET of April 1st a brief narrative was given of the brave doings of the boys at the school for the deaf and dumb at Preston when a fire broke out. It is gratifying to learn that silver medals are to be given to two of them, Nicholas J. Dalton and John Jackson. The fire was discovered in the early morning and "the two lads climbed down a waterspout from the dormitory windows, summoned assistance, and helped to bring ladders by which their comrades escaped from the dormitories." At Preston, by the way, a lad, aged 12 years, while bathing in the Ribble recently got out of his depth and was saved from drowning by a man named Albert Edward Lowe who had previously saved eight lives.

Smoke and the Magistrates.

Some places seem to delight in the manufacture of smoke and to be as proud of it as if it were their best paying product. At Sheffield on June 22nd an Attercliffe firm answered a summons which alleged that they had disobeyed an order to abate a smoke nuisance, "but the case was not heard because the magistrates on the bench, themselves cutlery manufacturers, declined to adjudicate." The chairman, Mr. J. E. Beal, said: "You had better take it to the other court; you will not get any sympathy from me," and he declined to hear it. The summons was then taken to the other court and there, also, the chairman, Mr. G. F. Lockwood, declined to hear it. On the face of it this "passive resistance" by the magistrates does not look creditable but it may be that tenderness of conscience sometimes prevents sinners from rebuking sin.

Tests of Sobriety.

Mr. E. A. Humphreys of Northenden, surgeon to the police, recently described at the Stockport police court his test for drunkenness as applied to three men accused of being drunk on licensed premises. He made them shut their eyes and walk backwards, and he said that few men could do it when sober and if they succeeded they were certainly not drunk. They had also to write their names with a quill pen, to walk along a straight line, and to stand still with their heels together. He accepted the definition in Murray's dictionary that a drunken man was one who had ". taken intoxicating liquor to an extent affecting steady self-control" and described the symptoms as "staggering when walking, incoherent speaking, and lack of reasoning power." There is no doubt that the tests named are applicable to those in the condition described, but they do not cover those cases of more complete narcosis where the diagnosis between drunkenness and brain mischief is not self-evident.

July 4th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

The Somerset County Council and a County Medical Officer of Health.

THE question of the appointment of a county medical officer of health of Somerset has been often discussed at the meetings of the Somerset county council. At a meeting held at Wells three months ago the sanitary committee obtained the sanction of the council to a proposal to appoint a medical officer of health at a yearly salary of £150, travelling and other expenses being estimated at another £100. Applications for the appointment were duly advertised for and 30 gentlemen applied for the post. Four candidates were selected and attended the meeting of the county council held at Taunton on June 27th. Unfortunately for the candidates a member moved that the resolution passed at the previous meeting providing for the appointment of a county medical officer of health should be rescinded and this was carried by a majority of one. The chairman expressed regret that the candidates had been asked to attend unnecessarily and assured them that their travelling expenses would be paid. Following upon the decision the chairman of the sanitary committee resigned his connexion with the committee and suggested as his successor the mover of the rescission of the previous resolution.

The Water-supply of Taunton.

A new storage reservoir, capable of holding 120,000,000 gallons, in connexion with the Taunton water-supply was formally opened by the Mayor on June 30th. The reservoir is situated at Luxhay, on the Blackdown Hills, eight miles from Taunton. It will have a water area of 17 acres when filled, with a depth of water of 57 feet. The cost of the undertaking has been about £26,000.

The Royal Hamadryad Seamen's Hospital, Cardiff.

The old *Hamadryad* ship has done good service during the past 40 years as a hospital for sick and injured sailors who land at the Port of Cardiff but it has been realised for some years that a building with more modern requirements ought to be provided and in 1897 it was decided to commemorate the diamond jubilee of the late Queen Victoria by establishing such an institution. The late Marquis of Bute associated himself with the project in the heartiest manner. He gave the principal portion of the site and at once subscribed £10,000 towards the building fund. After his death, which occurred shortly afterwards, it was found that his trustees were empowered to give further sums up to a total of £30,000 if they were required, so that it has been possible to provide a building well equipped in every respect. There are three main wards each containing 16 beds, and smaller wards bringing up the total accommodation in the hospital to 60 beds.

The walls are of impervious parian cement with rounded corners and the floors are of terrazzo. The architect, Mr. E. W. M. Corbett, took some pains to ascertain from the principal officers of existing hospitals which was the best material of which to form the ward floors and finally decided in favour of terrazzo. The ventilation of the wards is provided for by the so-called "natural method" by means of floor level inlets and outlets in the flues. The incoming air can be warmed if necessary by radiators. The warming is by low-pressure hot-water pipes. The entire building is lighted by electricity. Adjoining the hospital proper is a detached residence for the medical superintendent. Three of the beds have been endowed but for the maintenance of the hospital the managers rely principally upon a voluntary tax which the shipowners levy upon themselves. The foundation-stone of the institution was laid in 1902 by the Marquis of Bute when he came of age and was formally opened by him on June 30th last.

The West Cornwall Infirmary, Penzance.

The new West Cornwall Dispensary and Infirmary at Penzance is now nearly completed and it is hoped that it will be ready for the reception of patients in about three months. The cost of the building will be about £8000 and of this sum members of the Bolitho family have contributed £4500. The hospital comprises a central administrative block of two storeys, having a ward on each side, with various private wards, &c., attached. From the south wing of the building the new public dispensary will be built. A well-fitted operating theatre and a laundry, &c., have been added.

The Medical [illegible] *e Gloucestershire* [illegible] *trict.*

At the meeting of the Chipping Sodbury rural district council held on June 27th the resolution passed at the recent conference of representatives of the urban and rural districts comprised in the Gloucestershire combined sanitary districts urging the Chipping Sodbury rural council to reconsider the matter of the appointment of a medical officer of health and not to withdraw from the combination was brought forward. After a long discussion the council decided by a majority of two votes not to reconsider the matter. In view of this very small majority it ought not to be difficult for the Local Government Board to act upon the representation made by the 11 councils for whom Dr. Bond still acts and by exercising the powers given under Section 286 of the Public Health Act of 1875 to form a compulsory combination.

Cardiff College New Buildings.

An important step has been taken towards the removal of the reproach which has attached to the Cardiff constituent college of the University of Wales in respect of the temporary and other erections which have done duty as college buildings during the past 20 years. On June 29th His Royal Highness the Prince of Wales, the Chancellor of the University, laid the foundation stone of the new buildings which are to be erected in Cathays Park, the large open space right in the centre of Cardiff, upon which it is intended to group all the most important public buildings of the town, including the town-hall and law courts, now nearly completed. A complete scheme has been drawn up in which the college buildings are arranged around a large court having an area of 52,000 square feet. For the present the administrative and arts block together with the library, the gift of the Drapers' Company, will be erected. The medical, anatomical, public health, metallurgical, engineering, and other departments will only be proceeded with as funds are forthcoming and for the same reason the erection of the great central hall will also be delayed.

Bristol Royal Infirmary.

A large carnival has just been held in the Zoological Gardens, Bristol, in aid of the Bristol Royal Infirmary. Sir George White, Bart., the president of the infirmary, has been the leading spirit in the inception and execution of this idea for helping the infirmary and was supported by a large deeply of willing helpers. The Duchess of Beaufort became number interested in the scheme and induced a large number of ladies to take an active part in carrying it out and herself declared the carnival open. The presidents of the various medical charities in the city attended as did many of the workers for those institutions, and altogether Bristol has thoroughly given itself over to the spirit of festivity with a laudable object.

July 4th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Quater-Centenary of the Royal College of Surgeons of Edinburgh.

AT the quater-centenary celebrations of the Royal College of Surgeons of Edinburgh the following will be admitted honorary Fellows of the College:—The Director-General of the Royal Navy Medical Service; the Director-General of the Army Medical Service; the Director-General of the Indian Medical Service; the President of the Royal College of Surgeons of England; the President of the Royal College of Surgeons in Ireland; the President of the Faculty of Physicians and Surgeons of Glasgow; the President of the Royal College of Physicians of Edinburgh; the Right Hon. Lord Lister; Professor Lucas-Championnière, Paris; Professor Paul Segond, Paris; Professor Guyon, Paris; Professor Francesco Durante, professor of clinical surgery, University of Rome; Professor Vincenz Czerny, professor of surgery, Heidelberg; Professor Ernst von Bergmann, University of Berlin; Professor König, professor of surgery, Berlin; Professor Ernst Fuchs, professor of ophthalmology, University of Vienna; Professor Krönlein, professor of surgery, Zürich; Professor Carl Gustaf Lennander, professor of surgery, Upsala; Professor Saxtorph, professor of surgery, Copenhagen; Professor Halsted, professor of surgery, Johns Hopkins Hospital, Baltimore, U.S.A.; Professor William W. Keen, M.D. (hon.), professor of surgery, Jefferson Medical College, Philadelphia, U.S.A.; Professor J. Collins Warren, M.D., professor of surgery, Harvard Medical School, Boston, U.S.A.; Dr. Charles M'Burney, New York; Dr. W. J. Mayo, Rochester, Minnesota, U.S.A.; Professor Shepherd, professor of surgery, M'Gill College, Montreal, Canada; Professor Irving Cameron, professor of surgery, Toronto, Canada; Sir T. N. Fitzgerald, Melbourne, Australia; Dr. MacCormick, Sydney, Australia; Baron Yasuzumi Saneyoshi, director-general, I.J. Navy, Bureau of Medical Affairs, Tokio, Japan; Professor Anton Freiherr von Eiselsberg, professor of surgery, Vienna; Professor Poncet, professor of surgery, Lyons; Professor Terrier, Hôpital de la Pitié, Paris; Professor Subbotin, St. Petersburg; Professor Bier, Bonn; and Professor Bruno Krogius, Finland.

Medical Defence in Scotland.

In THE LANCET of Oct. 29th, 1904, p. 1239, was given an outline of an action which Dr. John Lithgow of Cleland in Lanarkshire had brought against Messrs. Thomas Gibb and Sons, Limited, trading as quarrymen. They had given to Dr. Lithgow notice summarily to terminate his appointment and had withheld the fees subsequently payable. Dr. Lithgow then brought an action on a part of his case; it was conducted for him by the Medical Defence Union and was decided in his favour. Other litigation followed, also conducted on Dr. Lithgow's side by the Union, and on June 23rd in the Sheriff's Court, Glasgow, Sheriff Boyd supported Dr. Lithgow's claim by ordering Messrs. Gibb and Sons to produce within ten days a full account of the sums retained by them from the wages of their workmen at Auchinlee Quarry, Cleland, in name of medical fees during the period from April 1st, 1903, to Feb. 11th, 1905.

St. Andrew's Ambulance Association.

The council of the St. Andrew's Ambulance Association has just issued its twenty-second annual report. During the past year 6267 calls have been made on the wagons of the association and the total number of patients conveyed since the formation of the association is now 70.629. In Glasgow alone the number of calls has been 3822. This represents an average of 10·47 daily. A brief analysis of these may be of interest. Out of the total of 3822 calls, 2474 were to accidents and 1348 were to cases of illness. In 151 cases the wagons were not required on arrival. Of the 2474 calls to accidents, 808 were from police offices, houses, and stairs; 782 were street accidents; 361 were from public works; 218 were from docks and wharves; and 154 from railways and stations. 2035 cases were taken to the Royal Infirmary, 833 to the Western Infirmary, 227 to the Victoria Infirmary, and 128 to the Maternity Hospital, the remainder being taken to their homes or to other institutions. The council draws the attention of the public to the fact that in cases of accident the ambulance wagons can be called for by any person by day or night free of all cost and responsibility. On receipt of an alarm, sent by messenger, telegraph, or telephone, a wagon will be despatched at once to the scene of the accident, and should such accident happen in any of the principal centres of the association the wagon will be under the charge of a trained attendant who, in the absence of a medical man, will temporarily dress the injuries and accompany the injured person in the wagon to his own home or to the nearest infirmary. As regards instruction in ambulance work the association has conducted and examined 379 classes in first aid to the injured " and 17 in home nursing and hygiene. The arrangement made with the Scottish Education Department for utilising the machinery of the Evening Continuation Class Code for spreading the knowledge of ambulance work has been very successful, a large number of school board classes having been conducted during the year. During the past year there were issued 4412 first-aid certificates, 330 nursing certificates, and 95 re-examination vouchers, making a total of 4837. In addition to these 1724 medallions were awarded to certificated pupils who, after attending a second course of lectures, passed an examination of a higher standard in first aid. Sanction has been given during the year for the issue of a medallion for home nursing and hygiene, and it is hoped that this will lead many to perfect themselves in these important subjects. Classes in connexion with the police forces in the counties and burghs continue to be formed with satisfactory results. The value to the public of the efficient training of the police in first aid cannot be over-estimated and the council is taking steps to insure that the new badge, bearing the name of the association, shall only be worn by certificate-holders who keep themselves efficient in ambulance work. In view of continued efficiency the council strongly recommends the formation of sections of the St. Andrew's Ambulance Corps among the trained men of the police, as an annual re-examination and inspection under the auspices of the association could then be held. In moving the adoption of the report, the Marquis of Breadalbane, who is President, remarked that the two points which struck most people about it were the enormous amount of work done during the year and the smallness of the income of the association. It was satisfactory to note, however, that the expenditure was within the income, but only by the sum of £10 4*s.* 11*d.* It was to be hoped that the public would come forward and more generously support the association as its income was entirely made up by voluntary subscriptions and its existence and public benefit depended very largely upon the amount received.

To Help the Infirmaries.

The second annual fancy dress parade organised by the cyclists of Glasgow in aid of the funds of the Royal, Western, and Victoria Infirmaries was held last Saturday. The weather was all that could be desired and the procession aroused considerable interest, the net amount collected being upwards of £300.

Death of Dr. Frank Hay Cantlie.

The death occurred on June 16th of Dr. Frank Hay Cantlie, youngest son of the late Mr. William Cantlie of Keithmore, Dufftown, and brother of Mr. James Cantlie, F.R.C.S. Eng. Dr. Cantlie, who was on his way out to China, died on board the P. and O. steamer *Formosa*. Dr. Cantlie graduated M.B. at Aberdeen in 1897 and thereafter proceeded to China. He secured the appointment of medical officer of the port of Swatow and held several important posts there, as well as having a considerable practice. Dr. Cantlie's health broke down and he returned to this country. He was for some time house surgeon of Gray's Hospital, Elgin, and later he took up his residence at Strathmore, Keith, and started practice in that town, one of his official posts being that of medical officer to the local lodge of Free Gardeners. Dr. Cantlie then removed to London, having been appointed house surgeon in the Westminster Ophthalmic Hospital. He was on his way back to China when his death occurred.

Kingseat Asylum, Aberdeen.

At a meeting of the lunacy committee of the Aberdeen City district lunacy board on June 27th Mr. John M'Gregor, convener, presiding, Dr. C. Angus, superintendent of Kingseat Lunatic Asylum, reported that the estimate of the sum required for the maintenance of the asylum for next year, including wages, clothing, lighting, food, &c., was £10,807 0*s.* 5*d.* To that sum would have to be added any deficit that might arise on the maintenance account of last year. Dr. Angus estimated that there will be about 390 patients in the asylum during the year.

Royal Army Medical Corps (Volunteers).

The annual inspection of the Aberdeen companies took place in the grounds of the Grammar School on July 1st. There was a full muster of all ranks. The inspecting officer was Colonel Hughes, principal medical officer of the North British District. Major Riddell was in command of the corps and the other officers on parade were Captains Mackintosh, Kelly, Ogston, and Fraser, Lieutenants Rorie, Mitchell, Wallace Milne, Noble, and Smart, Lieutenant and Quartermasters Innes and Cromar, and Chaplain Rev. James Smith. The men fell in at 3.15 P.M. and the inspection took place at 4 o'clock. Colonel Hughes, who arrived in his motor-car, was received with the general salute. The inspecting officer at once proceeded to make a very minute inspection of the men's uniforms and equipment. He also examined every man's sword. After inspecting No. 1 and No. 2 Companies he proceeded to inspect the Gordon Bearer Company, the transport section, and the hospital section. The corps was then formed up and marched past the saluting base. The men were then inspected in stretcher drill and first aid to the wounded. The sergeants of the various companies were also called out and had to drill their companies individually. The inspection, which lasted for over two hours, concluded with an exhibition of dressing the injuries of those who had been wounded in battle, the collecting of the wounded in the field, and transporting them to hospital, which had been constructed on the field. A short time before the inspection concluded rain began to fall heavily. The inspection was the most thorough one that the medical corps has ever undergone.

July 4th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Medical Examination of Trinity College.

THE Roman Catholic Archbishop of Dublin, in a speech delivered on July 2nd, made some very strong criticisms of the method by which the medical examinations of Trinity College have been recently conducted, referring especially to the action of the General Medical Council in their regard. The Provost, Dr. A. Traill, has addressed a letter to the morning papers of July 4th, traversing the charges and concluding as follows :—

> So far from the medical school of Trinity College being a "close-borough" there are at present nine external examiners and 14 University examiners, including the two Regius professors, of whom Dr. Little does not teach and Sir Charles Ball gives clinical teaching only. I have always found the Archbishop so fair, in my experience of him, in educational matters, that I am sure that if he had been aware of the above facts, he would have adhered to his first thought that "it would be much more pleasant if they were allowed to discuss the university question without invidious reference to Trinity College."

Royal College of Physicians of Ireland.

In the list of birthday honours recently conferred by the King the name of Dr. William J. Smyly, President of the Royal College of Physicians of Ireland, appears as a recipient of the honour of knighthood.

Dr. Robert Morton of Nenagh.

The many friends and patients of Dr. Robert Morton of Nenagh have recently presented him with an address and a testimonial in recognition of his long and faithful services to the district in which he has lived for so long. Dr. Morton was formerly well known in Dublin as one of the examiners in general education to the Royal College of Surgeons in Ireland. The testimonial included a cheque for £400.

The Salaries of Dispensary Medical Officers.

At the weekly meeting of the Coleraine union guardians held on July 1st it was decided that the salary of each of the dispensary medical officers should be £100, rising by increments of £10 to £150; that the salary of the workhouse medical officer should begin at £80, the maximum being £130; and that, in the event of the retirement of the workhouse medical officer, the post should be amalgamated with that of the Coleraine dispensary, the officer of which shall have a salary commencing at £130 and rising to £180.

Ulster Medical Society.

The annual meeting of the Ulster Medical Society was held in the Medical Institute, Belfast, on June 29th. From the reports presented it would appear that there is financially a balance in hand of £155 18*s.* 6*d.* There are 184 members.

The following officers were elected for the ensuing session: President: Dr. W. Calwell. Vice-Presidents: Dr. J. C. Martin (Portrush) and Dr. J. R. Davison. Treasurer: Dr. V. G. L. Fielden. Secretary: Dr. Thomas Houston. Librarian: Dr. W. L. Storey. Editorial secretary: Dr. H. Stevenson. Members of council: Dr. W. B. McQuitty, Dr. J. S. Morrow, Dr. D. J. McKinney, Mr. R. Hall, Dr. R. J. M'Cullough, and Dr. David P. Gaussen. The above with the permanent trustees (who are members of council)—Dr. J. Nelson, Dr. J. Campbell, Dr. J. A. Lindsay, Dr. A. Dempsey, Dr. John McCaw, and Mr. A. B. Mitchell—constitute the office-bearers for the ensuing session. A motion was carried that the secretary should send a vote of condolence to the friends of the late Dr. G. F. Wales, a former president of the society. It was also announced that Sir Otto Jaaffe is presenting to the society a copy of an oil portrait of Jenner which is in the National Portrait Gallery.

The Foreshore of Belfast Lough.

A meeting of property owners on the western side of the beginning of Belfast Lough was held on June 30th to protest against the continued pollution of the foreshore by the discharges from the sewage outfall works. At present about four acres are used for bacteria beds and cesspools at the outfall works of the city sewage. The corporation is now inclosing from theároblands adjoining a further space estimated at 70 acres. It is intended to cover this ground with additional bacteria beds, and it is against the odours emanating from the inclosed slobland and the bacteria beds that the ratepayers in the district are protesting.

The Health of Belfast.

At the monthly meeting of the corporation of Belfast, held on July 3rd, it was reported that between May 21st and June 11th 204 cases of zymotic disease—viz., 69 of simple continued fever, 62 of typhoid fever, 37 of scarlet fever, 27 of erysipelas, and 9 of diphtheria—had been notified. The annual death-rate was 18·5 per 1000. Scarlet fever is very mild and has been attended with a very slight mortality (only one death being recorded in four weeks); the deaths from measles still keep numerous and the epidemic is most prevalent in the east part of the city. Another case of small-pox has occurred but the source of infection from which the disease may have been contracted remains, in spite of great inquiry, a mystery. In reference to the offensive emanations from the foreshore the chairman of the public health committee said that there was ground for complaint. He hoped when the reclamation bank was completed to remedy this, and in the meantime the Antrim foreshore as far as the city boundary would be cleansed by the public health committee.

July 4th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

On Prolonged Intubation.

AT the meeting of the Pediatric Society held on June 20th M. Deguy and M. Le Play gave an account of various cases of intubation where the tube had been left in during a long time, despite a certain amount of ulceration of the larynx. In one case intubation had been performed 11 times and the tube was left in for a period altogether of 20 days. The only alternative to this procedure would have been tracheotomy. Prolonged intubation has the advantage of avoiding the risks of tracheotomy in children together with its tedious sequelæ of the healing of the wound in the trachea. M. Sevestre said that in his practice he was accustomed to perform tracheotomy when obstructions still existed after the third or at the longest the fourth intubation. For his own part he considered that prolonged intubation had many disadvantages.

The Treatment of Club-foot.

At the meeting of the Paris Hospitals Resident Medical Officers' Society held on June 22nd two interesting papers on the subject of club-foot were read. The first dealt with a case under the care of M. Péraire and was that of a youth, aged 16 years, who had suffered from irreducible talipes equino-varus. M. Péraire treated him by lengthening and suturing the tendo Achillis and by a muscular tendinous graft of the tibialis anticus with the extensor proprius hallucis and the extensor communis digitorum. The result of this was that the patient walked well and without fatigue. More than that he could wear any kind of boot and had not to wear any apparatus. The other cases referred to had been under the care of M. Monnier. They were two patients suffering from congenital equino-varus. One of them, aged five years, suffered from double talipes and had been operated on after the Phelps-Kirmisson method with a good result. The other patient, aged seven years, had right talipes equino-varus. In this child the Phelps-Kirmisson operation did not sufficiently correct the deformity so M. Monnier took out an osseous wedge, with its base towards the upper external side, at the expense of the os calcis—a procedure which, together with tenotomy of the tendo Achillis, gave an almost perfect result. This operation was practically that of Phelps-Félizet, modified owing to the youthful age of the patient by taking the osseous wedge from the os calcis and not from the cuboid.

The Physiological and Therapeutic Effects of Neuronal.

M. Marie, M. Pelletier, and M. Viollet communicated a paper to the Therapeutical Society on June 14th concerning their researches upon neuronal or bromdiethylacetamide. In toxic doses this drug paralyses successively both the unstriped and the striped muscles, especially those in the coats of the arteries. In medicinal doses—that is to say, in doses of one gramme—it is a very useful hypnotic in cases of simple insomnia and in states of mental confusion or of subacute mania. Neuronal has no cumulative effect even when it is given for many days. The dose does not require increasing and when the drug is left off no trouble apparently arises.

A Hospitals Clothing Association.

There has just been started in Paris a Hospitals Clothing Association. As its title suggests the object of the society is to distribute clothing to patients who go out of the hospitals and have to look for work. The society appeals to its supporters for articles of clothing, either new or previously used, of any kind, and for money with which it may buy such articles.

Bread as a Source of Tuberculosis.

At a recent meeting of the International Tuberculosis Society Dr. Georges Petit showed that bread is capable of being an important factor in the propagation of tuberculosis. When the various processes through which flour passes on its way to become bread are considered it is easy to understand that the successive manipulations which the dough undergoes can easily favour the introduction of the germs of tuberculosis. It is above all during the kneading process that the danger is most patent. The workman, who is called *geindre*, heaves up a large lump of dough and lets it fall, grunting as he does so. This heaving up and throwing down again of the dough are necessary to introduce air into it. When it is considered that bakers' labourers are affected with tuberculosis to the proportion of some 70 per cent. it is easy to see what facilities there are for the entrance of the tubercle bacillus into the dough. Moreover, when the bread is baked it does not attain a temperature of over 100° C. in the middle of the loaf and the slight portion of time which elapses between the baking of the bread and that of its consumption is favourable to the dissemination of the bacillus of tuberculosis. Dr. Petit said that these facts were confirmed by the experiments of Galtier and of Macé as well as by his own. The question is so important from an alimentary point of view that it would seem well to replace hand kneading by machinery.

July 4th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

A Hospital Fund in Vienna.

SEVERAL benevolent institutions have made an effort to introduce here the English system of collections in the streets for charitable institutions. Most of these institutions are kept up by the Government, but as the funds are scanty an appeal was made on behalf of sick children. The novel idea has not been a full success as yet, since the collection was combined with a fête which required a good deal of the income to cover its own expenses. Anyhow, £4000 are now available from this source and will be divided amongst two children's hospitals and several kindergärten. The new infants' milk hall, which does so much charitable work amongst the most needy and the weakest infants, will receive fully one-third of the sum to enable it to establish branch halls in some outlying district. It is proposed to repeat the appeal on a larger and more efficient scale and to use only those methods which give such good results in London. The population need only be brought to understand better than they do at present hospitals and their absolute necessity for the public welfare.

Post-graduate Lectures at the University of Vienna.

During the months of July, August, and the first half of September post-graduate lectures and courses will be held by a number of *docenten* and assistants of the clinics. As a rule the courses last for four weeks. Their object is to inform the practitioner of the progress of medicine, to introduce him to the latest methods of investigation and diagnostic technique, and to rehearse, in short, modern ways of scientific research and treatment. The fee is nearly uniform, £4 4*s*. for each course, and they offer an excellent means of practitioners keeping themselves up to date. Surgery and medicine, bacteriology and physiological chemistry will be the chief subjects of the lectures, whilst special surgery, gynæcology, and morbid anatomy will only be lectured upon if a sufficient number of gentlemen (at least four) make application.

A New Midwives Act.

Dr. Cantor has worked out the regulations for a new Midwives Act which it is proposed to bring before Parliament in its next session. The system in force hitherto is quite insufficient. The women have little education, except in the towns, and their scientific knowledge is very slight. Only a few are appointed or paid by the local authorities and the pay itself is ridiculously low. Thus they are forced to work otherwise for their living and they look upon midwifery only as their secondary occupation. An amelioration of the present state of things is not difficult. There are sufficient lying-in hospitals and obstetric wards and plenty of suitable women would apply for scholarships and instruction if their future were made safe by adequate pay. Therefore Dr. Cantor proposes that there should be created appointments for midwives, each worth from £20 to £30 a year, and that a tariff should be formed for their professional work below which tariff no midwife would be likely to go to a patient. The instruction would be compulsory, lasting one year, and an examination would have to be passed at the end of the term of instruction. A certain amount of elementary knowledge would be the *conditio sine quâ non* for entering the midwives' school. The whole country except the towns would be allotted into districts and each district would be given to not more than three midwives. They would be obliged to call in a duly qualified medical man in every abnormal case, also in cases of multiple gestation (twins, monsters), and would not be allowed to undertake any surgical or medical treatment of mother or child. And, finally, all midwives would be bound to prove their learning by obtaining a sort of diploma, without which they could not be registered.

The New Dean of the Medical Faculty.

Professor Emil Zuckerkandl, the well-known anatomist, has been elected dean of the medical faculty for the year 1905–06. It is the second time that he has been called to this coveted post of honour. Whilst in office five years ago he gained the love of the students and the esteem of his colleagues to such a degree that he has been elected unanimously for a second time within ten years.

June 29th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Government Control of Vaccine Virus.

NEARLY two years ago Congress passed a law to regulate the sale of viruses, serums, toxins, and analogous products and to regulate interstate traffic in such articles. Previously anyone could make a product, label it vaccine virus, and place it on the market regardless of the impurities which it contained. In accordance with the law the officers of the Public Health Service have made an inspection of each establishment manufacturing vaccine virus in the United States and the result was that a number were found to be using old and obsolete methods, quite regardless of sanitary rules. These were required to conform to the new rules or to close their works and in several instances the latter alternative was adopted. At present there are eight producers of vaccine in this country licensed to engage in the manufacture and interstate sale of this article. These are under close supervision and their products are inspected monthly by the experts at the hygienic laboratory of the Government. The inspector is accompanied by experts and a rigid examination is made of all portions of the establishment, stables, barns, warehouses, records and animals, water-supply, disposal of refuse, and the screening of animals from insects. The samples used for testing the virus are purchased in the open market monthly and the tests are as to purity and potency. The results of the enforcement of the law for 18 months are most gratifying; the defective establishments have been eliminated and those licensed are maintaining a very high standard of excellence in all their operations.

A New School of "Medical" Practitioners.

A Bill passed the Minnesota legislature authorising a class of persons to practise "chiropractic medicine." The Governor of the State vetoed the Bill, stating that "chiropractic has not yet become a science or even a school, and at best but an untried experiment, which has produced no lasting or definite results. Among the applicants for position on this proposed board are insurance agents and men in other walks of life with absolutely no medical training whatever. The health of the public is the first essential and should be safe-guarded by every possible legal requirement, and if chiropractic must be recognised at all, those practising this so-called art should certainly be required to pass examination in the essential branches by due and regular examination before the State Medical Board, which represents the best thought and is the recognised and established standard which has been developed from the experience of the ages."

Official Report on Acetanilid Mixtures.

The first report of the Council of Pharmacy and Chemistry of the American Medical Association is on the acetanilid preparations and the results will prove very instructive to the medical profession. Specimens of the articles were bought in different cities in the open market and in original sealed packages. Each article was examined by at least two chemists. While some of the preparations are represented as being chemical compounds, the specimens examined were all found to be mixtures, the principal ingredient being acetanilid. Large quantities of these mixtures are popular remedies for headache and are freely sold to the public. The following examples are given:—Ammonol contained the following ingredients, approximately, in the proportions given: acetanilid 50, sodium bicarb. 25, and ammonium carb. 20; antikamnia: acetanilid 68, caffeine 5, citric acid 5, and sodium bicarb. 20; Koehler's headache powders: acetanilid 76 and caffeine 22; phenalgin: acetanilid 57, sodium bicarb. 29, and ammonium carb. 10.

Governmental and Private Responsibility in the Prevention of Tuberculosis.

At the recent meeting of the National Association for the Study and Prevention of Tuberculosis, the following conclusions were adopted:—"We emphasise publicly and primarily the duty of governments, especially State and municipal, in the more general founding and maintenance of sanatoria and encourage the philanthropic opportunity of private individuals to the same end; we emphasise the educational, disciplinary, and hygienic value of these sanatoria and special hospitals, not only to the segregated, instructed, and aided patients themselves, but to the general practitioner and to those patients for whom institutional treatment is not possible."

A Stringent Sanitary Law.

The legislature of the State of California has passed a law making it a misdemeanour to own, to lease, to let, or to hire any room for a lodging or sleeping apartment that contains less than 500 cubic feet of air space "in the clear" for each occupant; it is also a misdemeanour to be an occupant of such apartment. If this law is strictly enforced vast numbers of the people of that State will soon face heavy fines or a prison.

June 28th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Medical Research in India.

A RESOLUTION has been issued by the Government of India in connexion with medical research. It implies a provision for more adequate means for the scientific study of the etiology and nature of disease and admits that the former financial difficulties have disappeared. The successful administration of the Pasteur Institute at Kasauli has apparently led the Government to see at last that it only requires the necessary opportunities for the existing staff of scientific workers in India to show that they are worthy of the problems that confront them. The resolution goes so far as to say that when the scheme is developed it should no longer be necessary for officers to leave India to study the bacteriology and parasitology of tropical diseases. This is an admission of past neglect, because India should even now attract officers to it for the study of such diseases. A central research institute will be established at Kasauli and a laboratory for scientific, medical, and sanitary work at the headquarters of each provincial government. The function of the central laboratory will be original research, the preparation of curative sera, and the training of scientific workers. The provincial laboratories will apparently be for the provision of expert assistance for the provincial medical and sanitary officers, with some original research work so far as opportunities will allow. At Guindy in Madras at the King Institute there will be general research work and probably the manufacture of some curative sera. At Bombay the plague research laboratory will become the provincial laboratory and some research work will be carried on in addition to the manufacture of the prophylactic. Bengal is merely referred to as having a laboratory attached to the Medical College and at Agra Hankin's laboratory is mentioned. There is to be a similar laboratory at Rangoon where medico-legal work is to be separately done. The first director of the central research institute is to be Colonel D. Semple, R.A.M.C. (retired). It will be noted that in the resolution there is no detailed reference to the opportunities for the scientific study of tropical diseases and no school of tropical medicine is even hinted at. There is no reference to a sanitary service for India or to any scheme for sanitary investigations. There is no indication that an adequate number of original workers will be appointed free from the embarrassments of other posts. The resolution itself is couched in such general terms that it may imply either that a great deal is to be done or that the existing institutions may merely carry out the apparently excellent programme. It is desirable to know something more definite and the new Sanitary Commissioner with the Government of India, on whom the responsibility for this research work will fall, should show that some well-organised and extensive research is going to be instituted.

The Decline of the Plague Mortality.

The mortality from plague continues to fall as expected. There were only about 15,000 deaths during the past week, whereas a month ago the deaths were over 50,000 in the week. The Punjab returns but 9000 deaths, as compared with 16,000 during the previous seven days; the United Provinces, 1700 deaths, as compared with nearly 3000; Rajputana, 2400; Bengal, 695; Bombay districts, 707; Madras Presidency, 14; and Burma, 85.

June 17th.

NEW ZEALAND.

(FROM OUR OWN CORRESPONDENT.)

The New Midwives Act.

THE Government here, it would seem, is losing little time in getting to work to carry out the provisions of the Midwives Act which was passed in the closing hours of last session. The Act provides for the registration of midwives and the setting up of maternity homes for the teaching of midwives. Section 4 sets out that:—

> Every woman is entitled to be registered who satisfies the registrar that (*a*) at the commencement of this Act she had been for at least three years in *bonâ fide* practice as a midwife and that she bears a good character, provided that application for registration be made to the registrar on or before the first day of January, 1906; or (*b*) she holds a certificate in midwifery from any recognised training school in midwifery, or from the Obstetrical Society in London, or such other certificate as may be approved by the registrar; or (*c*) holds a certificate under this Act.

Section 5 says that:—

> There shall be established in New Zealand one or more State maternity hospitals where pupil nurses can, on payment of the prescribed fee, be carefully instructed in all the duties required for the welfare of mother and infant during and immediately after childbirth.

Every pupil must satisfy the examiners as to her proficiency and that she has attended lectures at a State maternity hospital or other institution recognised by the registrar as affording to its nurses sufficient training in midwifery for a period of six months in the case of a nurse registered under "The Nurses Registration Act, 1901," or of 12 months in any other case, and has attended the prescribed number of cases of labour. The Act contains machinery whereby a person may be removed from the register or suspended, when suspension appears necessary in order to prevent the spread of infection or on account of malpraxis. After Jan. 1st, 1907:—

> Every woman is liable to a fine not exceeding £20 who, not being registered under this Act, practises as a midwife, or takes or uses the name or title of a midwife (either alone or in combination with any other word or words), or any name, title, addition, or description implying that she is registered under this Act or is qualified to practise or is recognised by law as a midwife. Provided that nothing herein shall apply to any legally qualified medical practitioner, or to any woman rendering assistance in a case of emergency.

A large and commodious private hospital has been purchased in Wellington for the purpose of carrying out the provisions of the Act and a matron and an assistant matron have been appointed. The homes have been named "St. Helens Hospitals." There has undoubtedly been a scarcity of well-trained midwives in the colony and hitherto nurses desirous of taking up maternity work had either to proceed to England or to Sydney.

The Treatment of Pulmonary Consumption.

In the course of some 10 or 14 days the public of Wellington and suburbs subscribed over £2000 for the purpose of erecting annexes to the hospitals in that city and at Otaki for the treatment of pulmonary consumption. The Government will add 24*s.* to every £1 thus raised by private subscription, so that a sum of over £4400 is now available for the starting of this much-needed work. The sum may seem small to those who dwell in large places but it has to be remembered that the capital city of New Zealand has only some 49,000 inhabitants, and further, that as all public hospitals are supported by the State people are inclined to say, "Oh, let the Government put them up." The success of the appeal is largely due to the medical profession generally and to Dr. A. K. Newman and Dr. T. H. A. Valintine in particular. When the scheme outlined by the Minister of Health has been carried out in its entirety New Zealand will undoubtedly have done something to check the march of consumption. The idea is to erect small annexes in connexion with country hospitals situated in districts which have a reputation for excellence of climate. Patients will require to enter the hospital belonging to their several districts but later they may be drafted into the Government sanatorium at Cambridge. The cost of administering these annexes close to a general hospital will be much less than that of a separate institution, while from a preventive point of view their value will be almost as great. The patient will be housed in such a manner as to give him the best chance of recovery, he will be taught the value of fresh air, cleanliness, and a reversion to a more natural mode of life, while the destruction of the sputum will be assured.

Honour for the Inspector-General of Asylums.

A well-deserved tribute has been paid to our Inspector-General of Asylums (Dr. Macgregor) by his *alma mater* (Aberdeen) in presenting him with the LL.D. The acknowledged excellence of our asylums—that is, as regards all that pertains to their management—is in a large measure due to the firmness and foresight of Dr. Macgregor. An uncompromising opponent of all State coddling and salvation of the body politic through eleemosynary treatment, it has been his lot to run the hospitals and asylums of the most democratic of His Majesty's colonies.

The Sad Death of a Young Woman at a Private Hospital.

An event in Christchurch recently illustrates how sometimes the best-intentioned procedure may result in great wrong. According to the evidence given at the inquest a young woman who, the medical attendant stated, suffered from hysteria was sent to a private hospital. She became violent and was placed in a "strait jacket" in addition to being strapped to the bed by the feet as well as by the neck. It would appear that she was left alone for some time. On returning the nurse found her lying dead, with her head over the side of the bed. Dr. W. H. Symes, who sent the case to the hospital, stated that he did not feel justified in certifying that she was insane. Dr. B. M. Moorhouse corroborated the statement. Dr. Symes stated that he had sent many cases to this particular home and had always been satisfied with the way in which the hospital had been conducted. A juryman asked whether, if the patient had been sent to the asylum, "she would not have been alive now." The coroner said, Yes. He commented upon the fact that the nurse actually in attendance on the deceased admitted that she had had no previous training with respect to such cases. The jury found that the deceased had died from suffocation and added a rider to the effect that such cases should not be allowed to be treated in private homes. The hospital in question was licensed by the Health Department. The certificate of character and ability was signed by two well-known medical men of standing in Christchurch. The building had been inspected carefully. An accident such as this points to the need of more frequent inspection, though it is difficult to see how a health official could have averted it unless he had been actually present at the time.

Wellington, May 20th.

Obituary.

JAMES MACNABB CUNINGHAM, C.S.I., M.D. EDIN., LL.D., K.H.S.,

SURGEON-GENERAL, I.M.S.

THE death of Surgeon-General J. M. Cuningham, which took place at Buckingham Palace-mansions on June 26th last, at the age of 76 years, removed an officer of the Indian Medical Department of long and distinguished service who had in his time occupied a very notable and influential position. He was intimately acquainted with Sir John (afterwards Lord) Lawrence and other Viceroys of India and socially, as well as in respect of his intellectual qualifications, was much esteemed and liked by Indian officials and men in authority. Surgeon-General Cuningham during his career filled some of the highest medical and sanitary posts in connexion with the Government of India and was at one time the administrative head of the service to which he belonged. He retired from the service in 1885, having entered the H.E.I.C.S. so long ago as in 1851. He was a graduate of the University of Edinburgh which in 1892 conferred upon him the honorary degree of LL.D. After having joined and held various appointments in the Bengal Medical Service he became secretary to the Sanitary Commissioner and was next appointed Sanitary Commissioner of Bengal, and afterwards (in 1875) as Sanitary Commissioner with the Government of India he had charge of the whole sanitary department of that country and was for many years the special adviser of its Government. His name also became widely known in connexion with the long series of annual reports which were issued during the time he occupied that office. In 1880 he became surgeon-general with administrative charge of the medical service in India. When he retired in 1885 he was awarded a Companionship of the Star of India and three years later he became honorary surgeon to Queen Victoria. He was a member of the Army Sanitary Committee from 1891 to 1896, and in 1894 he represented the Government of India at the Paris International Sanitary Conference. He was the author of a treatise on "Cholera: What can the State do to prevent it?" This is neither the time nor the place to discuss the policy adopted and followed by Surgeon-General Cuningham or to enlarge upon the views he held in regard to the origin and causes of Indian diseases and the best way of dealing with them, more especially with those of an epidemic character. Surgeon-General Cuningham was a man of both boldness and ability. He held very decided opinions in regard to these matters and set them forth in very plain and lucid terms in his reports, adhering as closely as he could in so doing to arguments based upon facts and figures, to the exclusion of all theoretical views, and especially to such as seemed to him to be demonstrated insufficiently to warrant the interference of the Government or the outlay of public money in their behalf. Endowed with an eminently common-sense and judicial rather than a scientific type of mind he always sought to look on his advisory duties to the Government not only from the standpoint of medical science but from that also of the statesman who has to incur the responsibility of giving effect to the advice which he receives.

DONALD URQUHART MACLENNAN, M.D. EDIN.,

MEDICAL OFFICER OF HEALTH, WIDNES, LANCASHIRE.

Dr. Donald Urquhart MacLennan was born at Milton, Glen Urquhart, on April 5th, 1851. He was the second of three brothers who all became members of the medical profession. He received his early training at the parish school of his native place—a glen famous for its beautiful scenery and romantic surroundings. He attended arts classes for one or two sessions at the University of Glasgow, but his medical studies were pursued at the University of Edinburgh, where he graduated as M.B., C.M. in 1878 and as M.D. in 1882. For a year after graduation he acted as assistant to the late Dr. Cran of Salford. In the year 1880 he commenced practice at Widnes and there he spent 25 busy years. In later years he became medical officer of health of the newly formed municipal borough, and those who remember Widnes 20 years ago will be ready to appreciate how much the chemical town owes to his energy and skill. Dr. MacLennan's professional career was one of hard and strenuous work. He was an active general practitioner of the best type and secured a large practice in the town and district.

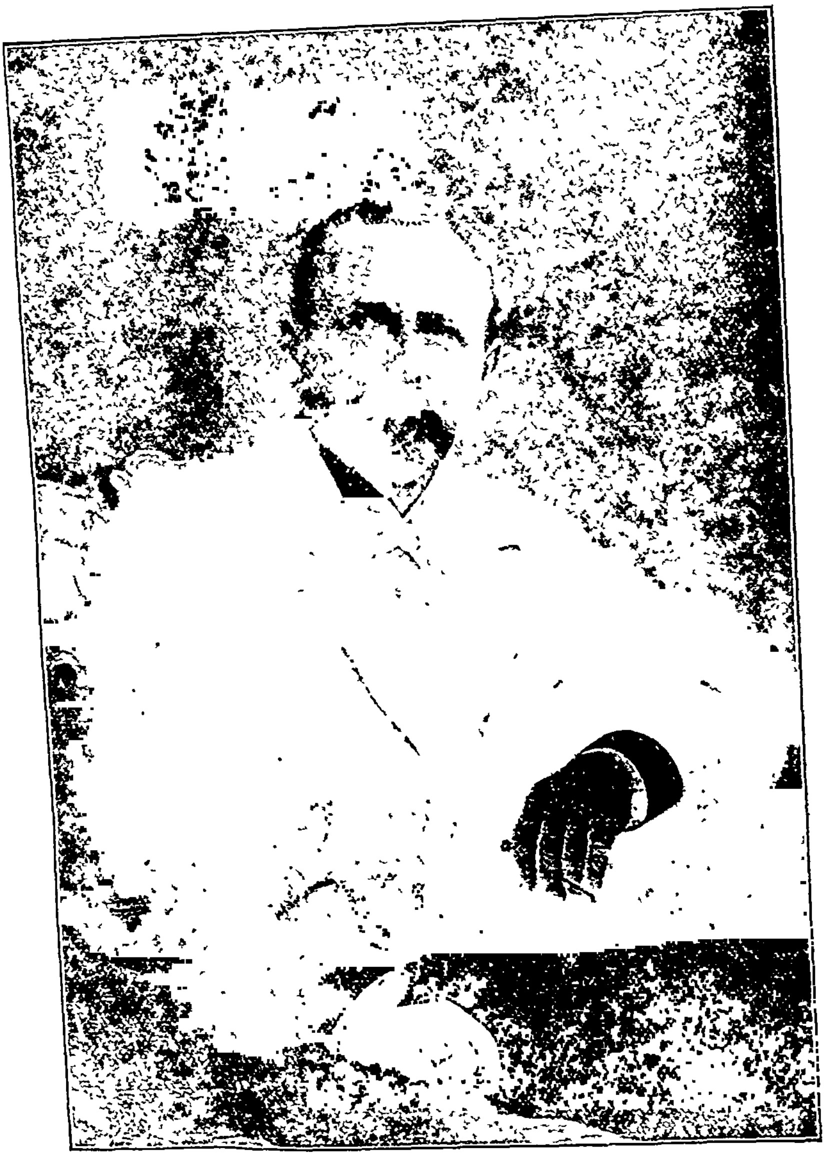
A Highlander to the backbone, Dr. MacLennan was possessed of a buoyancy and exuberance of spirits that are alien to the Scoto-Celtic temperament. Good at his work, an active and vigorous personality, and generous to a fault, he was a bright, breezy companion—a man who made friends and kept them. Deeply interested in all things Celtic, he was one of the founders and original members of the Caledonian Medical Society and was president of the society in the year 1884. He was also chiefly instrumental in founding the Widnes and District Medical Society in 1895 and he was its first president. He often referred with pride to the fact that he had taken an active part in founding and establishing two distinct medical societies—one connected with his fatherland and the other with the town of his adoption. Eight years ago he broke down with a serious attack of pleurisy which developed into empyema. From this he made a good recovery but about a year ago hepatic troubles manifested themselves and despite the most careful nursing and all that his medical friends could do for him they pursued their sequence to the fatal end. He faced the inevitable, not only with fortitude but with a cheerfulness, brightness, and patience that were marvellous, particularly in a man of his untiring and indomitable energy. He was attended in his illness by his friend, Dr. J. R. Logan of Liverpool.

The funeral took place on June 7th and the ceremony was attended by the mayor, corporation, and officials, by many hundreds of the townspeople, and by numerous sorrowing friends from a distance. Dr. MacLennan is survived by his widow and five children. His eldest son is studying medicine at the University of Edinburgh.

PROFESSOR VON MIKULICZ-RADECKI,

PROFESSOR OF SURGERY IN THE UNIVERSITY OF BRESLAU.

OUR Berlin correspondent has already given our readers a note upon the career of the celebrated surgeon who is known to all Englishmen as Mikulicz and not by his full name as von Mikulicz-Radecki, and whose death took place on June 14th at Breslau, where he was professor of surgery. We may supplement this account by a few details. Professor Mikulicz was born in 1850 at Czernowitz; he studied at Vienna and received his degrees at the age of 25 years. After being for some time attached to the Universities of Cracow and Königsberg, he was in 1890 appointed to Breslau and raised the reputation of the surgical clinic there, till it was regarded as one of the greatest centres of surgical study in Germany. We need not here repeat what we have already published. In England Professor Mikulicz was best known as the coadjutor with Professor von Bergmann of Berlin and Professor von Bruns of Tubingen in "A System of Practical Surgery," a review of which appeared in our columns quite recently. This work, in five volumes, which forms practically a complete surgical library in itself, was so highly appreciated by the profession of Germany that a second edition of the earlier volumes was asked for before the later ones were published. Italian and Spanish translations appeared almost immediately but the English translation by Professor W. T. Bull (the book which was reviewed on June 24th, p. 1723) has only recently been issued. This English translation has the advantage of being made from the second German edition and possesses over 100 full-page plates which were not given in the original.



PROFESSOR VON MIKULICZ-RADECKI.

The additions made to surgery by Mikulicz are not connected with any special department but are spread all over the science of surgery. With two operations, however, will his name be chiefly connected. Vladimirof had designed in 1872 an osteoplastic resection of the foot for disease of the tarsus but Mikulicz was quite unaware of what Vladimirof had done when he performed his operation. It consists essentially in the removal of the soft parts covering the heel, with the astragalus and os calcis, so that the cuboid and scaphoid are brought into contact with the same surface of the tibia and fibula and thus a condition of marked talipes equinus is produced. The operation is ingenious but it is even yet too soon to express an opinion as to its ultimate position in operative surgery. The other chief contribution to surgery is the operation of pyloroplasty. The idea of relieving a fibrous stricture of the pylorus by dividing it longitudinally and then suturing it transversely appeared to have occurred almost simultaneously to Heineke and to Mikulicz and therefore the operation is now frequently known by both their names. The device is applicable to many portions of the alimentary canal and, indeed, to all tubular viscera, and it has attained deservedly to a widespread employment, though in great part its use for the relief of fibrous stenosis of the pylorus has given way to gastro enterostomy. As an operator Mikulicz was bold and ingenious, clever in devising expedients to overcome difficulties encountered, and skilful in carrying out the operations which he had devised.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced.—Dr. Joseph Krieger, who was until a couple of years ago head of the medical department of Alsace and Lorraine. His published papers deal with a variety of hygienic subjects, especially with the geographical distribution of disease and epidemiology. He was 71 years of age.—Dr. Viktor Wehr, professor of surgery in Lemberg, at the age of 52 years.—Dr. Robert King, professor of gynæcology in the St. Louis College of Physicians and Surgeons.—Dr. Peters, author of numerous papers on the pharmacology of new drugs.—Dr. Consiglio, *privat-docent* of physiology in Palermo.—Dr. A. Le Roy, formerly surgeon to the Rouen hospitals.—Dr. Karl Wernicke, professor of mental diseases in Halle, and author of many papers and several large works on the brain and its pathology. He was 57 years of age. The cause of death was a bicycle accident which he met with in the Gerathal.—Dr. Georg Mayer, the well-known Aix-la-Chapelle physician, at the age of 80 years.—Dr. von Hüttenbrenner, formerly director of the Karolin Hospital, Vienna.—Dr. Feodor Zavarikin, late professor of histology and embryology in the St. Petersburg Military Medical Academy.—Dr. August von Wegner, Surgeon-General in the Prussian Army and for many years body physician to the Empress Frederick.

Medical News.

University of Oxford.—Dr. James Ritchie, M.A., B.Sc., Fellow of New College, Reader in Pathology, has been constituted Professor of Pathology so long as he holds the aforesaid readership.—At examinations held recently the following candidates were successful:—

First M.B. Examinations.

Organic Chemistry.—H. O. S. Gibson, New College; G. D. Knox, Balliol; G. E. Neligan, Exeter; H. W. Scott-Wilson, Queen's; W. W. Wagstaffe, New College; and R. O. Ward, Queen's.

Materia Medica and Pharmacy.—P. P. Andrews, University; D. C. Dobell, Christ Church; G. E. Downs and H. J. Fry, Magdalen; H. E. Gibson, Queen's; G. H. Hunt, Christ Church; G. J. Z. Jessell, University; G. E. Neligan, Exeter; H. P. Newsholme, Balliol; J. A. Noble, Queen's; E. W. M. H. Phillips, Jesus; and T. S. Wright, Brasenose.

Human Anatomy and Human Physiology.—M. B. Bates, St. John's; A. W. Burnyeat, Queen's; G. D. Carpenter, New College; C. D. H. Corbett and G. H. Crosfield, University; G. R. Girdlestone and S. Hartill, New College; B. G. Klein, Christ Church; and T. R. Walker, Hertford.

Second M.B. Examinations.

Forensic Medicine and Hygiene.—H. H. Baker, University; H. A. Barnes, Keble; O. E. Berkeley-Hill, Trinity; L. T. Burra, University; P. J. Dear, New College; J. S. C. Douglas, Christ Church; E. L. Farncombe and J. H. Hebb, St. John's; R. Jamison, Trinity; R. C. Jewesbury, Christ Church; G. A. Jones, Magdalen; S. Nockolds and L. J. J. Orpen, Keble; C. J. Pinching, St. John's; J. G. Priestley, Christ Church; C. A. Smallhorn, Wadham; B. H. Spilsbury, Magdalen; H. G. F. Spurrell, Merton; and H. C. Squires, Hertford.

Pathology.—H. H. Baker, University; C. Beards, Jesus; H. B. Billups, Worcester; H. H. Carleton, Keble; D. Davidson, Brasenose; J. S. C. Douglas, Christ Church; E. L. Farncombe, St. John's; G. M. Johnson and G. A. Jones, Magdalen; O. G. F. Luhn, Christ Church; S. Nockolds, Keble; C. J. Pinching, St. John's; H. R. Ramsbotham, Brasenose; H. S. Souttar, Queen's; H. C. Squires, Hertford; A. S. J. Thompson, Queen's; and A. P. Yonge, Exeter.

Medicine, Surgery, and Midwifery.—H. A. Barnes, Keble; E. L. Farncombe and J. H. Hebb, St. John's; R. Jameson, Trinity; R. C. Jewesbury and J. G. Priestley, Christ Church; C. A. Smallhorn, Wadham; and B. H. Spilsbury, Magdalen.

Master in Surgery.

A. C. Goodwin, B.M., Keble; and O. W. Richards, B.M., New College.

University of Cambridge.—At the final congregations of the term, held on June 20th, the honorary degree of LL.D. was conferred on the Right Hon. Earl Cromer, in the presence of H.R.H the Duchess of Albany, and the following were admitted to medical degrees:—

M.D.—F. J. Lidderdale, Trinity; and F. J. Child, Christ's.

M.B.—D. V. Cow, Trinity; T. J. Fauldes, Clare; R. E. G. Gray, Pembroke; G L. Crimp, Caius; H. Spurrier, Caius; and R. A. Clapham; Emmanuel.

B.C.—W. G. Howarth, King's; R. E. G. Gray, Pembroke; H. Spurrier, Caius; and E. Lloyd, Emmanuel.

During the academical year just closed 30 M.D. degrees, six Sc.D. degrees, two M.C. degrees, 62 M.B. degrees, and 59 B.C. degrees were conferred.—On June 27th the University of Durham held a convocation in the Castle Hall, at which the degree of Doctor of Civil Law, *honoris causâ*, was conferred on Dr. Donald MacAlister, St. John's College, President of the General Medical Council. Dr. MacAlister was presented to the Warden and Proctors by Sir George Philipson, Caius College, professor of medicine in the University of Durham.

University of Leeds.—A congregation of the University was held in the town hall on July 1st, when certain degrees were conferred by the Vice-Chancellor on associates of the Yorkshire College and on other students who, having attended complete courses of studies in the Yorkshire College, had graduated in Victoria University or in other universities of the United Kingdom. In the latter category degrees in medicine were conferred on the following:—

Doctor of Medicine.—Edward Turton, M.D. Vict.

Bachelor of Medicine.—George Lee Wells, M.B., B.S. Lond., Alfred Featherstone Kellett, M.B Cantab., Arthur Manknell, M.B. Lond., Stephen Leonard Butterworth Wilks, M.D., B.S. Lond., Douglas Seaton, M.B. Vict., Ralph Hopton, M.D., B.S. Lond., Charles William Eames, M.B., C.M. Edin., John Broadley, M.B. Lond., Francis Darlow, M.B. Vict., Alexander Mackenzie, M.A., M.B., B.C. Cantab., Charles Herbert Moorhouse, M.B. Vict., Harry Stansfield, M.B Vict., William Jenkins Webb Anderson, M.B. Vict., Charles Henry Greenwood, M.B. Vict.. John Arthur Reed, M.B. Vict., Ernest William Spink, M.D Lond., Charles Rudolph Willans, M.B. Vict., Henry Brown, M.B. Vict., William Atkinson Stott, M.B. Vict., Robert George Macdonald Ladell, M.B. Vict., Leonard Ralph Braithwaite, M.B. Vict., Harry Maffin M.B. Vict., Crawfurd Tait Matthews, M.B. Vict., Frederick Percy Hewetson Birtwhistle, M.B. Vict., Wilfred Edward Brierley, M.B. Vict., Edward Cundall, M.B. Vict.. Arthur Maslen Deane, M.B. Vict., Frederic William Marshall Greaves M.B. Vict., Frederick William Hayes, M.B. Vict., James Huntly Legge, M.B. Lond, Herbert James Macvean, M.B. Vict., Bertram Suggit, M.B. Vict., Herbert Tomlin, M.B. Vict., and William Herbert Smailes, M.B. Lond.

Among those degrees conferred on the results of examinations of the University was the following:—

Doctor of Medicine.—Arthur Stanley Parkinson.

On June 30th degrees were conferred by the Vice-Chancellor on the heads of certain departments and on certain members of the staff of the General Infirmary at Leeds which is closely associated in its work with the University. Among these the following were conferred:—

Master of Science.—C. J. Wright, M.R.C.S. Eng., William Bevan Lewis, M.R.C S. Eng., L.R.C.P. Lond., W. H. Brown, F.R.C.S. Irel., M.R.C.S. Eng, Harry Littlewood, F.R.C.S. Eng., and H. Secker Walker, F.R.C.S. Eng.

The written examinations for degrees in medicine and surgery will begin on July 10th and the practical and *vivâ voce* examinations on the 13th. Degrees will be conferred by the Vice-Chancellor on July 22nd.—By resolution of the Court the degree of M.D. was conferred *in absentiâ* on William Walter Stoney, M.D. Vict., residing at Kimberley, South Africa.

Foreign University Intelligence.—*Baltimore (Johns Hopkins University):* Dr. W. S. Thayer has been appointed to the chair of Clinical Medicine.—*Bologna:* Dr. Crisafulli of Naples has been recognised as *privat-docent* of Mental Diseases.—*Breslau:* Dr. Bernhard Heile has been recognised as *privat-docent* of Surgery.—*Clausenberg:* Dr. Elemer Veress has been recognised as *privat-docent* of Physiology and Dr. Julius Filep as *privat-docent* of Hygiene.—*Giessen:* Dr. O. Frank of Munich has been offered the chair of Physiology with the Directorship of the Physiological Institute as successor to the late Professor Eckhard.—*Gottingen:* Dr. Birnbaum has been recognised as *privat-docent* of Gynæcology.—*Konigsberg:* Dr. R. Stich of Nürnberg has been recognised as *privat-docent* of Surgery. Dr. Berthold, Extraordinary Professor of Laryngology and Otology, is about to resign.—*Munich:* Dr. Karl Hörmann has been recognised as *privat-docent* of Gynæcology.—*Odessa:* Dr. Sadowski of St. Petersburg has been appointed to the chair of Gynæcology.—*Paris:* Dr. Wertheimer of Lille and Dr. Yersin of Paris have been elected Corresponding Members of the Paris Academy of Medicine.—*Prague (Bohemian University):* Dr. Kamil v. Lhotak has been recognised as *privat-docent* of Pharmacology.—*Rostock:* Dr. Brüning of Leipsic has been recognised as *privat-docent* of Children's Diseases.—*Vienna:* Dr. Anton Brosch has been recognised as *privat-docent* of Pathological Anatomy; Dr. Otto Ritter v. Furth as *privat-docent* of Medical Chemistry; and Dr. Otto Marburg as *privat-docent* of Neurology.

The Russian Censor and Medical Literature.—In view of the extraordinary difficulties put in the way of the publication of the report of the Pirogoff Congress and of the *Journal of the Pirogoff Medical Society* by the censor, the *Novoe Vremya* states that the managers of these two publications have issued a notice explaining the necessity of suspending the publication of the report and of the journal till better times arrive for the Russian press.

Brussels Medical Graduates' Association.—The annual meeting and dinner of this association will be held on Thursday, July 13th, at 7 o'clock, at the New Gaiety Restaurant, Strand, London. Members desirous of attending are requested to notify the honorary secretary, Dr. F. H. Edwards, Camberwell House, London, S.E.

The League of Mercy.—On July 1st, at the invitation of the Prince and Princess of Wales, a garden party was held at Marlborough House in connexion with the League of Mercy. While the majority of the guests, who included the presidents, lady presidents, vice-presidents, and members of the league, were assembling in the grounds a meeting was held in the drawing room of Marlborough House when the report of the year was presented. The Prince of Wales said:—

> I am much gratified to learn from the report that another most successful year has been completed and that the large sum of £14,000 has been handed over to King Edward's Hospital Fund. This makes a total contribution of £46,000 during the five years that the league has been in existence. This steady increase is, indeed, most satisfactory and I am well aware that such results could not have been attained without much personal trouble and sacrifice of time on the part of the members of the league. The Princess desires me to express her regret that she is unable to be present and in her name, as well as in my own, I desire once more to thank you for the splendid work you have done on behalf of the league.

The meeting then adjourned to the gardens where the Prince, accompanied by Prince Edward and Prince Albert, presented the badge of the Order of Mercy to those ladies and gentlemen who had been awarded this honour for their work on behalf of the league. During the afternoon the band of the Royal Marines played a selection of music and refreshments were served at a buffet which had been specially erected to meet the needs of the 1000 guests who had received invitations.

Middlesex Hospital.—A special court of governors of this hospital was held on June 30th under the presidency of the Duke of Northumberland to consider the notification from the King Edward's Hospital Fund for London that no grants would be made from the King's Fund to any hospitals which make payments to their medical schools out of general funds subscribed for the relief of the sick poor. The Duke of Northumberland pointed out to the governors that the welfare of the sick throughout the whole land and the character of the medical profession would be affected by their decision on the connexion between the medical schools and the hospitals and the training which those schools could afford to give their students. Sir Richard Douglas Powell proposed a motion that it was the desire of the special court of governors that the medical school of Middlesex Hospital should be maintained and that such assistance as might be required for that purpose should be provided by the hospital or by a special fund raised for the purpose. This was seconded by Mr. Henry Morris who urged the desirability of starting a separate fund for medical education. The motion was then put to the meeting and was carried unanimously. Immediately after this Lord Derby proposed a motion authorising the hospital authorities to set aside out of the annual subscriptions such sums as might from time to time be required to effect the maintenance of the medical school and that as evidence of such authority the subscribers to the hospital should be asked and recommended to sign and to return to the hospital a form drawn up for that purpose. Lord Derby spoke for a short time in support of his proposition and contended that the hospital reaped benefit from the services of the medical students. The hospital and the medical school worked together for the advancement of medical skill and for the relief of suffering, and in that way were inseparably connected. Lord Cheylesmore, in seconding the motion, asserted that if the medical school were abolished the expenses of the hospital would be increased. The 504 governors of the hospital had been circularised and only five refusals had been received from governors who declined to join in the proposed scheme for setting aside out of the annual subscriptions such sums as might be necessary for the maintenance of the medical school. This motion, on being put to the meeting, was carried unanimously, and the proceedings terminated with a formal sanction being given for a sum of money to be expended in improvements connected with the operating theatre.

Medical Barristers.—On July 5th five medical men were called to the Bar on "call night" of Trinity term at the four Inns of Court. Harold Coates, M.D., D.P.H. Vict., and John Francis Butler-Hogan, M.D. Brux., D.P.H. Cantab., LL.B., were students at Gray's Inn; Frederick Sherman Toogood, M.D. Lond., at the Middle Temple; James Scott Tew, M.D. Durh., D.P.H. Cantab., at the Inner Temple; and William Robert Bryett, M.D. Lond., at Lincoln's Inn.

The Odessa correspondent of the *Novoe Vremya* announces that the dean of the medical faculty of the Novorossisk University, Podvisotscki, has been appointed director of the Imperial Institute of Experimental Medicine.

Donations and Bequests.—By the will of Catherine, Countess of Stamford and Warrington, £500 are bequeathed to the General Infirmary, Leicester, in aid of the Children's Hospital; £200 to the Queen's Hospital, Birmingham; and £200 to the General Hospital, Birmingham.—Mr. Wyndham Francis Cook of Cadogan-square, a partner in the firm of Messrs. Cook, Son, and Co., of St. Paul's Churchyard and of Manchester, has bequeathed £25,000 to any central hospital fund in such proportions as his executors shall deem fit (of this sum £12,500 have been already given to the Metropolitan Hospital Sunday Fund), and £1000 to the Royal Ophthalmic Hospital, Moorfields.—Under the will of Miss Clara Maud Petter, of Leeholme, Bournemouth, the Royal Victoria Hospital at Bournemouth and the North Devon Infirmary at Barnstaple each receives £500. The Royal Hospital for Incurables receives £300.—Mrs. Mary Ada Mocatta has bequeathed by her will £300 to University College Hospital and £200 each to the London Hospital, St. Mary's Hospital, the Metropolitan and National Nursing Association, and Guy's Hospital.

Civil Hospitals and Dispensaries of the United Provinces (India).—The inspector general of civil hospitals of the United Provinces, Colonel C. H. Joubert, I.M.S., in his triennial report, dated 1905, dealing with the years 1902–04, points out that relaxation of the provincial rule by which a civil surgeon lost his lien on the civil station from which he took furlough has been followed during the years 1903 and 1904 by the excellent result that a considerable proportion of the senior officers holding good appointments have taken long furlough and have had a much needed opportunity of putting themselves in line with modern progress in Europe. It is essential for medical officers, however good they may be, to see as often as possible the work of other men in England. The rule formerly in force in the United Provinces was a fatal bar to this. On Jan. 1st, 1902, there were 485 hospitals and dispensaries of all classes open; on Dec. 31st, 1904, there were 508. This represents a net gain during the three years under review of 23 institutions. During the year 1904 13 new dispensaries were opened and five were closed. A Government order criticising the report is appended and in it the Lieutenant Governor "desires to acknowledge the energy and zeal displayed by Colonel Joubert in stimulating the medical progress of the province and the ready help and coöperation which has been afforded to him by civil surgeons. In particular the thanks of the Government are due to Colonel Joubert for the great interest which he has taken in the Agra medical school."

Sussex County Hospital: Stephen Ralli Memorial.—The opening and dedication of the bacteriological and pathological laboratory with which the Sussex County Hospital has been endowed by Mrs. Stephen Ralli as a memorial of her late husband took place at the hospital on June 29th. Despite the wet weather the marquee erected adjoining the laboratory was crowded. The memorial laboratory is situated in a two-storey block within a few yards of the hospital and comprises five rooms. On the ground floor is the preparation room facing the entrance; on the left of the entry is the chemical room from which access is gained by a swing door to the bacteriological room and the pathologist's room. The bacteriological room measures 19 feet 2 inches by 11 feet 7 inches, is well lighted on the east and south, and has a teak bench for four workers on the south and a slate bench on the north for embedding oven, microtomes, water blast, incubators, &c. The chemical room is 12 feet 7 inches by

23 feet 1 inch high and has teak benches, burette shelf, hot and cold water, gas, electric light, a fume cupboard, centrifuge, &c., and is well stocked with chemicals and glass ware. On the second floor is placed the photographic room. The block includes also the hospital post-mortem room and lecture room which form together a complete pathological institute. The pathological institute is intended for the clinical and pathological research of the hospital and is available to all medical practitioners at the usual fees. It thus can assist materially in the detection, prevention, and treatment of disease.

CENTENARIANS.—Mrs. Metherell of Tavistock, Devon, on May 24th celebrated the 101st anniversary of her birth.—Mr. John Bennett of Bradworthy, Devon, died on May 26th. He was a churchwarden of the parish church up to within a month of his death and the church register shows that he was baptised on May 6th, 1805.—In the *Times* of June 20th the Brussels correspondent stated that a Belgian lady, Madame Rolland of Seneffe, completed her 104th year on June 12th. She is credited in Belgium with being the only surviving witness of the battle of Waterloo.—Mrs. Mary Parsons of Enmore Green, Shaftesbury, Dorset, died on June 18th at the age of 104 years.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at 6, Suffolk-street, Pall Mall, London, on June 29th, when Dr. F. H. Champneys occupied the chair. The first business on the agenda was the consideration of a communication from the Breconshire county council transmitting a report and scheme on the administration of the Midwives Act dealing more particularly with the details concerning the local administration of its provisions. The Board directed its secretary to thank the Breconshire county council for the report and scheme. The next question before the Board was with regard to the number of examinations for midwives to be held during the year by the Central Midwives Board. On this subject a memorial had been sent from the committee of the Queen Victoria Jubilee Institute for Nurses protesting against the recent decision of the Board to hold four examinations in the year instead of three and asking the Board to reconsider its decision. A memorial was received to the same effect from the executive committee of the Association for Promoting the Training and Supply of Midwives and a letter to the same purport was sent to the Board from the warden and matron of the Salvation Army Maternity Hospital. This matter was considered at some length by the Board and it was finally decided that all the institutions concerned in the question of examinations should be informed that the Board proposed to hold a conference with them on the subject on July 29th.

CONVERSAZIONE AT KING'S COLLEGE, LONDON.—A conversazione was held at King's College, London, on June 29th, and the spacious buildings of the institution were filled with interested guests who thoroughly enjoyed the various entertainments that were provided for their amusement and instruction. In the grand entrance hall the principal of the college and Mrs. Headlam, with the deans and members of the staff, received the visitors on arrival. An organ recital in the chapel by Professor J. E. Vernham rewarded those who came early and this was followed by a lantern exhibition in the architectural class room. At the same time demonstrations were given in the electrical engineering laboratory and in the geological laboratory there was a lantern exhibition of reptiles from the Trias. There was a band in the entrance hall and another on the terrace for those who were not attracted by the exhibits in the museum and there were concerts in the large hall, followed by a dramatic entertainment which drew a large audience. On the second floor of the building in the physiological laboratory the microscopical preparations exhibited by Professor W. D. Halliburton and Dr. H. W. Lyle were carefully studied by a great number of those present. In room No. 27 Dr. C. S. Myers exhibited apparatus for the measurement of sensory acuity. The particular apparatus that seemed to astonish the visitors most was that known by the name of the Muller-Lyer illusion In room No. 29 Professor Herbert Jackson and Mr. Northall-Laurie were kept busily engaged showing the results of experiments of crystallisation under polarised light and demonstrating the differences between the various systems of crystals. In the opinion of Professor Jackson the value of using polarised light with the microscope was worthy of more attention from a medical point of view. The authorities had provided a large number of stewards who supplied visitors with information of all kinds and those concerned in the management of this conversazione must be congratulated on the very successful results of their efforts.

VACCINATION GRANT.—Mr. J. D. Staple, public vaccinator for the Ashley district of the Bristol Union, has been awarded the grant for successful vaccination by the Local Government Board for the fifth consecutive year.

RUSSIAN REPRESENTATIVES AT THE LISBON CONGRESS OF MEDICINE.—The Military Medical Academy having been invited to take part in the International Congress of Medicine to be held in Lisbon next year has selected Professor G. E. Rein and Professor I. P. Pawlow to attend as its representatives.

BRITISH DENTAL ASSOCIATION.—The central counties branch of the British Dental Association held its annual meetings in Leicester on June 30th and July 1st. At the annual dinner on Friday evening, which was attended by a number of local medical men, Mr. W. E. Harding (Shrewsbury), in replying to the toast of "The Association," expressed the hope that the dental profession would, by the help of the British Medical Association, shortly succeed in getting the Dental Act amended. No doubt there would be opposition encountered from some quarters but by hard, persistent work they ought to succeed. Mr. A. T. Hilder, the outgoing President, also replied to the toast. Mr. H. R. F. Brooks (Banbury), in submitting the toast of "The Medical Profession" said that the Bill for the amendment of the Dental Act was of the greatest possible importance, and no effort should be spared to get it through Parliament. The British Dental Association, which was formed on similar lines to the British Medical Association, had striven persistently for the uplifting of the profession. Mr. G. C. Franklin, the President-elect of the British Medical Association, said he thought that the great danger to both his own and the dental profession was the number of men joining them of inferior education. He hoped before long to see more stringent regulations with regard to the early examinations. When they obtained these both professions would benefit by having their ranks strengthened by the inclusion of a better stamp of men—men who had passed through the universities and held university degrees. Dr. F. M. Pope also replied, paying a tribute to the great assistance which the dental profession rendered to the medical profession.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION.—The annual dinner of the Poor-law Medical Officers' Association of England and Wales was held in the Oak Room of the Trocadéro Restaurant, London, on June 27th, Surgeon-General G. J. H. Evatt, the President of the association, being in the chair. The annual general meeting of the members took place just before the dinner and the report of the council for the year described how endeavours had been made to further the interests of Poor-law medical officers, including public vaccinators. At the end of last year an attempt was made by a London board of guardians to appoint a medical superintendent to a workhouse infirmary with a salary to include vaccination fees, but in consequence of the representations made by the council of the association the Local Government Board refused its sanction to the proposed arrangements. Among other cases dealt with by the council there was one in which duties were sought to be imposed on a district medical officer contrary to the Poor-law Orders; in a second an attempt was made by a certain board of guardians to elect its medical officers annually so as to take away all security of tenure. In a third case a serious complaint had been made against a district medical officer to the Local Government Board. Upwards of 50 new members had joined the association during the past year. After the usual loyal toasts Mr. Andrew Clark proposed "The Poor-law Medical Officers' Association." He said that the association had lasted more than 100 years and showed how the discussions at the meetings of members tended to the public good. Dr. Major Greenwood, the honorary secretary, in responding, drew a harrowing picture of the hardships endured by the Poor-law medical officers in out-of-the way districts. He contended that salaries should be raised and urged the members to stand up for their just rights, recognising at the same time that their common well-being was inseparably connected with the welfare of the poor. The toast of "The Guests" was proposed by the President and was replied to by Sir Walter Foster, M.P., who pointed out that to secure the desired reforms it was necessary for the medical men concerned to combine and observed that the want of unity among the units of the profession must be remedied. Sir William Collins also responded to the toast and said that he looked forward to the Poor-law regulations being brought into line with the modern spirit of the local government of this country. Dr. H. R. Crocker was then called upon to reply to the toast and after he had done so, Mr. D B. Balding submitted the toast of "The President," which was suitably acknowledged.

VAGRANCY AND THE SPREAD OF INFECTIOUS DISEASE —The conference held in November last at Spring-gardens appointed a committee, consisting of representatives of county councils, county borough councils, and metropolitan authorities, to give practical effect to the resolutions adopted by the conference. The committee forwarded the resolutions adopted by the conference to the various associations of local authorities and resolutions endorsing the majority of the decisions of the conference have been received from the associations of municipal corporations and of metropolitan borough councils, and the Association of Poor-law Unions of England and Wales. The County Councils' Association has referred the resolutions to the various county councils but no decision has as yet been arrived at by the association. On June 22nd a deputation, consisting of the committee of the conference and representatives from the Association of Poor-law Unions, was received by the President of the Local Government Board at the House of Commons. The deputation was introduced by Sir Walter Plummer, M.P. Alderman H. W. Newton of Newcastle-upon-Tyne submitted the resolutions adopted by the conference and those adopted by the associations already mentioned. He urged that legislation to give effect to the views of the conference should be promoted at an early date. The Mayor of Wandsworth (the Rev. J. H. Anderson) spoke on behalf of the metropolitan authorities and Dr. J. Milson Rhodes on behalf of the county councils. At the conclusion of the latter's remarks Mr. Gerald Balfour, who gave the deputation a most sympathetic reception, invited all those present to express their views on the question.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION OF MEMBERS OF COUNCIL.

THE election of Fellows to fill the vacancies in the Council of the College under the new regulations was held at the College, Lincoln's Inn Fields, on Thursday, July 6th, between 2 P M. and 4 P.M.

The result of the voting was as follows —

	Votes	Plumpers.
MR. EDMUND OWEN	512	22
MR GOLDING-BIRD	480	73
MR. R. J GODLEE	471	6
MR. W. HARRISON CRIPPS	373	87
MR. ANDREW CLARK	315	16
MR. W. BRUCE CLARKE	66	2

Mr. Owen, Mr. Golding-Bird, Mr Godlee, and Mr. Harrison Cripps were elected members of Council.

It will be remembered that Mr. Bruce Clarke withdrew his candidature.

Mr. Willmott Evans and Mr H. J. Price of Maldon acted as scrutineers.

760 Fellows voted by post and 12 voted personally, 3 proxies arrived too late and 3 voting papers were spoiled.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, JUNE 28TH.

Experiments upon Animals.

Mr. MACDONA asked the Secretary of State for the Home Department whether he was aware of the increase in the number of experiments by vivisectors upon animals this year over last year, the numbers being 32,562 in 1905, as against 19,084 in 1904, being a total increase of 13,478, and whether, in view of this increase, he would take steps to reduce this number.—Mr. AKERS DOUGLAS answered I am of course aware of the increase pointed out by the honourable Member. The particulars on pages four and five of the Annual Return show that this increase is almost wholly in the experiments included in Table IV. (B), i.e., experiments of the nature of simple inoculations or hypodermic injections and a very large proportion of those experiments were performed on behalf of official bodies. The progressive rise in the total number of experiments in recent years has been due almost entirely to the constantly increasing importance attached by the public and by public authorities to experiments upon animals as a means of obtaining the knowledge required for the diagnosis of disease or for the prevention [illegible] It is not for me to take any action in [illegible] uties under the statute are confined to seeing [illegible] ments are conducted in conformity with the provisions of the Act

Tuberculosis in Man and Animals.

Mr. FIELD asked the President of the Local Government Board whether he could state when the report of the Bovine Tuberculosis Commission would be issued, whether his attention had been called to the statement of Dr. Koch respecting the interim report as to the absence of evidence to prove that man can be infected by animal tuberculosis in any but the very slightest degree, and whether, in view of this pronouncement, the Government would support the Tuberculosis Compensation Bill.—Mr. GERALD BALFOUR replied As I stated in my reply to the honourable Member for the eastern division of Northants on June 9th I understand that the Royal Commission hopes to issue a further interim report towards the end of the present year but that it is not possible to say at present when the final report will be issued. My attention has been drawn to the statement of Dr. Koch referred to. I sympathise with the object of the Bill mentioned in the last part of the question but I am afraid I cannot give any promise with regard to it.

THURSDAY, JUNE 29TH.

The Medical Register.

Mr WEIR asked the Secretary of State for the Home Department whether, having regard to the fact that the General Medical Council stated that during the last ten years 20 names had been struck off the Medical Register for infamous conduct in a professional respect, and that of this number four were removed on charges of adultery, he would state how many names had been removed on this charge during the current year.—Mr. AKERS DOUGLAS replied. The answer to the question is three. I must add that the Medical Register is a matter with which I have no concern and that any other information which the honourable Member may desire would no doubt be furnished to him by the General Medical Council if he makes application to the Registrar.

Blood Poisoning in an Irish Infirmary.

Mr. SAMUEL YOUNG asked the Chief Secretary for Ireland whether, considering the number of deaths in the Cootehill workhouse in January, 1904, after medical operations from alleged blood poisoning, the Local Government Board had taken any steps to ascertain the cause of death in these cases; and whether, in view of the difference of opinion by local experts as to the cause of these deaths, and that the Local Government Board inspector reported that it was difficult to assign a direct and definite cause for the outbreak in this case, he would consider the advisability of ordering a sworn inquiry before the guardians were called upon to incur heavy expenditure for structural alterations.—Mr LONG replied The Board's medical inspector has already made minute investigation into the cause of this outbreak of blood poisoning. Though he was unable to assign the definite cause of the outbreak he was strongly inclined to the opinion of the union medical officer that the source of infection was in the wards of the infirmary. In the opinion of the Board a sworn inquiry would not be likely to throw further light on the matter.

Allegations in an Irish Case.

Mr. SAMUEL YOUNG further asked the Chief Secretary for Ireland whether he was aware that on or about June 20th, 1904, the medical officer of the Cootehill union, county Cavan, performed an operation on a patient called Fitzpatrick in the fever hospital after a local medical man who usually assisted at all such operations refused to administer ether because of the low condition of the patient, whether he was aware that the medical officer of the workhouse then called in a medical man from outside the Cootehill district, performed the operation, and the patient died a few hours after, whether the Local Government Board was informed of the facts and the cause of death in this case, and whether there was an inquest held or a sworn inquiry ordered.—Mr. LONG replied The Local Government Board is informed by the clerk of the union that the facts are substantially as stated. The local medical man referred to did not, however, refuse to administer ether, but asked to be excused as he was not in good health. The patient died on the day following the operation No complaint was made to the Board and no inquest or sworn inquiry was held The medical officer who performed the operation has the reputation of being a most careful and competent surgeon and the Board sees no reason to presume that there were any circumstances connected with the patient's death which require investigation.

Infant Mortality.

Mr HERBERT SAMUEL asked the President of the Local Government Board what was the death rate per 1000 births of infants under the age of 12 months in the urban and rural districts respectively of England and Wales —Mr. GERALD BALFOUR answered The best available information on this subject will be found on pages 73 and 74 of the Registrar General's Sixty sixth Annual Report which contains tables showing the infantile mortality (*a*) for a group of counties that are mainly urban, and (*b*) for a group of counties that are mainly rural in character. The following particulars are taken from these tables. Infantile mortality—Deaths under one year of age per 1000 births—urban counties average for 1898–1902, 165, 1903, 143, rural counties. average for 1898–1902, 126, 1903, 107.

MONDAY, JULY 3RD

Tuberculosis in Fowls.

Mr. MORRELL asked the President of the Board of Agriculture whether he had information to what extent this season tuberculosis was found in fowls, and whether he would cause inquiry to be made and information laid before the Commission on Tuberculosis with a view to ascertain whether that disease bore relation to that found in man and might be communicated to man in foods —Mr AILWYN FELLOWES answered We have no information to show that the disease in question is specially prevalent amongst poultry this season, but I will bring the suggestion of my honourable friend under the notice of the Royal Commission. I may add that we have prepared and issued a leaflet on the subject, with copies of which I shall be glad to supply him.

TUESDAY, JULY 4TH.

Insanitary Conditions and Fever.

Mr. WEIR asked the Lord Advocate whether he was aware that Dr. Cameron, the medical officer of health of the parish of Lochs, Island of Lewis, Ross-shire, stated in his report to the medical officer of health of the county that, being called upon to make inquiry in regard to two outbreaks of fever in the Balallan district, one of typhus and the other typhoid, he came to the conclusion that the outbreaks were due to the generally insanitary conditions prevalent; and whether, seeing that there were 108 pupils on the Balallan public school register, it was proposed to take any action to protect the lives of these children.—The LORD ADVOCATE said: I am aware that the outbreaks of fever referred to by the honourable Member are attributed to the insanitary conditions generally prevalent in the district which affect not only the children on the school register but the population at large. The matter engages the anxious consideration of the Secretary for Scotland and the Local Government Board who would be in a better position to remedy the evils complained of if the Congested Districts Amendment Bill now before the House became law.

SELECT COMMITTEE ON REGISTRATION OF NURSES.

The Select Committee of the House of Commons which is dealing with the subject of registration of nurses heard further evidence on June 27th. Mr. H. J. TENNANT presided.

Dr. ERNEST W. WHITE, professor of psychological medicine at King's College, London, chairman of the Parliamentary Committee of the Medico-Psychological Association of Great Britain and Ireland, and a member of the council of the Royal British Nurses Association, was the first witness. Examined by the Chairman he stated that the Medico-Psychological Association, which was an association of duly qualified persons interested in the treatment of the insane, had a system of registration. It granted certificates and it claimed for the holders of these certificates that they had attained a standard of efficiency and were of good moral character. They at least knew their work and the large majority of them possessed natural capacity for their work. Immense improvement had taken place in the nursing of the insane and tact, refinement, resource, and sympathy had replaced the ignorance, impatience, and brute force of former times. It was for that reason that he thought that mental nurses, male and female, should be eligible for any scheme of State registration of nurses that might be inaugurated.

The CHAIRMAN: What is the proportion of males and females amongst the 6500 persons who have passed your examination?

Witness: The registrar cannot give the precise figures to me but I should say about three-fifths of them were females.

The CHAIRMAN: You are a microcosm in yourselves of what it is suggested should be done for the whole country.

Witness: We think so.

In reply to Dr. C. F. HUTCHINSON, the witness stated that if State registration of nurses were carried out the register of his association might possibly become unnecessary. He would not go the length of saying that one year of the training of a mental nurse should be spent in a general hospital because there were excellent hospitals attached to some asylums where good training in sick nursing could be obtained.

Dr. G. E. SHUTTLEWOR
Workers' Association, then
he said that the expediency
qualified to attend upon cas
connexion with the general question of registration of nurses. As a rule hospital trained nurses had no experience of the special character required in mental cases. If registration were carried out, it would probably be necessary that hospital trained nurses and asylum trained nurses should appear in separate lists in the official register. Though the Asylum Workers' Association did not require any qualification for membership other than the recommendation of the medical superintendent for those in asylum service, it was the fact that about one-fourth of the members held the certificate of the Medico-Psychological Association, whilst others held certificates granted by their own asylums and a considerable number the first aid or nursing certificate of the St. John Nursing Association. It was important for the protection of the public that provision should be made for a class of private mental nurses in any scheme for the registration of nurses, because there were many unqualified or imperfectly qualified persons offering themselves as private mental nurses. The qualification for registration as a mental nurse should be at the least three years' experience in a recognised asylum where systematic training was given and the possession of the certificate in nursing of the
Medico-Psycholog certificate. The
Asylum Workers' ık and file of those
in the asylum se scheme for the
government of the nursing profession which included mental nursing. The witness, however, admitted the superior claims of the Medico-Psychological Association as an examining authority.

Mr. J. PATTEN MACDOUGALL, vice-president of the Local Government Board for Scotland, was the next witness. Examined by the Chairman, he said that there had been in existence in Scotland a register of Poor-law nurses since 1885. The origin of that register was due to the fact that the Board of Supervision, which was the predecessor of the Local Government Board for Scotland, was extremely anxious to get rid of pauper nursing in the poor houses in Scotland.

The CHAIRMAN: What you call pauper nursing was that the poor nursed each other.

Witness: That is generally what it amounted to. He went on to explain that the Scottish Local Government Board had no power to compel Poor-law authorities to abandon pauper nursing and untrained nursing. However the Board was able to offer inducements in this direction to Poor-law authorities owing to the flexible conditions under which the medical relief grant was distributed. It was thus enabled to make certain payments and allowances to Poor-law authorities in respect of the trained nurses whom they employed if those nurses were on the Board's list. The Board required that anyone admitted to registration should be "a trained sick nurse who should have been not less than two years in a public hospital, being a training school for nurses and maintaining a resident physician, and she must not be under 22 years of age nor over 45 when first registered."

The CHAIRMAN: The register is kept by the Board for the purpose of obtaining an efficient service of nursing for the poorhouse?

Witness: Yes, that is the object.

The CHAIRMAN: Have you found it effective from that point of view?

Witness: Yes. He proceeded to state that since 1885 there had been 773 names put upon the Local Government Board's register or an average of 36 per annum. In recent years the annual number of registrations had increased and in 1904–05 90 names were added to the register. At present 219 of the nurses so registered were in the employment of Poor-law authorities.

The committee then adjourned.

BOOKS, ETC., RECEIVED.

VIGOT FRÈRES, 23, Place de l'École de Médecine, Paris.

Les Perversions Sexuelles. XII. Fétichistes et Erotomanes. Par le Dr. Emile Laurent. Price Fr.3.50.

L'Hérédité Morbide. Par le Dr. Paul Raymond, Professeur Agrégé, Chargé de Cours de Pathologie Générale à la Faculté de Médecine de Montpellier. Price Fr.5.

WALTER SCOTT PUBLISHING CO., LIMITED, London and Felling-on-Tyne.

The New Science of Causation: Easy Duologues, Laying Bare the Hitherto Hidden, and Ensuring a General Collapse of the Foundations of Materialistic Science. By H. Croft Hiller. Price 10s. net.

WILLMER BROTHERS AND CO., LIMITED, 64 and 66, Chester-street, Birkenhead.

The Essentials of a Convenient, Comfortable, and Healthy House. By John W. Hayward, M.D., formerly Vice-President of the Liverpool Architectural Society. Price 1s.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BIRD, RICHARD KINGSTON, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Acting Officer of Health for the shire of Arapiles, Victoria, Australia.

BROWN, ROBERT LEE, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Acting Officer of Health for the shire of Cranbourne, Victoria, Australia.

LAURIE, HENRY, M.D. Melb., has been appointed Honorary Assistant Physician at the Alfred Hospital, Victoria, Australia.

LEDINGHAM, J. C. G., M.A., B.Sc., M.B. Aberd., has been appointed Assistant Bacteriologist to the Serum Department, Lister Institute, Elstree.

MORRIS, L. N., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant House Surgeon at the Bristol General Hospital.

OLIVER, W., L.R.C.P., L.R.C.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Coxhoe District of the county of Durham.

PARRY, LLOYD DAVENPORT, L.R.C.S. Edin., has been appointed Government Medical Officer and Vaccinator at Picton, New South Wales, Australia.

PATON, E. PERCY, M.D. Lond., has been appointed Examiner in Anatomy to the Society of Apothecaries of London.

RICHARDSON, A. G., M.B., C.M. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Rhayader District of the county of Radnor.

RICHARDSON, A. W. CECIL, M.B. Lond., has been appointed Casualty House Surgeon at the Bristol General Hospital.

RICHMOND, G. E., M.D., B.S., B.Sc. Lond., D.P.H. Cantab., has been appointed by the London County Council Resident Medical Officer to the Rotherhithe Tunnel Works.

ROSE, JOHN STUART, M.B., Ch.B. Aberd., D.P.H., has been appointed Assistant Medical Officer of Health of Penang.

SHEPPARD, A. L., M.B., has been appointed Casualty Officer at the Bristol Royal Infirmary.

SHORT, ARTHUR RENDLE, M.D., B.S., B.Sc. Lond., has been appointed House Physician to the Bristol General Hospital.

SYMES, J. O., M.D. Lond., has been appointed Physician to Clifton College, Bristol.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ARMY MEDICAL SERVICE.—40 Commissions in the Royal Army Medical Corps.

AYR COUNTY HOSPITAL.—Resident House Surgeon. Salary £70 per annum, with residence, board, and washing.

BRADFORD UNION HOSPITAL AND WORKHOUSE.—Resident Assistant Medical Officer, unmarried. Salary £100, with rations, apartments, and washing.

BRIGHTON, ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road.—House Surgeon. Salary £80, with board, lodging, and washing.

CAIRO, SCHOOL OF MEDICINE.—Assistant to the Professor of Anatomy. Also Assistant to the Professor of Pathology. Salary in each case is £E320 per annum.

CHARING CROSS HOSPITAL.—Assistant Surgeon.

DERBY, DERBYSHIRE ROYAL INFIRMARY.—Assistant House Surgeon for six months. Salary £30, with board, residence, and washing.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

HAMMERSMITH INFIRMARY AND WORKHOUSE, Ducane-road, Wormwood Scrubs, W.—Medical Superintendent and Medical Officer. Salary £300 per annum, with house, coals, light, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident Medical Officer. Salary £200 per annum, with board and residence.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Surgeon, unmarried. Also House Physician, unmarried. Also Assistant Casualty Medical Officer, unmarried. All three appointments for six months. Salaries £20, with board and residence.

HOSPITAL FOR WOMEN, Soho-square, W.—Registrar. Honorarium 25 guineas.

HULL ROYAL INFIRMARY.—Casualty House Surgeon... Salary £50 per annum, with board and lodging. Also Locum Tenens.

KENT AND CANTERBURY HOSPITAL.—Honorary Physician.

LEICESTER, BOROUGH OF, EDUCATION COMMITTEE.—Medical Officer. Remuneration £400 per annum, rising to £450.

MANCHESTER, VICTORIA UNIVERSITY.—*Junior Demonstrator* in Physiology. Salary £100, rising to £150 per annum.

NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Honorarium £20, with board, lodging, and washing.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Second Honorary Anæsthetist.

ORKNEY, PAPA WESTRY PARISH COUNCIL.—Lady Medical Officer and Public Vaccinator. Salary £75, with fees, house, and garden.

READING, ROYAL BERKSHIRE HOSPITAL.—Secretary and House Governor. Salary £200 per annum, with residence.

ST. MARY'S HOSPITAL, Paddington, W.—Honorary Anæsthetists.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—*Junior House* Surgeon. Salary £50 per annum, with rooms, board, and washing.

SOUTH UIST (SOUTHERN DIVISION).—Medical Officer. Salary £77 10s.

STOKE-UPON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—Senior House Surgeon. Salary £100 *per annum, with apartments*, board, and washing.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—Senior Resident Medical Officer, unmarried. Salary £200 per annum, with board and lodging.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician for six months. Honorarium of £25, with board and lodging.

WAKEFIELD, WEST RIDING ASYLUM.—Locum Tenens for six weeks. Terms £3 3s. per week, residence, board, &c.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the *Factory* and Workshop Act at Wimbledon, in the county of Surrey.

Births, Marriages, and Deaths.

BIRTHS.

CAMPS.—On June 28th, at Udney-park, Teddington, Middlesex, the wife of Percy W. L. Camps, M.B., B.S., F.R.C.S., of a son.

JONES.—On July 2nd, at Claybury, Woodford Bridge, Essex, the wife of Robert Jones, M.D., of a daughter.

LEANING.—On June 22nd, at Rusthall-avenue, Bedford-park, the wife of R. Craske Leaning, M.B., B.S., M.R.C.S., of a son.

ROBINSON.—On June 29th, at Marine-terrace, Waterloo, Liverpool, the wife of G. Burton Robinson, M.B., M.R.C.S., L.R.C.P., of a daughter.

MARRIAGE.

WEDDERBURN—BANKIER.—On June 28th, at St. Paul's Church, Adlington, Lancashire, Laurence Craigie Maclagan Wedderburn, M.B., Ch.B., to Inez Amy, second daughter of W. H. Bankier, Flushing, New York, U.S.A.

DEATHS.

METCALFE.—On July 3rd, at Clifton-gardens, W., Edmund Metcalfe, F.R.C.S., in his 66th year.

SMITH.—On July 5th, at Orleans House, Regent's Park-road, N.W., Cyrus Walter Smith, L.R.C.P. Lond., M.R.C.S., the beloved and only surviving son of Walter Smith, M.D., M.R.C.P. Edin., and Susan Smith of above address, aged 32 years. Interment at Nunhead Cemetery on Tuesday, 11th inst.

WALES.—On June 27th, at Holywood, co. Down, George Frederick Wales, M.D. Aberd., F.R.C.S. Edin.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

SOME "MOTOR" NOTES FOR MEDICAL MEN.

To the Editors of THE LANCET.

SIRS,—In answer to many requests from professional friends afflicted with incipient motor fever I propose, with your permission, to reply to the many letters I have received on the subject through the medium of THE LANCET. I believe the following remarks will cover the various queries I have received. I bought my car in September, 1904, it being my fourth venture in automobiles. The car (Wolseley 6 h.p.), a two-seater, has a single horizontal engine, transmitting its power by a chain to the gear-box and from there by another chain to a live axle, to the extremity of which the driving-wheels are keyed. The engine is certainly the best I have come across. The exhaust valve-spring is a laminated one. I have had two of these break. I believe a spiral spring is less likely to fracture, but against this is the fact that they are more troublesome to replace. On my other cars, two Benz and one Brown, where these springs were of the spiral kind, I was lucky enough not to have any such trouble. A shield is fitted under the engine; this is a great protection, keeping the machinery free from mud and dust, but it has its inconveniences as it must be removed in order to replace a broken exhaust spring and as I can say from experience this is a trouble to do on the road. The seat of the exhaust spring is the lower part of the combustion chamber; it would, I consider, be better if the seat was removeable, as in the case of the inlet valve, which is easily taken out. The crank is solid and the bearings are well lubricated by sight feed lubricators. The pump is gear driven and the radiators keep the circulating water fairly cool. Convenient cocks are fitted to drain off the water in frosty weather. The carburetter is of the spray variety and acts well. The gear box is suspended from the frame by two bolts by which, too, the distance of the gear box from the fly wheel can be altered and thus the tension of the chain between these parts kept constant. The bolts originally fitted were five-sixteenths of an inch and were apt to break. On two occasions this occurred to me. I believe the makers now get stronger ones.

The clutch.—This part of the car has given me a good bit of trouble. It consists of a pan into which a leather covered cone fits, the power coming by a chain from the fly wheel to the pan. A spring keeping it pressed against the male portion by means of a pedal working a fo-k the female portion can be withdrawn and the engine thus thrown out of gear. The diameter of the pan is small and a medical man's work, of course, means many stoppages with resulting friction between the two surfaces. On three occasions I have been stuck up by a slipping clutch. Once when taking a patient to see a specialist in town the leather fired and we stayed for over an hour on Vauxhall Bridge before it would grip. I certainly had less trouble with the old-fashioned but now discarded belt transmission with a loose and a keyed pulley as fitted on the old 4½-h.p. Benz. Probably a larger diameter clutch would be more satisfactory.

The brakes.—The hand brake consists of two bands working on drums on the driving wheels and are actuated by a side lever and a wire cable. This cable is apt to break at the point where it bends round the lever. This once happpened to me on a hill when the clutch was slipping. The experience was thrilling but luckily without disaster. My life not being insured I substituted rods for the cable, which have the additional advantage of making certain that the bands are absolutely free of the drums when off. The foot-brake, which also works a throttle, has been a source of anxiety, as when it is supposed to be off it still bears on the drum on the live axle, thus causing waste of power. When I took delivery of the car I found this drum so hot that I could not bear my hand on it, and if it is adjusted so as not to bear there is not room to bring the pedal down sufficiently low to make it act when required. Seemingly, the makers have not yet improved this defect, as on a new car I saw last week the drum after a run of only seven miles was very hot.

Ignition is of the ordinary high-tension variety, the coil being worked by a four-volt accumulator. A little attention that the connexions are clean and the commutator working freely saves much trouble and may obviate interesting a street crowd by unearthly noises due to missfires or, what is even worse, a breakdown.

Excluding the defects mentioned I believe the car to be well-suited for a medical man's work. Certainly it is a good hill climber, but the brakes and clutch could be improved with advantage.

Tyres.—Dunlop pneumatic were fitted on my car and seem to wear well. In addition I had Trosse non-skids on the driving wheels, but after a short time these bands became loose in places and present the appearance of having sebaceous cysts where the air has got in between the leathern band and outer cover.

I am, Sirs, yours faithfully,
CHARLES T. W. HIRSCH, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A.,
Public Vaccinator and Police Surgeon, Woolwich; late
Colonial Medical Service, Fiji.

Woolwich, June 28th, 1905.

ATTENDANCE ON THE CHILDREN OF MEDICAL MEN.

To the Editors of THE LANCET.

SIRS,—I should be glad of information on the following points. Are the children of a deceased medical man always entitled to free medical attendance during their lifetime; if not, how far does this custom extend? Is it usual to attend free a patient in the position of a householder or an adult merely because his father was a doctor?

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*** No definite rule can be laid down. Whether free attendance be given or not should, we think, depend upon the pecuniary circumstances of the patient. We do not consider that a patient is necessarily to be attended free because his father was a medical man, and certainly when the son of a medical man is the master of a house and well able to pay all the other claims upon him he should pay his medical adviser.—ED. L.

RED RUBBER.

WITH regard to the suggestion that red rubber may be a source of antimonial poisoning Aerators, Limited, of Angel-road, Edmonton, write: "There are only two washers in the 'sparklet' syphon head—one which is liable to come in contact with the water—viz., that on the bottle neck, which is purposely made in block rubber; a second which receives the neck of the bulb and makes the joint on piercing the latter—this is of red rubber, but no water comes in contact with this washer and no particles of this washer can get into the interior of the bottle." We find that this description of the sparklet bottle is correct in every particular.

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SIRS,—On June 29th I was urgently sent for to see a woman, aged 25 years, a multipara. She was in great pain. The abdomen was fully distended. Absolute dulness and vibratory tremor were well marked all over the abdomen. There were bulging of the perineum and protrusion of the posterior vaginal wall. She assured me that she had passed plenty of urine. There was a history of five months pregnancy. With slight difficulty I introduced the catheter and drew off *four quarts* of urine. On vaginal examination I found an enlarged uterus retroverted and fixed; this I reduced after placing the patient in the genu-pectoral position. The interest in this case is the capacity for practically unlimited distension of the bladder. The amount drawn off was carefully verified by measuring in an imperial half-pint measure (stamped). This distension of the abdomen had only arisen within the last four or five days. The patient has since the replacement of the uterus voluntarily passed two quarts at the time, and there appears to be no disturbance in the gestation.—I am, Sirs, yours faithfully,
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BERTRAM ADDENBROOKE.
Kidderminster, July 4th, 1905.

SYMPTOMS FOLLOWING THE INHALATION OF POLLANTIN.

To the Editors of THE LANCET.

SIRS,—A patient of mine purchased a tube of pollantin at a chemist's shop and started self-medication. The following are the notes of the case, which I hope you will publish in order to elicit further communications and to see if similar results have been observed by others. Or may we conclude that the symptoms in my patient could possibly be accounted for otherwise? A middle-aged gentleman had suffered for years from hay fever. He had never had attacks of giddiness. Hearing of the benefit a friend had obtained by using pollantin he determined to try it. On June 12th he started at 7 P.M. inhaling up his nostrils the quantity advised in the prospectus. At 10.30 P.M. he took a second inhalation and retired to bed. Next morning at 5.30 he awoke feeling very giddy and noticing a buzzing in the ears. The least movement of the head caused vertigo. The hay fever was checked, he said, but the feeling of giddiness was "horrible." He also noticed a dull, curious, aching feeling at the back of the head. Making an effort he dressed and later went to London. The symptoms persisted on and off all day. Coming home at 6 P.M. he stooped to pat his dog and then the vertigo became intense and he vomited. I saw him at 9 P.M.; he was on his back in bed, afraid to turn his head, and was complaining greatly of pain in the occipital region. His face looked pinched and cyanosed; his pulse was 48. The feeling of sickness passed off gradually. On the next morning I found that he had had a good night; the tinnitus had gone but he was still unable to move his head on account of the vertigo thus caused. The pulse was 54. His condition remained the same all day. Next morning he was decidedly better, able to move his head, but not able to get up because of the giddiness. The pulse was 60. Improvement was then gradual, and three days after the onset of the attack he was able to sit out of bed. He now appears to be convalescent and has had no return of the hay fever.

I am, Sirs, yours faithfully,
South Croydon, June 26th, 1905. A. PERCY ALLAN, M.D. Lond.

THE FARMHOUSE TREATMENT OF TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—I shall be glad of information from your readers as to the existence of hillside, or seaside, or country cottages or farmhouses where tuberculous patients are treated under the care of a resident nurse with occasional visits from the medical man. How does such treatment compare with proper sanatorium treatment? I should like to be put in touch with any such places and the individuals who are in charge of them. What is likely to be the comparative cost of their working? This, of course, I would like to obtain from those responsible for their maintenance. Sanatorium figures I have, as they are abundantly to be got. It is suggested locally to endeavour to deal with tuberculous cases by taking cottages or small houses in the district and running them on the lines suggested by my letter.

I am, Sirs, yours faithfully,
Rochdale, June 21st, 1905. WILLIAM STANWELL, M.R.C.S. Eng.

THE COST OF LIVING IN WEST AFRICA.

To the Editors of THE LANCET.

SIRS,—I shall be much obliged if some medical man lately returned from the West African gold-mines would tell me the cost of living per week inclusive and how long it would take to travel from the coast to the gold-fields. I am, Sirs, yours faithfully,
June 29th, 1905. ST. GEORGE QUEELY, L.R.C.P. Irel.

OLD BOOKS.

M.B. writes:—"If 'R. D.' would instruct the Church Army, Edgware-road, to call for his books they would be taken away gladly, as the Church Army can dispose of them, but the society will not purchase or give anything for them."

◆

Æternum Nefas.—Our correspondent, writing above a pseudonym which shows him to be completely mistaken as to the circumstances, should submit his questions to a medical man. We cannot break our rule of never recommending a practitioner by name, specialist or otherwise, but we may say that any medical man will be able to give him the assistance that he wants.

C. A. M.—We do not think that it is necessary to read special monographs. Our correspondent might read Foster's, *Physiology* in addition to the work which he mentions and we advise him to consult the article entitled "The Students' Library" which appeared in THE LANCET of Sept. 3rd, 1904.

G.P.—Why not apply directly to the principal? It is notorious that medical opinions differ, and there is really not yet enough evidence to warrant a dogmatic answer.

P. Z. Giuseppe.—We regret that we cannot give the information but any medical publisher, certainly any foreign medical publisher, would be able to do so.

Ars.—In our opinion the conditions mentioned by our correspondent should be included.

ERRATUM.—In Dr. H. G. Adamson's paper on the Treatment of Ringworm of the Scalp by Means of the X Rays, published in THE LANCET of June 24th, "four" milliampères on p. 1716, col. i., line 31, should be *0·4* milliampère.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 6th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
June 30	29·69	E.	0·35	69	69	61	62	63	Raining
July 1	29 77	S.W.	0·02	115	76	61	62	62	Raining
" 2	30·01	S.W.	...	121	76	60	61	65	Cloudy
" 3	30 19	W.	...	121	76	60	61	66	Cloudy
" 4	30·19	N.E.	...	97	69	58	60	66	Fine
" 5	30 02	N.E.	0·02	106	74	59	61	65	Cloudy
" 6	30·00	N.	...	122	69	59	60	64	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.).

TUESDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (12th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.) Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.).

THURSDAY (13th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.).

FRIDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P M.). Central London Throat and Ear (2 P.M.).

SATURDAY (15th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.)

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (11th).—SOCIETY FOR THE STUDY OF INEBRIETY (Rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W.).—3.30 P.M. Council Meeting. 4 P.M. Discussion on the Psychology of the Inebriate (opened by Dr. T. C. Shaw).

WEDNESDAY (12th).—THERAPEUTICAL SOCIETY (Royal Botanic Society's Gardens, Regent's Park.)—Garden Meeting to view the Medicinal and Other Plants.

DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M. Meeting.

THURSDAY (13th).—BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Dr. C. Maunsell: (1) A Case of Endothelioma Uteri (illustrated by drawings and microphotographs). (2) An Improved Method of Ventrofixation of the Uterus (illustrated).—Dr. H. Macnaughton-Jones· (1) Note on Cyllin as a Post-operative Antiseptic. (2) Note on a Case of Post-operative Parotitis; (3) Note on a Case of Urethral Cyst.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (10th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr T. C. Fox: Clinique. (Skin.) 5.15 P.M. Mr. T. Walker: Some Recent Methods of Diagnosis in Urinary Surgery.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Robinson: Gynæcology.

TUESDAY (11th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. T. Williams: Clinique. (Medical.) 5 15 P.M. Dr. L. Williams: The Therapeutics of Some Common Ailments.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. S. Taylor: Cerebral Hæmorrhage.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Mr. M. Gunn: Optic Neuritis.

WEDNESDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Berry: Clinique. (Surgical.) 5.15 P.M. Dr. J. Fawcett: Cancer of the Stomach.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Robert Jones: Prognosis in Mental Disease.

THURSDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5 15 P.M. Dr. D. Sommerville: Errors of Digestion in Relation to Disease.

POST GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.) 5 P.M. Mr. Baldwin: Practical Surgery.

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture:—Mr Ballance: Demonstration on Surgical Cases.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture:—Mr. H. Barwell: The Diagnosis of Tuberculous Laryngitis in its Early Stage. Post-Graduate Course.)

FRIDAY (14th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. H. W. Dodd: Clinique. (Eye.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. S. Taylor: Diagnosis in Lesions of the Spinal Cord.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1905, which was completed with the issue of June 24th, and the Title-page to the Volume, were given in THE LANCET of July 1st.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1905 are now ready. Bound in cloth, gilt lettered, price 18*s*., carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s*., by post 2*s*. 3*d*.

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them! Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

During the week marked copies of the following newspapers have been received:- *Western Mail (Cardiff), Herefordshire Mercury, St. Helens News and Advertiser, Westminster Hospital Gazette, Nursing Times, Mercy and Truth, Dublin Weekly Times, Liverpool Post and Mercury, Westminster Gazette, Yorkshire Mercury, Manchester Chronicle, Daily Chronicle, Irish Times, Morning Leader, Surrey Advertiser, Literary Digest (New York), Scientific American, Daily News, Australasian Medical Gazette, &c.*

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SYMPTOMS FOLLOWING THE INHALATION OF POLLANTIN.

To the Editors of THE LANCET.

SIRS,—A patient of mine purchased a tube of pollantin at a chemist's shop and started self-medication. The following are the notes of the case, which I hope you will publish in order to elicit further communications and to see if similar results have been observed by others. Or may we conclude that the symptoms in my patient could possibly be accounted for otherwise? A middle-aged gentleman had suffered for years from hay fever. He had never had attacks of giddiness. Hearing of the benefit a friend had obtained by using pollantin he determined to try it. On June 12th he started at 7 P.M. inhaling up his nostrils the quantity advised in the prospectus. At 10.30 P.M. he took a second inhalation and retired to bed. Next morning at 5.30 he awoke feeling very giddy and noticing a buzzing in the ears. The least movement of the head caused vertigo. The hay fever was checked, he said, but the feeling of giddiness was "horrible." He also noticed a dull, curious, aching feeling at the back of the head. Making an effort he dressed and later went to London. The symptoms persisted on and off all day. Coming home at 6 P.M. he stooped to pat his dog and then the vertigo became intense and he vomited. I saw him at 9 P.M.; he was on his back in bed, afraid to turn his head, and was complaining greatly of pain in the occipital region. His face looked pinched and cyanosed; his pulse was 48. The feeling of sickness passed off gradually. On the next morning I found that he had had a good night; the tinnitus had gone but he was still unable to move his head on account of the vertigo thus caused. The pulse was 54. His condition remained the same all day. Next morning he was decidedly better, able to move his head, but not able to get up because of the giddiness. The pulse was 60. Improvement was then gradual, and three days after the onset of the attack he was able to sit out of bed. He now appears to be convalescent and has had no return of the hay fever.

I am, Sirs, yours faithfully,

South Croydon, June 26th, 1905. A. PERCY ALLAN, M.D. Lond.

THE FARMHOUSE TREATMENT OF TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—I shall be glad of information from your readers as to the existence of hillside, or seaside, or country cottages or farmhouses where tuberculous patients are treated under the care of a resident nurse with occasional visits from the medical man. How does such treatment compare with proper sanatorium treatment? I should like to be put in touch with any such places and the individuals who are in charge of them. What is likely to be the comparative cost of their working? This, of course, I would like to obtain from those responsible for their maintenance. Sanatorium figures I have, as they are abundantly to be got. It is suggested locally to endeavour to deal with tuberculous cases by taking cottages or small houses in the district and running them on the lines suggested by my letter.

I am, Sirs, yours faithfully,

Rochdale, June 21st, 1905. WILLIAM STANWELL, M.R.C.S. Eng.

THE COST OF LIVING IN WEST AFRICA.

To the Editors of THE LANCET.

SIRS,—I shall be much obliged if some medical man lately returned from the West African gold-mines would tell me the cost of living per week inclusive and how long it would take to travel from the coast to the gold-fields. I am, Sirs, yours faithfully,

June 29th, 1905. ST. GEORGE QUEELY, L.R.C.P. Irel.

OLD BOOKS.

M.B. writes:—"If 'R. D.' would instruct the Church Army, Edgware-road, to call for his books they would be taken away gladly, as the Church Army can dispose of them, but the society will not purchase or give anything for them."

◆

Æternum Nefas.—Our correspondent, writing above a pseudonym which shows him to be completely mistaken as to the circumstances, should submit his questions to a medical man. We cannot break our rule of never recommending a practitioner by name, specialist or otherwise, but we may say that any medical man will be able to give him the assistance that he wants.

C. A. M.—We do not think that it is necessary to read special monographs. Our correspondent might read Foster's Physiology in addition to the work which he mentions and we advise him to consult the article entitled "The Students' Library" which appeared in THE LANCET of Sept. 3rd, 1904.

G.P.—Why not apply directly to the principal? It is notorious that medical opinions differ, and there is really not yet enough evidence to warrant a dogmatic answer.

P. Z. Giuseppe.—We regret that we cannot give the information but any medical publisher, certainly any foreign medical publisher, would be able to do so.

Ars.—In our opinion the conditions mentioned by our correspondent should be included.

ERRATUM.—In Dr. H. G. Adamson's paper on the Treatment of Ringworm of the Scalp by Means of the X Rays, published in THE LANCET of June 24th, "four" milliampères on p. 1716, col. i., line 31, should be *0·4* milliampère.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 6th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
June 30	29·69	E.	0·35	69	69	61	62	63	Raining
July 1	29 77	S.W.	0 02	115	76	61	62	62	Raining
" 2	30·01	S.W.	...	121	76	60	61	65	Cloudy
" 3	30 19	W.	...	121	76	60	61	66	Cloudy
" 4	30·19	N.E.	...	97	69	58	60	66	Fine
" 5	30 02	N.E.	0·02	106	74	59	61	65	Cloudy
" 6	30·00	N.	...	122	69	59	60	64	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.) Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.)

TUESDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (12th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.) Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.).

THURSDAY (13th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.)

FRIDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (15th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.). Throat, Golden square (9.30 A.M.), Guy's (1.30 P.M.)

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (11th).—SOCIETY FOR THE STUDY OF INEBRIETY (Rooms of the Medical Society of London, 11, Chandos street, Cavendish-square, W.).—3.30 P.M. Council Meeting 4 P.M. Discussion on the Psychology of the Inebriate (opened by Dr. T. C Shaw).

WEDNESDAY (12th).—THERAPEUTICAL SOCIETY (Royal Botanic Society's Gardens, Regent's Park.)—Garden Meeting to view the Medicinal and Other Plants.

DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.)—5.15 P.M. Meeting

THURSDAY (13th).—BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.)—8 P.M. Dr. C. Maunsell (1) A Case of Endothelioma Uteri (illustrated by drawings and microphotographs). (2) An Improved Method of Ventrofixation of the Uterus (illustrated).—Dr. H. Macnaughton-Jones (1) Note on Cyllin as a Post-operative Antiseptic. (2) Note on a Case of Post-operative Parotitis, (3) Note on a Case of Urethral Cyst.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (10th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr T. C. Fox: Clinique. (Skin.) 5.15 P.M. Mr. T. Walker. Some Recent Methods of Diagnosis in Urinary Surgery.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.)—5 P.M. Dr. Robinson. Gynæcology.

TUESDAY (11th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. T. Williams. Clinique. (Medical.) 5.15 P.M. Dr. L. Williams: The Therapeutics of Some Common Ailments.

POST GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.)—5 P.M. Dr S. Taylor Cerebral Hæmorrhage.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Mr. M. Gunn. Optic Neuritis.

WEDNESDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Berry: Clinique. (Surgical.) 5.15 P.M. Dr. J. Fawcett. Cancer of the Stomach.

POST GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr Robert Jones Prognosis in Mental Disease.

THURSDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Dr. D. Sommerville. Errors of Digestion in Relation to Disease.

POST GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.) 5 P.M. Mr Baldwin. Practical Surgery.

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture—Mr Ballance Demonstration on Surgical Cases.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture—Mr. H. Barwell: The Diagnosis of Tuberculous Laryngitis in its Early Stage. Post-Graduate Course.)

FRIDAY (14th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Mr. H. W. Dodd. Clinique. (Eye.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. S. Taylor. Diagnosis in Lesions of the Spinal Cord.

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Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

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THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1905, which was completed with the issue of June 24th, and the Title-page to the Volume, were given in THE LANCET of July 1st.

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A Lecture

ON

TRACHEAL INJECTION: ITS SIMPLIFICATION AND ITS USE IN PULMONARY TUBERCULOSIS.

Delivered in English at the Hôtel Dieu in Paris on May 12th, 1905,

BY DR. MENDEL,

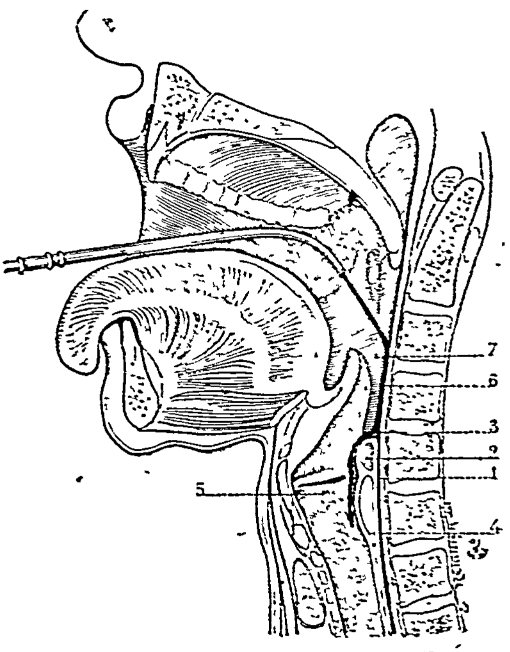
ANCIEN INTERNE DES HOPITAUX DE PARIS.

GENTLEMEN,—I wish to bring to your notice in a few words a therapeutic method which may be conveniently designated tracheal injection. It is not entirely new, as it was first practised in 1887, but it is, nevertheless, comparatively new, for it is even now nearly unknown to medical men in general. The injection of medicated liquids into the air passages was originated by Dr. Albert Jobson Beehag of Edinburgh and was also employed nearly at the same time by a German, Dr. Rosenberg of Berlin. The two were laryngologists and they performed this little operation by introducing the tube of the syringe into the larynx under the guidance of the laryngoscopic mirror. In this way they injected some drops of olive oil containing menthol: their aim was to diminish the pain caused by tuberculous laryngitis, but they were soon able to see that this injection, repeated every day, had also good results on the cough, the expectoration, and the respiration of the consumptive patient, and they advised the use of this method in pulmonary tuberculosis without laryngitis. It was accordingly employed by a few practitioners in different countries who all declared that they were very satisfied with it. The method, however, attracted little attention and remained almost entirely unknown except to the laryngologists, some of whom employed it in rare cases.

There were two principal reasons for this want of success. In the first place the injections were not easy to give, being in reality an endolaryngeal operation which could only be performed by a specially trained laryngologist. Moreover, as laryngologists do not usually treat pulmonary tuberculosis this therapeutic method was hardly ever used in the cases where it would have been most beneficial. The second cause of the non-success of this method was what might be called the prejudice against manipulative interference with the trachea. In fact, physiologists and medical men believed that the laryngo-tracheal tube was extremely sensitive and intolerant of foreign bodies and that injecting anything into it must necessarily produce coughing and suffocation. Here it is interesting to remark that laryngological practice confirmed this error, as the laryngologists injected into the air passages irritating liquids, such as menthol and creasote, which almost always made the patient cough violently, and they attributed to tracheal sensibility an effect which was really caused by the irritant properties of the medicines employed. I will give you two instances of this error of the laryngologists. A very distinguished laryngologist said to me some time ago, "At my hospital when I make one of my pupils give a tracheal injection I need not look at the operation. If I hear the patient coughing I think that the injection has been correctly performed; if not, the liquid has been wrongly injected and finally swallowed by the patient." This laryngologist was kind enough to be present at one of my demonstrations and was able to see that if the patient coughs after an injection the reason is that the liquid injected is irritating, and that after a non-irritating injection (pure olive oil or weak medicated solutions) the patient never coughs. Another well-known laryngologist told me that he never performed any tracheal injections, as he feared making the patient cough and choke.

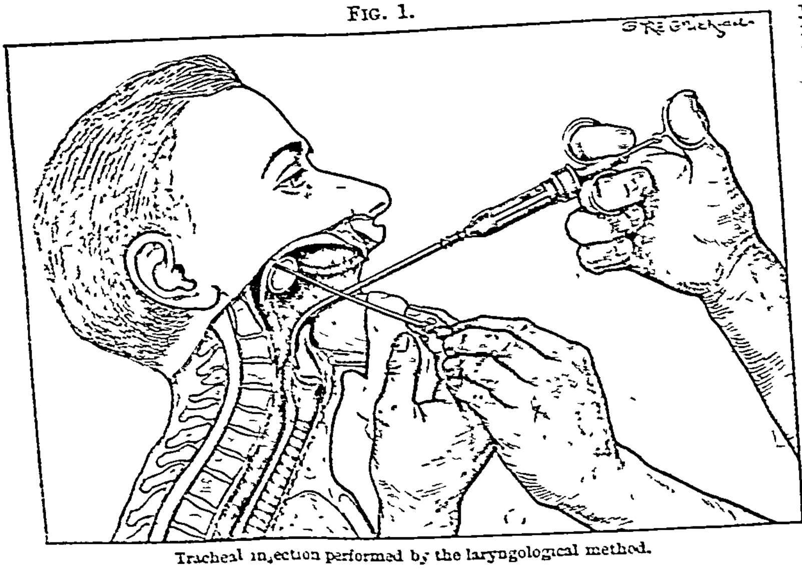
Such were the reasons which have hitherto caused tracheal injection to remain unknown to, and unemployed by, medical men, but the case is quite altered now, for after many researches and experiments I have proved (1) that the manipulations required for tracheal injection can be sufficiently simplified to be performed by any medical practitioner without any special laryngological training; and (2) that the introduction of non-irritating liquids into the air passages never causes any reflex, any coughing, or any suffocation. I have been able to simplify the technique of tracheal injection in accordance with the following observation. If the tongue of the patient is protruded and held outside the mouth, and

FIG. 2.



1. Laryngeal part of the pharynx. 2. Posterior wall of the larynx. 3. True origin of the œsophageal tube. 4. Anatomical origin of the œsophagus. 5. Cavity of the larynx. 6. Posterior wall of the pharynx. 7. Lateral wall of the pharynx.

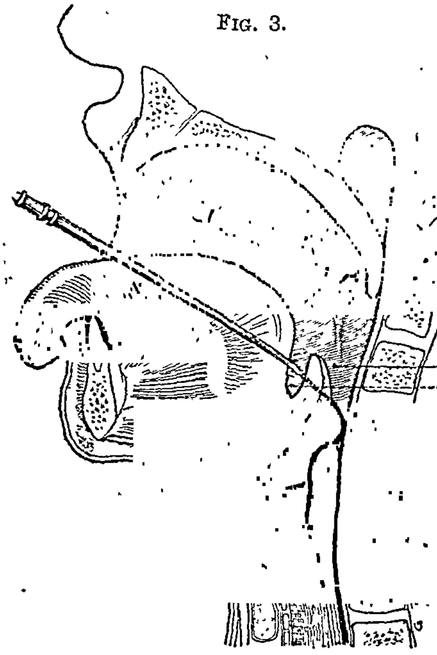
FIG. 1.



Tracheal injection performed by the laryngological method.

if he at the same time refrains from swallowing, the pharynx forms a funnel in which the only inferior outlet is the glottis, for the orifice of the œsophageal tube is closed except during the act of swallowing, so that a small quantity of liquid projected against the wall of the pharynx runs down into the air passages. The experiment is represented in Fig. 2. The experiment will also succeed if the liquid is projected against the lateral wall of the pharynx, as represented in Fig. 3, in which the injection after having been forcibly projected against the inferior part of the lateral wall of the pharynx is shown passing round to reach the posterior wall, whence it runs down into the larynx.

FIG. 3.



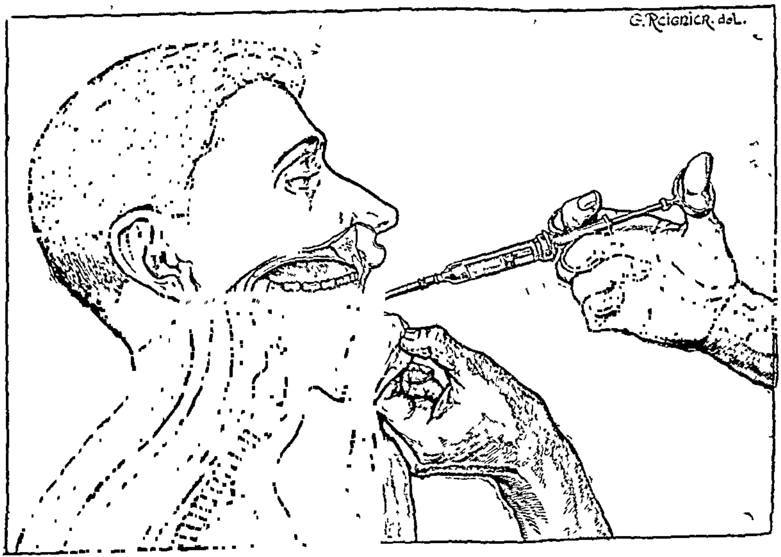
1. Laryngeal part of the pharynx. 2. Posterior wall of the larynx. 3. True origin of the œsophageal tube. 4. Anatomical origin of the œsophagus. 5. Cavity of the larynx. 6. Glosso-epiglottic groove. 7. Posterior wall of the pharynx. 8. Lateral wall of the pharynx.

Guided by these experiments I have devised two modes of injecting. The first method, called the medial method, is a repetition of the first experiment; it is the less used and the less convenient of the two. I therefore prefer describing the second or lateral method, which is the most convenient and which is always employed unless there be special indications to warrant the use of the other.[1]

For the lateral method the only necessary instrument is the syringe which I now show. It is, in fact, Dr. Beehag's syringe with some modifications whereby the tube is shortened and is not screwed on the syringe but is simply adapted and fixed with a sort of ring. The patient must sit opposite a window so that his throat may be sufficiently in the light. The operator usually sits opposite the patient, but if the latter is in bed he can sit up and the operator must stand opposite him. If the injection is given at night a lamp must be used and, if possible, a frontal mirror. On a table near the operator there must be some boiling water to clean the tubes between the injections, some pieces of linen, a glass of water, and a basin, so that the patient may be able to rinse his throat after the injection and to spit out the fluid. The operator with his left hand draws the tip of the patient's tongue outside the mouth, while with his right hand he holds the syringe properly filled (i.e., containing no air) and introduces the tube gently, maintaining the curve in a horizontal position and passing over the lingual surface without touching it. The outside of the curve is then firmly applied to the base of the left faucial column, which is used as a support. The operator exerts a strong outward pressure on this column; by this means he keeps his hand steady when the liquid is projected forcibly, as it must be, otherwise his hand might tremble and the tube might irritate the patient's throat. In this position the tube is fixed like a gun on its carriage, its nozzle rests horizontally in the glosso-epiglottic groove, and the base of the tongue hides it. Its orifice is directed towards the lateral wall of the pharynx. Fig. 4 shows the syringe in this position. The patient remains passive and breathes without effort. The contents of the syringe are discharged with force; in fact, the liquid must be projected against the lateral wall of the pharynx with sufficient force to turn round this wall and thus reach the posterior wall, whence it falls into the larynx.

After the contents of the syringe are ejected the operator must keep the patient's tongue protruded for a few seconds so as to allow the liquid to run down, for the pharynx has the shape of a funnel only when the tongue is protruded and if the tongue resumes its natural position too soon the liquid, or a part of it, instead of running into the larynx is brought back into the mouth and expectorated. Immediately after the injection the patient feels a vague and rather agreeable sensation in his chest. He then spits out the small quantity of liquid that may remain in his pharynx and rinses his throat and mouth. You will now understand how simple and easy tracheal injection is.

FIG. 4.


G. Reignier del.

Tracheal injection; lateral method.

I will in the next place consider what medicines are to be injected. I have said that the early operators used menthol and creasote dissolved in olive oil, but these medicines are irritating and difficult for the patient to take. Instead of these I use non-irritating liquids and I now recommend eucalyptol and gomenol dissolved in olive oil—from 5 to 10 per cent. of the former and from 5 to 50 per cent. of the latter. Many other medicines might be used, as any substance which is not irritating may be injected into the trachea. In the first sitting, however, it is better to begin by injecting a very weak solution so as to ascertain the sensibility of the patient. The tolerance of the trachea is, as a rule, very great but in some exceptional cases the patient cannot take a solution containing more than 1 or 2 per cent. of the active component, otherwise he feels an irritation and may cough, but his coughing is always soothed by the injection of pure olive oil. The treatment by tracheal injection, or more simply, the tracheal treatment, consists of the injection of three consecutive deliveries from a syringe the capacity of which is three cubic centimetres, so that nine cubic centimetres of medicated liquid are injected every day. This treatment is continued for one month, after which it is discontinued but may be resumed as frequently as the condition of the patient requires it.

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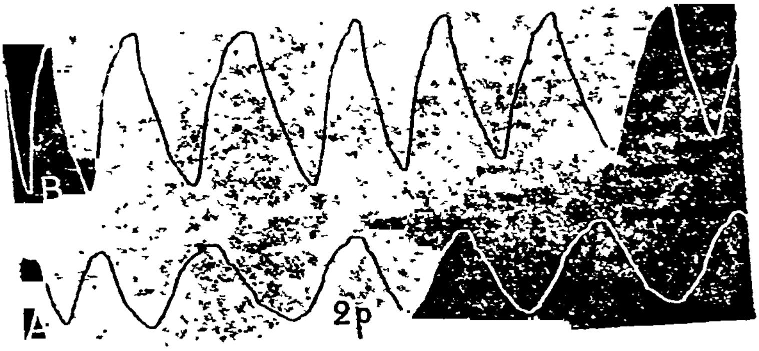
[1] See Traitement de la Tuberculose par la Médication Intra-trachéale. Par Dr. Mendel. Paris: De Rudeval. 1904.

FIG. 5.

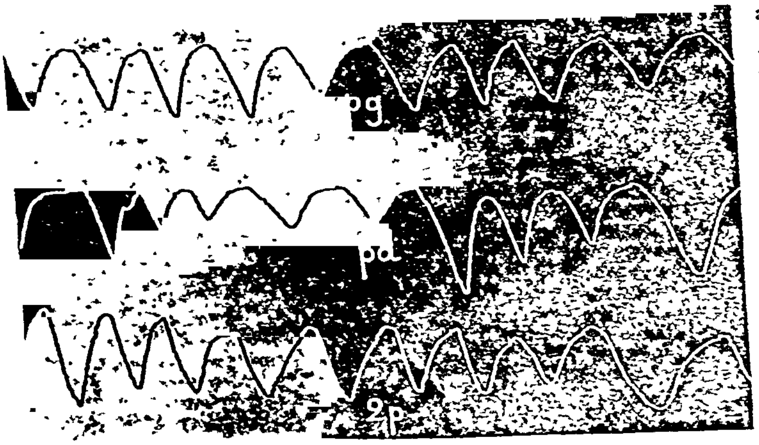


Pneumographic diagram.

Before showing you the method of giving an injection I will consider the clinical results of this treatment, results drawn from the observation of more than 200 patients within seven years. These results are of two classes, general and local.

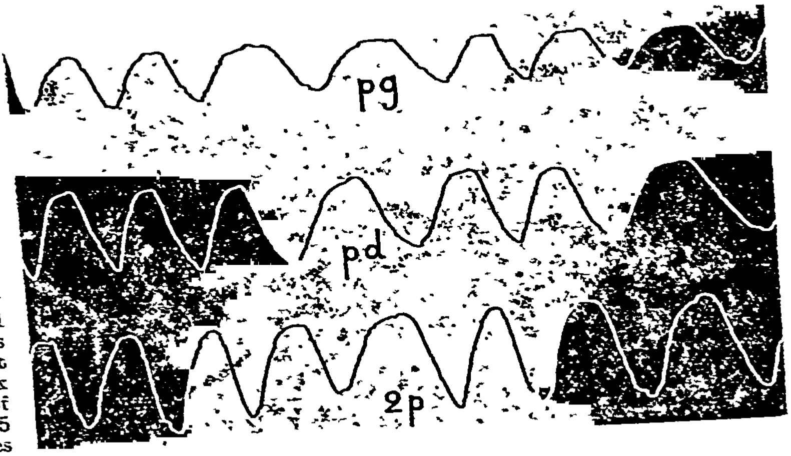
General results.—In the first place, gastric medication being avoided, the patient is not obliged to swallow drugs, which often cause dyspepsia by their action on the gastric mucous membrane. In the next place there is an immediate improvement in the respiration. This result may be considered as characteristic of tracheal treatment. As soon as the essential oil has penetrated into the bronchial tubes it evaporates and the vapour causes a reflex expansion of the lungs or of the parts of the lungs which are able to expand. Fig. 5 is a pneumographic diagram which gives in A a tracing of the respirations of a consumptive patient in the first stage of the disease, the tracing being taken before the first injection. The patient, still wearing the pneumographic belt, then received the injection and his respirations gave the tracing represented in B. It is obvious that the respirations shown in B are at least twice as deep as those shown in A. The patient naturally felt this difference before the pneumograph recorded it. This expansion is always greater in the hour or hours following the injections, but by degrees it becomes permanent, and in favourable cases within a few days the respiration is quite altered. Fig. 6 shows tracings of the respirations of a patient in the first stage of pulmonary tuberculosis with dulness and diminution of the respirations of the right apex. These records were made before the commencement of the tracheal treatment. The tracing *2p* represents the combined respirations of both lungs; *pd* represents the respirations of the right lung, and *pg* those of the left lung. Fig. 7 shows tracings of the respirations of the same patient after eight injections. It will be seen (1) that the respirations, especially those of the right lung—the diseased one—are now increased; (2) that the general expansion is greater; and (3) that the number of respirations per minute is less (17 instead of 22), which proves that every respiration is greater than before the treatment. This action on the respiration is of the utmost importance, for consumptives may be considered as taking in less air than normal individuals and the result of improving their respirations is to give them appetite, increase of weight, and, finally, more vitality.

FIG. 6.



Pneumographic diagram.

FIG. 7.



Pneumographic diagram.

Local results.—I may particularise the three following local results of the tracheal injections—namely, (1) daily "dressing" of the larynx; (2) diminution or cessation of the cough and expectoration; and (3) improvement of the stethoscopic signs. 1. The injection is a veritable cleansing of the larynx, where phlegm too often remains and becomes dry: this is the frequent origin of tuberculous laryngitis, and even in cases of laryngitis the injection is a good remedy. 2. In four-fifths of the observations the gravity of the cough diminishes or ceases, according to the case. At the same time, the expectoration becomes thinner and white and diminishes or even ceases altogether. As for the pyrexia it is rarely affected. In some cases, when pyrexia is caused by the filling of a cavity with phlegm, as the treatment has the effect of emptying this cavity by making the patient expectorate the temperature naturally falls. 3. In half of the cases I have been able to observe: (*a*) Expansion of parts of the lungs which did not expand before; in other words, the respiratory murmur becomes more audible in the apex where it had before been diminished. This result has been already noted by the pneumograph. (*b*) Another stethoscopic result which I have repeatedly observed is that the tracheal treatment checks the abnormal secretion from [illegible] aces, and this result has been [illegible] ution or disappearance of the [illegible], cavernous, or simply dry.

After this short exposition of the tracheal method, which, you perceive, may be used not only in tuberculosis but in any chronic broncho-pulmonary disease, I next proceed to give you some clinical demonstrations of the simplicity and efficacy of the process which I employ. I first show you a patient on whom tracheotomy was performed two years ago for syphilitic laryngitis. I remove the tube from his trachea and I give him a tracheal injection through his mouth by the simplified method. You can see the liquid, which is oil coloured red, running out of the opening in his trachea. Finally, I will give the injection to ordinary patients. You will see that this operation is rapid, simple, and not at all disagreeable to them.

ON THE HOURS OF SLEEP AT PUBLIC SCHOOLS,[1]

BASED ON AN INQUIRY INTO THE ARRANGEMENTS EXISTING IN FORTY OF THE GREAT PUBLIC SCHOOLS IN ENGLAND AND OTHERS IN THE UNITED STATES OF AMERICA.

BY T. D. ACLAND, M.A., M.D. OXON., F.R.C.P. LOND.,
PHYSICIAN TO ST. THOMAS'S HOSPITAL AND CONSULTING PHYSICIAN TO THE HOSPITAL FOR DISEASES OF THE CHEST, BROMPTON.

IT may possibly be asked why one who is not a medical officer to a great public school should take up the question as to the hours of sleep which are desirable for boys at school. The explanation is a simple one. My interest was excited by a particular case and during the inquiries which ensued it seemed to me that it might be no bad thing for an outsider to introduce a discussion on this subject, especially if, like myself, he had no preconceived ideas and no traditions to influence him by casting an enticing and romantic haze over practices which belong to a bygone age but which are in many ways opposed to the more enlightened views of modern hygiene. There cannot be any question that sufficient sleep is a matter not only of importance but of vital necessity to the well-being of all young and growing children, especially at that period when the rapid unfolding of new bodily and intellectual functions makes it more than ever desirable that they should not be subjected to any influence which may retard or prevent the full development of their powers. A physiological question such as the one under consideration, which involves more than a third part of a boy's life, is surely one on which the Medical Officers of Schools' Association may be asked to express an opinion. Judging by some of the correspondence which has lately appeared in the daily press on the subject of our public schools there are still some persons who think that dirt, lack of cubic space, and insufficient food are Spartan conditions which tend to promote hardihood and intelligence, and that cleanliness, good food, ample ventilation, and common-sense regard for health encourage self-indulgence and coddling. Although much has been done to improve the condition of our great schools during the last 25 years it is within the knowledge of us all that there is still room for improvement, especially in matters relating to health. My object to-day is to discuss with you the question as to the amount of sleep which it is desirable to give to the younger boys during the first two or three years of their life at a public school, when they have not yet become acclimatised to their new conditions and when they are subjected to pressure of various kinds such as they have never before experienced, whilst at the same time they have reached a crisis in their lives which necessitates the most watchful care to enable them to attain to the maximum of intellectual and bodily efficiency.

Much is said about over-pressure in schools and all of us must know of cases in which actual breakdown has occurred. I know of many and my belief, which is shared by others who have ample opportunity for observation, is that a part, at any rate, of the harm is done by too little rest being given to the higher nerve centres owing to insufficient or broken sleep. Up to the time when this question first began to interest me I had assumed (as doubtless many have done before) that the hours of sleep in any great school were apportioned on some plan which had been carefully thought out between the medical advisers and the executive, and it came to me as something of a surprise to find that in a school in which the medical officer has for many years strenuously advocated the necessity for giving the boys up to 16 years of age ten hours' sleep a small boy of 13 years was placed in a dormitory in which the prefects' lights were not out and the dormitory was not quiet until 10.30, the boys being roused again at 6.15, giving, in fact, only seven and three-quarter hours of quiet.

It is generally held that an average of about eight hours' sleep is good for adults after they have attained their full development and during the best years of their active work. Some, of course, require less; some few require more. It is largely a matter of idiosyncrasy. There is much practical and some experimental evidence on this point. One distinguished member of our profession, a man of great physical strength, whose intellectual power was recognised by all who knew him, when under the full stress of work often required, and took, ten. Another tells me he cannot do with less than eight and a half and another nine. Eight hours' sleep seems to be a reasonable average for an adult when engaged in active work. It is admitted by all that the growing boy needs more sleep than the adult man. It cannot, therefore, be unreasonable to ask that boys who are just emerging out of childhood, when they are working and playing harder than ever before, should have fuller hours of sleep than those which not unreasonably would be granted to a hard-worked man. "Truth," as Ruskin says, "is not to be discerned by the uneducated senses." A clear perception of what is needed must depend upon previous knowledge and the exercise of trained observation. Those who have the care of growing boys ought not to be satisfied that long hours of work and strenuous play, combined with short hours of sleep, are desirable for them without careful inquiry, nor without taking counsel with those who have opportunity of looking a few years ahead and who are able to scan the horizon of the boy's future life after he shall have reached maturity.

I cannot doubt that the trained experience of the physician, who is able not only to watch the effect of school life upon the boy but also to observe its after-effects, is a safer guide in the ultimate decision of all questions relating to health than that of the layman who has not the technical knowledge and whose observation is mainly limited to the four or five years of the boy's public school life. The consequence of lack of repose to the body and central nervous system may entirely escape the notice even of a careful and experienced master. I have been told that it is not noticeable that the younger boys suffer more from illness than the older ones and that they do not show any ill-effects from lack of rest. To an untrained observer nothing may appear to be wrong, whilst all the time the boy may be working under a strain to his nervous system, which, before many years have passed, may work out its nemesis in some neurosis, such as neurasthenia, chorea, or even epilepsy. We unfortunately know only too well that the first positive evidence of nerve strain may indicate damage, the effect of which will last through life. "The mischief," an expert[2] writes to me, "is that the evil consequences ...... do not always show themselves at once, but are cumulative and come to the surface (often) after the boy has left school." I know of such cases, and there can be few here present who have not seen them; and which of us would like to apportion the blame with confidence between overwork, under-sleep, or idiosyncrasy? Surely, if there is a possibility of risk it is wiser to recognise it and not to subject the boy to any avoidable strain which is as unnecessary as it is contrary to well-known physiological laws.

How fallacious deductions made from a limited point of view or with preconceived ideas may prove to be is shown by the following statement of a lay correspondent who writes: "What you and those who agitate with you for longer hours of sleep are doing is simply to encourage the luxury and self-indulgence which are eating the heart out of our English boyhood and manhood and which show themselves nowhere more than in the matter of oversleeping." This is a serious statement, if it be true, and is deserving of full consideration. I shall refer to it again later, but as bearing upon the question I may mention that in four schools in which both the master and medical officers give their opinion in each case the master states that he does not think the smaller boys in that particular school need more sleep, whilst the medical officer is of opinion that they do. To ascertain the facts as completely as possible I have, through the kindness of many correspondents (to whom I here tender my sincere thanks), obtained the approximate hours of quiet in the dormitories in 40 of the great schools in England and in five of the largest and best schools in America[3] (Tables I. and II.) and I have obtained the opinions of a great number of observers in all parts of the country, especially of those who have written on the subject in standard works. I am thus enabled to lay before you a weighty mass of opinion, gathered from masters and medical officers of schools, physiologists, and physicians. From all quarters comes the same reply: growing boys need from nine to ten hours of sleep, the majority say *ten* should be given to the younger boys—e.g., from 13 to 16 years of age—if the body and central nervous system are to be maintained at their maximum efficiency (see Table IV. (A)). Here and there, but very rarely, a contrary opinion has been expressed but in no case has any defence of short—i.e., less than nine—hours of sleep been made by any medical officer of a school or physician. In the very few cases in which it has been made it has come from a layman who can hardly be fully acquainted with the medical side of the question. The fact is that the unanimity of the replies I have received has caused me some surprise. There has practically been no dissent from the opinion that the younger boys require, and frequently do not get, sufficient rest. If it were not that it seems to be unknown to some and is not acted on by others who have charge of the boys in our great public schools I should not venture to repeat the familiar message but the facts as they exist must be faced.

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[1] A paper read before the Medical Officers of Schools' Association on May 11th, 1905.

[2] Sir James Crichton-Browne, M.D., F.R.S., Lord Chancellor's Visitor in Lunacy, writer of report on "Overpressure in Elementary Schools," printed by the House of Commons; Vice-President, Royal Institution, Great Britain.

There are three main points to be considered: (1) the allowance of sleep which is reasonable for growing boys during the first two or three years of their life at a public school; (2) the risk which is incurred by stinting young growing boys of that amount of sleep for which nature makes an imperative demand; and (3) some of the difficulties in the way of obtaining the needful amount of sleep in many public schools.

I will ask you first to consider the question from the point of view of the physiologist. Professor J. G. McKendrick[4] writes to me: "A young growing lad should have ten hours' sleep both during summer and winter. During the time they are at school and college there can be no doubt that the mental efficiency of boys is kept up to the normal standard by plenty of sleep. I have often noticed a jaded appearance when less sleep was obtained than, say, eight or nine hours, whilst the boy will be bright and alert if he has, say, ten hours. ...... I have known men who were no longer boys who still needed nine hours' sleep if they were to do effective work." Another distinguished physiologist, Professor C. S. Sherrington,[5] writes to me at length, condemning the practice of attempting to run the young boy's life with the same allowance of sleep which he considers necessary for the full-grown adult. He points out that the child's bodily life is run more expensively than the adult's, since bulk increases as the cube and surface as the square the child has, relatively, far more body surface than the adult and has in consequence to produce more body heat to maintain its temperature. This is proved by the fact that the average child gives out about 500 cubic centimetres of CO_2 per kilo of body weight as against 300 given out by the adult. The combustion in the child is more active than when growth has ceased; and further, there is the additional drain caused by growth and the characteristic restlessness of boyhood; from all of which points, which are incontrovertible, he deduces that solely on physiological grounds the body of the child demands a diurnal balance of repose much greater than that which is required in later life—in short, that boyhood wants longer sleep than does set manhood. "During sleep the chemical processes of the body are reduced in the case of CO_2 output to one-fifth, so that the organism during sleep may be said to have its fires banked instead of being run under forced draught. But sleep is not only a respite from chemical change, it is a mechanical rest as well, which is especially of importance during the years of growth. By insufficient rest the growth can be stunted and development retarded. The heart and respiratory mechanism require for their efficient working a diastole (or rest period) equal to their working hours. Most of a boy's growth in stature is done in bed and there mental and physiological recreation goes on most efficiently; without plenty of sleep the activity of the waking day is like a house built on sand—in constant danger of breaking down and giving way." He concludes by saying: "I should put the length of rest in bed demanded 'by small boys'—e.g., boys from 13 to 15 years—at ten hours and their normal hour for retiring

TABLE I.—*Showing the Approximate Hours of Undisturbed Rest in 40 English Public Schools.*

—	Younger boys.		Older boys.		Duration of winter hours.
	Summer.	Winter.	Summer.	Winter.	
1	10½	10½	8½	9½	Same all the year for juniors.
2	10	10¼	9½	9½	Two winter terms, 24 weeks.
3	9¾	10¼	8¾	9½	Not stated.
4	9¾	10	8¼	8½	About 8 weeks.
5	9¾	9¾	8¼	8¾	Same all the year.
6	9¼	9¾	8½	8¾	Not stated.
7	9¼	10 h. 10 m.	8½	9 h. 20 m.	About 14 weeks.
8	9¼	9½	9¼	9½	Not stated.
9	9¼	9¼	8½	8½	Same all the year.
10	9¼	9½	8¾	?	About 9 weeks.
11	9¼	9¼	9¼	9¼	Same all the year.
12	9	10	8	9	24 weeks.
13	9	10	8½	9½	About 8 weeks.
14	9	10	8½	9½	"
15	9	9½	9	9½	24 weeks.
16	9	9½	8½	9	About 15 weeks.
17	9	9	8½	8¼	Same all the year.
18	8¾	8¾	8	8	"
19	8 h. 40 m.	9½	8 h. 40 m	9½	24 weeks.
20	8 h. 40 m.	8 h. 55 m.	8 h. 40 m.	8 h. 55 m.	About 8 weeks.
21	8½	9½	8½	9½	24 weeks.
22	8½	9¼	8½	9¼	"
23	8½	9¼	8½	9¾	"
24	8½	9½	8	9	About 5 weeks.
25	8 h. 25 m.	9¼	8 h. 25 m.	9¼	About 10 weeks.
26	8½	9½	8½	9½	Not stated.
27	8½	9	8	8½	24 weeks.
28	8½	9	7½	8	About 3 weeks.
29	8½	9	8½	9	About 12 weeks.
30	8½	9	8½	9	About 6 weeks.
31	8½	8¾	8½	8¾	Not stated.
32	8½	8½	8	8	Same all the year.
33	8½	8½	8½	8½	"
34	8½	9¼	8½	9¼	A few weeks only.
35	8½	9	8¼	9	About 18 weeks.
36	8¼	9	—	—	24 weeks.
37	8¼	8¾	8¼	8¾	Not stated.
38	8¼	8¼	8¼	8¼	Same all the year.
39	8	9	8	9	A few weeks only.
40	7¾	8¼	7¾	8¼	For some weeks.

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[3] A form of inquiry was sent to all the principal public schools in England and in a large number of instances, where the information was not sufficiently exact, subsequent inquiries were made. I am under a deep debt of obligation to my many correspondents, some of whom I should like to mention by name, were it not for obvious reasons undesirable.

[4] Professor McKendrick, M.D., F.R.S., Professor of Physiology in the University of Glasgow, formerly Fullerian Professor of Physiology, Royal Institution of Great Britain, and writer of the article on Sleep in the "Encyclopædia Britannica."

[5] Professor Sherrington, M.D., F.R.S., Holt Professor of Physiology, University of Liverpool, chairman of the British Association Committee on School Hygiene.

at 9"; and he adds, as is universally admitted, "the wants of all children are not the same—it is a question of idiosyncrasy."

Thus speaks the physiologist in no uncertain terms. In his opinion there are not two sides to this question. I hear it objected, however, that this is all very well but it is pure theory—the speaker has no practical experience of the education of boys and their actual needs. Far from this being the case, Professor Sherrington is not only a distinguished physiologist but he is also the chairman of a committee appointed by the British Association to report on the conditions of health essential to the carrying on of the work of instruction in schools and for some years he has given special attention to the subject.

TABLE II. (A).—*Showing the Hours of Sleep given in Five of the Principal American Schools.*

—	Younger boys.	Older boys.
1	10 and 9¾ according to age.	9½; sixth form 9.
2.	10 winter, 9½ summer.	9½ winter, 9 summer.
3	10 to 9½ under 16 years.	9 from 16 to 18 years.
4	10¼ under 15 years.	9 hrs. 20 min. over 15 years; sixth form 8 hrs. 55 min.
5	10½ to 9 according to age.	Sixth form 8½.

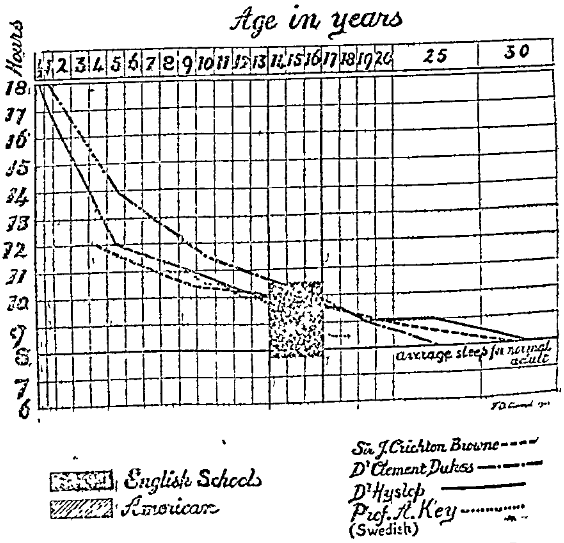
Note.—In none of the above schools is there chapel or school before breakfast at any time during the year.

TABLE II. (B).—*Showing the Hours of Sleep given in Certain Training Ships and Institutions.*

—	Hours of sleep.	Limit of age.
Training ship A	8¾ to 9	Up to 16
" " B	9	" 17
Royal Naval School	9¼	" 15½
Reformatories	8¾ to 9¼	" 16

If the words of the man of science cannot carry conviction let the house master in one of the most celebrated schools in England speak. He writes: "On the general principle of giving boys more sleep I am quite with you and will support any reasonable proposal when made for reform." And, further, the headmaster of one of the best schools in America says: "You will see that we give the boys a good deal more sleep than they have in public schools in England. I was myself at Cheltenham College for five years and I feel convinced that we were not allowed enough time for sleep. At this school boys up to 15 are allowed 10¼ hours; over 15, if not in the sixth, nine hours 20 minutes; sixth form, eight hours 55 minutes." So that in this school more sleep is given to the sixth form boys than in many English schools is allowed to children of 13 and 14. The headmaster of another school (this time an Englishman), who was for 14 years assistant master at one of the great schools, where the hours of quiet in the dormitories are given as eight and a quarter and eight and three-quarters in summer and winter respectively, writes to me: "As to sleep, the fact that I aim at nine [hours] for myself will show you my belief on the subject. In the winter we have no work before breakfast. The bigger boys get nine and a half hours' sleep in the winter, for silence is enacted at 10 P.M. . . . The little boys are in bed at 9, are called at 7.30, and are down at 8, so they get 10½."

To turn to the medical aspect of the case Dr. Clement Dukes, whose writings on school hygiene are widely consulted by all educational authorities, in the address which he gave before the Congress on School Hygiene in February last (1905), said: "If we follow nature, during the years of formation and development adequate sleep must not only be permitted but enforced. When puberty arrives and new functions are being established more sleep still is imperative, as is also the case in cold weather. The long hours of work demanded of the younger children, with the short time allowed for sleep could not be continued if the scheme were in force all the year round, as there would be no children left at the school. The vacations save a complete breakdown." He concludes by saying: "It is both unwise and unnatural to arrange suitable hours of work and sleep for the seniors in schools, to which juniors have to conform with serious injury to their present and their future. According to Dr. Clouston there is a decreasing degree of staying power manifest during the last 30 years (i.e., since the Education Act of 1870) on the part of the brain, to the extent of about 40 per cent. It is a question for us all to consider what share, if any, schools have in this terrible fact with the excessive hours of work in the early years of childhood, and totally inadequate amount of sleep during the same period of life."[6] Dr. T. B. Hyslop, senior physician to Bethlem Royal Hospital and King Edward's Schools (London and Witley), is not less emphatic. "My experience in Bethlem," he says, "tells me that the question of sleep is worthy of our most serious attention. ...... 90 per cent. of the cases admitted to Bethlem since the year 1820 have suffered from insomnia. That one of the essentials of life (as sleep is) should be so prone to be disordered is significant that there is a fault in our economy and this fault seems to arise from the fact that few, if any, of those who have charge of our boys and girls pay any attention to the cultivation of the *habit* of sleep.[7] The stress and strain of modern life necessitates increased brain activity, and in order that the mental energies may last it is obvious that brain rest should be obtained. Insomnia, brain fatigue, neurasthenia, are products of the last few decades and nearly all the cases I have to deal with have histories of overwork and inability to obtain a sufficient amount of rest. Oh! if only the people could be made to understand that the cultivation of the habit of sleep means an investment or insurance against the mental and nervous maladies of the present day. ...... Each decade sees us becoming more brainy, but the alertness of our youths and adolescents is shorter lived and premature degenerations are the almost inevitable outcome of a false economy in the use and abuse of brain power. On several occasions I have spoken about the tendency to later hours and their train of evils, but the people will awaken themselves to the truth only when it is too late. ...... The increase in mental and nervous instability demands a reversal of the engines of education, and I would regard sleep as the best preservation



This chart has been compiled from figures given by Sir J. Crichton-Browne ("Health and the Nervous System," Cassell's Book of Health, p. 296); Dr. Clement Dukes (Health at School, fourth edition, Rivingtons, 1905, p. 130); Professor A. Key* (Handbuch der Schulhygiene Burgerstein und Netolitzky, IIte. Aufl., Jena, 1902, p. 692); from an unpublished diagram by Dr. Hyslop, and from data obtained from the various public schools (cf. Tables I. and II.) In 23 out of the 40 English schools of which I have obtained particulars, the hours of sleep given to the younger boys fall short of the *minimum* for all or part of the year, and even the hours given to the older boys are in many instances insufficient.

* Professor Key allows one hour in the dormitory for rising and going to bed in *addition* to the hours given in his table.

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[6] Sleep in Relation to Education, by Dr. Clement Dukes, physician to Rugby School, author of Health at School. Fourth edition. Rivingtons, 1905.

[7] During the discussion on this paper Dr. G. H. Savage, consulting physician to Guy's Hospital, late medical superintendent to Bethlem Royal Hospital, spoke strongly to the same effect.

against the stress and strain of life and all the incidental conditions which make so many succumb in adult life. I have been some considerable time in making out a chart of the relationship of sleep to age; the reason for the various estimates are based upon deeper considerations than those of temporary expediency (see Chart). ...... I have had charge of 480 children, 11 to 15 years of age, so I have had opportunities of studying the question."

I should like here to call attention to two papers by Dr. Hyslop on "Mental Hygiene in Childhood"[8] and "The National Basis of Education."[9] In these he points out the evils of defective brain rest and he draws attention to the symptoms of what he calls mental indigestion, such as nightmares, night terrors, somnambulism, epilepsy, and even convulsions, and he speaks strongly on the culpable ignorance of those who are responsible for the education of children, inasmuch as they attribute the formidable array of neuroses with which the expert has to deal merely to constitutional defect, whereas, in fact, it is to the system of education rather than to the child that the maladies are due. Ignorance on these points, he concludes, is all the more reprehensible, because it is within the power of those responsible to obtain enlightenment from those who, having had the necessary medical training, are well qualified to advise them.

One of your members, himself a distinguished medical officer of a great public school, writes: "The arrangements which still obtain in many schools under this head (the hours of sleep) are no doubt physiologically wrong and economically unsound. It is obviously unreasonable that the child who, if his parents are at all wise, is allowed his fair allowance of sleep within proper hours, during the holidays at home, should be docked of a substantial part of his physiological income just when the call upon it is greatest, that is at school."

Next let me quote Sir James Crichton-Browne whose work on Over-pressure in Schools is so well known. He writes: "You will be doing a public service by calling attention to the matter and by insisting on the importance of the *vis dormativa* in early years." He adds that he has not the shadow of a doubt that obvious and immediate harm results *from short hours of sleep and is certain that much and very* serious deferred harm may result from them. He continues: "Highly strung, sensitive boys suffer at once from loss of sleep ...... The more stolid and stable boys suffer covertly in slight retardation of brain growth and intelligence, not so obvious but real enough. Sleep is more intimately connected with brain growth than with brain function. In the years of highest cerebral activity in adult life least sleep is required, in the years of low functional activity, but rapid growth, most. ...... I have noted as one of the causes of the physical deterioration that is, I believe, going on, insufficiency and dislocation of sleep. This is a sleepless age and more and more ...... we are turning night into day. The sleep of the rising generation is being seriously interfered with, abbreviated, and broken, and the inevitable consequence must be a rich crop of 'neurotism' and a general lowering of the level of intelligence."

These are strong words coming from a trained observer who has devoted more than 30 years to the study of disorders of the nervous system and who has made a special study of the evil results of over-pressure in schools which has deservedly received wide recognition. 23 years ago he wrote: "From birth when the brain is growing rapidly and when life is almost a continuous sleep, onwards till manhood when brain growth is at an end and when only a third of existence is (or ought to be) given to sleep, the increment of growth progressively diminishes, and *pari passu* with this diminution in growth goes a reduction in the demand for sleep made by the system, so it might perhaps be said that eight hours in the 24 constitute the amount of reparative sleep needed by the full-grown brain and that all sleep beyond that amount prior to maturity is germinal sleep connected with processes of growth and development."[10]

If this is a reasonable statement of the case it follows that to give the adolescent brain a bare eight hours' sleep is to stint the growing boy not only in the time needed for the processes of development and growth but to impair the efficiency of those higher nerve centres on whose well-being the future of the boy's intellectual standard so largely depends. Nothing is more certain than that the improvement of the community turns upon the proper care and management of its children and no temporary success in obtaining scholarships at the universities and other distinctions, which are so often unreasonably accepted as the standard of efficiency of a school, can compensate in any way for the disregard of the plain teachings of physiology as to the relations of work and sleep which must in the long run be obeyed if the mass of ordinary boys are to be turned out fitted in the best way of which they are capable for taking their places as citizens of a great empire. Dr. Welldon, formerly headmaster of Harrow, draws attention in one of his speeches to a fact which had impressed itself upon him—namely, the number of clever brilliant boys he had known who in after life had absolutely disappeared. As Dr. Dukes remarks: "He did not recognise that these boys' immature brain tissue was exhausted before manhood."[11] In these days when athletics count for so much at school it is well to recognise that ample sleep is needed not only to render the brain and nervous system fit for active work but that it is not less necessary to maintain the muscles of an active boy in good sound condition.[12] Those who train men of picked physique for great races know this well and insist (as one of the most celebrated oarsmen of our generation informs me) on a good eight and a half to nine hours' sleep for those in training. These men, wise in their generation, do not see how much the crew can stand, nor run any avoidable risk of tiring them out before the final struggle has begun, a wisdom which it is to be feared is not always to be found in those who have the training of our youth for the great race of life.

TABLE III.—*Synopsis of Hours of Undisturbed Rest given to the Younger Boys in 40 English Public Schools.*

Class.	No. of Schools.	Ample hours.	Moderate hours.	Short hours.
A.	5	9¾ to 10 or more all the year.	—	—
B.	2	9½ to 10 the two winter terms.	9 during the summer term.	—
C.	7	9½ to 10 *for a few weeks only.*	9 to 9½ the chief part of the year.	—
D.	3	—	9 to 9¼ all the year.	—
E.	7	—	9 to 9½ the two winter terms.	8 to 8½ during the summer term.
F.	8	—	9 to 9½ *for a few weeks only.*	8 to 8½ the chief part of the year.
G.	8	—	—	8 to 8¾ or less all the year.

It is interesting to note that there appear to be only five out of the 40 English schools which come up to the highest standard, whilst in all five of the great American schools with which I have been put into communication, through the kindness of Professor W. Osler, the approved hours are given to the younger boys—namely, from nine and a half to ten; and further, four of the headmasters of these schools have expressed the opinion quite emphatically that these hours are desirable for the well-being of the boys. 50 medical experts, medical officers of schools, and others, have expressed a decided opinion that ample hours of sleep are needful for growing boys. Amongst these are included all in this country who (as far as I can ascertain) have written definitely in standard works on the question of sleep: Sir James Crichton-Browne, Dr. Clement Dukes, Professor Bradbury, Dr. Hyslop, Professor McKendrick, *and Professor* Sherrington, and besides these there are many whose names are honoured in English medicine and whose opinions cannot be disregarded on such a question as this. Such are Sir William H. Broadbent, Sir Thomas Barlow, Sir Lauder Brunton, Sir Dyce Duckworth, Professor Clifford Allbutt (Cambridge), Professor Osler (Oxford), Dr. Collier, Dr. Dickinson, Dr. Goodhart, Dr. Savage, Dr. Eustace Smith, besides 15 medical officers of the most celebrated public schools in England. It would be impossible to enumerate all, but the list includes many who have made a special study of diseases of children and disorders of the nervous system as well as those who have specially considered the subject in relation to modern education. 27 have given the number of hours which they consider best; the remainder do not definitely specify the number of hours but speak emphatically in more general terms.

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[8] Clinical Journal, 1904, vol. xxv., No. 8, pp. 113-22.

[9] A paper read before the Beckenham Medical Society, Jan. 13th, 1905, and shortly to be published.

[10] "Education and the Nervous System." In the Book of Health. Cassell and Co. Pp. 293, 294.

[11] "Remedies for the Needless Injury to Children involved in the Present System of School Education." An address delivered before the Incorporated Association of Headmasters at their annual general meeting held in London. Rivingtons, 1899. Pp. 7, 8.

[12] I have received an interesting letter from Mr. C. B. Fry on this point. Although he was at a school where he got nine hours' sleep he writes that he felt that he never had his sleep out and required more than he got; so much did he crave for sleep that often for the first week or so of the holidays he would go to bed about 10 P.M. and sleep till one or two o'clock and sometimes even till five o'clock the next day. He adds that this was not laziness but was absolutely a natural paying of himself back: he felt that he had lived on his capital.

TABLE IV. (A).—*Showing the Hours of Sleep desirable for Growing Boys.*

27 medical officers of schools and other medical experts advise the following hours:—

9 advocate	10 hours.
8 ,,	9½ or 9½ to 10.
6 ,,	9 to 9½ or 9 to 10
4 ,,	9 as a "*minimum*"

Not a single medical expert has advocated less than nine hours.

TABLE IV. (B).—*Summary of Opinions received from Medical Officers of Schools.*

15 are in favour of longer hours. All from schools which give short hours of sleep during all or part of the year.
13 consider the hours of sleep sufficient in their schools.
  In 10 of these schools nine hours or more are given throughout the year.
  In two for part of the year.
  In one only are short hours given throughout the year.
6 replies indefinite.
6 replies not received.

It may, I think, be rightly claimed that there is conclusive evidence to show that both on physiological and medical grounds ample hours of sleep are necessary for the best development of growing boys and that up to 16 years of age from nine and a half to ten hours of undisturbed rest in bed in winter, and from nine to nine and a half in summer, would be in no way excessive. Do they in practice get this amount and if they do not do they feel the strain? The first question may without hesitation be answered in the negative, since although in a limited number of schools some of the small boys may be in their dormitories for the length of time named there is practically no possibility, from one cause or another, of their having anything like this amount of sleep. Hours in dormitory do not, of course, represent hours of sleep, though from some of the replies I have received it would appear that they are reckoned as such. Even the number of hours in bed often do not represent hours of sleep where the boys are in dormitories, unless order is really maintained, as it appears to be in some few schools with good discipline and on the training ships. But in a good many dormitories, besides the talking and "ragging" which goes on, there are other serious disturbances of sleep which efficiently break the rest of all but sound sleepers. Amongst these have to be reckoned not only the turning up of lights when the older boys come to bed (so that although the small boys may get to bed earlier they have the light in their eyes until the older boys are settled) but also the practice of not having the dormitory reasonably darkened, a point which Sir William Gull considered to be of great importance. Thus the hours are not only curtailed by the daylight waking the boys long before it is time for them to rise, but the quality of the sleep obtained is in the case of light sleepers seriously interfered with.

It cannot be questioned that the quality of sleep is influenced by darkness and that to insure the most complete rest to the nervous system it is necessary that sleep should not only be unbroken by noise but also by the exclusion of strong light from the room. It is also important that dormitories and cubicles should be properly warmed and ventilated. Sir James Crichton-Browne writes: "A certain degree of bodily comfort is essential to the good quality of sleep, and quality is almost as important as quantity." These may seem trivial details but they are worthy the attention of those who have the well-being of young boys at heart. There are few blessings given to mankind greater than a capacity for good sound sleep; it makes work easier and more effective and probably more than anything else enables the happy possessor of the faculty to meet the strains which he must encounter in the struggle for existence. It is surely worth while for those who have charge of the young not only to give ample hours of sleep but to see that as far as possible the arrangements are such as to insure that the sleep is not disturbed, as it often is, by preventable or unnecessary causes. Those who have given attention to the subject know the importance of this. "Quality," writes Dr. Hyslop, "is as essential as quantity for the building up the preservative power of sleep." Dr. Savage also lays special stress on this point and it was a favourite maxim of Sir James Paget.

In few schools would it appear that any attempt is made to encourage the *habit* of getting proper sleep; in fact, it seems to be assumed that the less sleep a boy can do with the better it will be for him and the hardier he will become. Such an idea is, I believe, entirely fallacious. It is not much more difficult to educate a boy in good habits than in bad ones, and of the two there can be no kind of doubt that the boy who has acquired the habit of sleeping well will in the long run have greater staying power than he who has not learnt the need for giving his nervous system sufficient rest. One of my correspondents writes: "Happy the man who in the days of his youth has contracted the habit of sound regular sleep. The headmasters should really, I think, offer prizes to the best sleepers."

From all sides I have learned that short hours of sleep *do* often press heavily on the younger boys and are of no possible advantage to them. None are more emphatic on this point than the masters of private schools who keep in touch with the boys after they leave, and especially those who have sons of their own at the public schools, from whom they hear the truth. They are not quite so innocent as one of my correspondents who told me that he did not believe the small boys wanted more sleep because they never complained to the headmaster! In two great schools I am assured that boys are not infrequently taken into the sanatorium, not because they are ill, but because they are tired out. One distinguished member of our profession whom I can remember as a boy at the top of one of our great public schools writes: "As to sleep, I fully agree with you that boys, especially young boys, do not get enough at school. A little boy can honestly sleep the clock round and is all the better for ten hours. I remember that my condition as a little boy at school was one of perpetual want of sleep. I used to go to sleep at all sorts of inconvenient moments through the day in consequence. Another thing is the disturbance of the sleep of little boys by the elder boys coming to bed later. ...... That ought not to be." As showing the importance of what has been written I should like to emphasise the fact that 15 medical officers attached to 12 of the great schools in which the hours of sleep possible for the younger boys are amongst the shortest (Table IV., B) have expressed the opinion that longer hours of sleep are desirable. I have been told by one of the few who have questioned the soundness of my contention that it is clear that the younger boys do not want more sleep because if they are sent to bed early they chatter instead of going to sleep. But that they *do* want more sleep is clear from the fact that they have to be often roused out of deep sleep next morning and dress half asleep in silence (as I have been assured they often do), too weary to show any of that exuberance of spirits which is natural to the healthy boy. If it is a fact that small boys chatter as a rule when they have a chance of going to sleep it would only show that in this, as in other matters, they need education. If in other branches of the school curriculum, as in this question of sleep, the decision as to what was good for them were left entirely to the boys the whole plan of education would, I fear, very speedily be dislocated. Is it not the duty of those responsible for the order in a house to see that after a reasonable time for going to bed has been allowed silence is really enforced?

It is difficult to ascertain the precise hours of sleep which can be obtained in any particular school, since local conditions vary, as, for instance, in one house silence in the dormitories may be really enforced at a given hour, whilst in others no account may be taken of the fact that prefects keep a light, or elder boys cause a disturbance by going to bed long after the normal hour given as that at which the younger boys are settled. It is also clear that the hours of sleep generally adopted at any particular school can be modified by the house masters to some extent. The compilation therefore of such a table as Table I. is one of peculiar difficulty and the hours given must be taken to represent the general rule of the school rather than as applicable to any particular house in that school. I have given in Table I. the hours of sleep allotted to the older boys as well as to the younger ones and it will be seen that they also are often too short.

The general results of my inquiry, after careful sifting of the evidence, reveal some curious facts. In the first place, the hours of quiet which appear to be given to boys from 13 to 15 or 16 seem to range from 7¾ to 10½ in summer and from 8¼ to 10½ in winter. Again, winter hours vary from a few weeks in some schools to 24 weeks—i.e., the two winter terms, in others. There is also a wide diversity in the hours at which the boys are called.

TABLE V. (A).—*Showing Hours at which the Boys are Called in 40 English Public Schools.*

No. of schools.	Hours at which boys are called.
1	6.0 summer term; 6.45 two winter terms.
3	6.15 most of the year; 6.45–7.0 for some weeks.
3	6.30 all the year.
9	6.30 most of the year; 6.45–7.30 for some weeks.
6	6.30 summer term; 7.0–7.30 two winter terms.
1	6.30; not stated whether any difference in winter.
1	6.45 all the year.
3	6.45 most of the year; 7.0–7.30 for some weeks.
1	6.45 summer term; 7.30 two winter terms.
2	7.0 all the year.
1	7.0 most of the year; 7.30 for some weeks.
2	7.0 summer term; 7.15–7.30 two winter terms.
3	7.0; not stated whether any difference in winter.
2	7.15 all the year.
1	7.15; not stated whether any difference in winter.
1	7.30 all the year.

TABLE V. (B).—*Showing Hours at which Boys are Called in Five of the Principal American Schools.*

No. of schools.	Hours at which boys are called.
1	6.50 all the year.
3	7.0 all the year.
1	7.0 in summer; 7.30 in winter.

Some of those who are willing to admit that the hours for sleep given in the schools with which they are connected are too short raise certain objections to increasing them. They point out that there is a difficulty in arranging different hours for boys of different ages. Such an objection cannot be regarded as a serious one, for, after all, what can be done, and is done satisfactorily, in some schools might also be done in others.

The statement to which I have already referred, "that longer hours of sleep would encourage the luxury and self-indulgence which are eating the heart out of our English boyhood and manhood," requires consideration. If it be true, every writer on the subject of sleep in this country, as far as I can trace them, is wrong, since I am unable to find any statement in writings on school hygiene which justifies the giving of as little as eight hours' quiet in the dormitories to the younger boys or which gives any countenance to the belief that nine, nine and a half, or even ten hours is either morally or physiologically bad. Commenting on the statement just quoted the headmaster of a large school writes: "It is strange, indeed, to find anyone so mistaken as to the causes of whatever may be wrong with the upbringing of our youth as to attribute it to over-sleep. One sympathises with him in his fight against a tendency to luxuriousness and general slackness" (as we all do) "but I apprehend that it is a poor weapon to defy nature. We must look elsewhere for the cause." Professor George Darwin of Cambridge writes to me on the subject as follows: "If it is a question of giving up some hours in school, or giving up sleep, I say the former is immeasurably preferable. I ask further whether lack of due sleep is not responsible for much of the prevalent slackness in school, of which there is so much reason to complain." If it can be shown that from nine to nine and a half hours of actual sleep are a physiological necessity for the average boy it can hardly be seriously maintained that it is encouraging sloth to give it. Might it not just as well be argued that to give wholesome and sufficient food is encouraging gluttony, a comforting doctrine to those who do not care to face a difficult problem, but hardly one which is likely to satisfy parents or the boys themselves.

It is an equally unsatisfactory argument that short hours of sleep are a process of selection and lead to the survival of the fittest. This presupposes that the fittest are those who happen to need the least sleep, an wholly fallacious argument, as we all know, since those who are the least affected by a scanty allowance of brain rest during their years of growth are often the dull heavy boys, whilst the keen, sensitive, intelligent boys are the ones to suffer. A master of one of the large public schools and one in which the hours of sleep are comparatively good, writes: "The hours of rest could profitably be somewhat lengthened. …… I am inclined to think that specially in the case of the clever boys this increase of rest would increase the intellectual efficiency." Again, I have been told that to allow boys to lie in bed after the hour of 6.30, which seems specially hallowed by tradition, is to encourage them in habits of idleness. This entirely depends on the hour at which the boys can get to sleep. It is no use burning the candle at both ends. To give a new version of an old proverb:—

> "Late to bed and early to rise,
> Is neither physiological nor wise."

I believe in boys getting up early after a sufficient number of hours of sleep but not before; to allow them in the summer, when they have more play as well as their full allowance of work, to get into the habit of going to bed late is not defensible. The medical officer of a great school which stands comparatively high in this matter of sleep in consequence of the boys having separate rooms calls attention to this and says in summer he thinks the younger boys often do not get sufficient sleep; whilst another says that in his opinion "for a young boy not to be in bed till 10 and up at 6.30 is an unduly strained life." There seems to be a strong feeling that the difficulties of getting the boys to bed early are well-nigh insuperable and that the real solution of the difficulty is the abolition of school, or of chapel and school, before breakfast, even if not in summer, certainly during the two winter terms. There is a considerable body of opinion in favour of this abolition of school or chapel before breakfast. Three eminent physicians who have had special opportunities for arriving at a sound conclusion think the question ought to be faced and from medical officers of seven of the most important schools I have received expressions of opinion that it would be better certainly during the cold weather, if not all the year round, to abandon this practice, which is of doubtful utility, and is open to many objections. The master whose letter I have just quoted says: "I think this addition [to sleep] would be best made in the morning, as if sent to bed too early the boys would not go to sleep but be inclined to play and talk and the net result in rest would probably be diminished rather than increased. Boys, however, sleep quite soundly till late in the morning."

The objection to giving boys a fuller allowance of sleep, which needs most consideration, is the moral one. The headmaster of one of the great public schools which has produced many successful scholars, whilst admitting that many of the younger boys would be the better for more sleep than they get, urges this objection; he says that longer hours would give opportunities for those evil habits which have to be guarded against and which are so rightly dreaded in any community of boys. His argument is that if the boys are tired out when they go to bed and have to be roused from sleep in the morning they will have less temptation to evil. Such an argument I believe to be not only a libel on the average healthy-minded boy but I cannot help thinking it to be unsound, for the reason that no one was ever made moral by being made feeble. I cannot doubt that the only way to combat this evil is to make the boys healthy, active, and vigorous and to deal with the danger straightforwardly from the manly point of view. I would not have touched on the question but that it has been definitely raised in the course of my inquiries and has to be faced. I consulted Sir Constantine Holman on this point.

He has, as many of you know, been treasurer and on the council of a large public school for nearly half a century and has had wide experience in dealing with this problem; he tells me (and allows me to use his name) that physiologically it is quite certain that the younger growing boys need more sleep than those who have arrived at maturity and that an average of eight hours is needed for fully grown men in active work, whilst boys at the critical period of their development need more. He says he considers it absurd to suppose that the mere giving of an ample allowance of sleep would in any way tend to promote immorality; that, as a matter of fact, the difficulties arise at the commencement of the night and not in the morning, when the increase of sleep must be given if at all. He does not believe that with all the opportunities for evil (if the boys are so minded) the question whether they have a sufficient or insufficient amount of sleep can have any bearing whatever on the subject. This is, I believe, the common-sense view of a difficult problem; the danger cannot be avoided by aiming at weakness and repression but only by healthy teaching and inculcating self-control.

There are two other points which I must briefly mention. One is that boys are classified not by age but by place in school, so that the clever little boys, who really require longer rest than others of their age owing to the increased activity of their brains, get the shorter hours allotted to the older boys. The other is that the line between juniors and seniors seems generally to be drawn between 15 and 16 years instead of a year later. Boys up to 16 years of age are still growing and developing rapidly and need all the rest given to younger boys.

I think that I may rightly claim to have shown that in many of our schools this question of sleep has been too little considered and that the hours of sleep given to the younger boys, and I might almost say often to all the boys, are too short, whilst in others, although the needs of the younger boys have been recognised to some extent, the attempts to give them longer rest than the older ones, by sending them to bed earlier in the same dormitories, have failed for various reasons. I have tried to face the difficulties and answer the objections to giving longer hours of sleep and to show that physiology, medicine, and common-sense declare in no uncertain voice that to maintain the maximum intellectual and bodily efficiency of growing boys it is absolutely necessary not to stint their bodies and their nervous systems of rest. It seems to me that the logical conclusion is that the younger boys should be placed in separate dormitories, under effective supervision, or if, as some believe, it is better to have boys of different ages in the same dormitories that quiet should be insured for all, say at 10 P.M., and that during the summer months boys should be called at 7 and during the two winter months at 7.30. By this means from nine to nine and a half hours of quiet could with reasonable certainty be obtained. It may be urged that I am treading on dangerous ground; some may think that an attempt is being made to upset time-honoured traditions. To this I would reply that traditions based upon circumstances of life which have passed away are not necessarily the best guides for dealing with the conditions of to-day and that to respect traditions solely because they have been approved in the past make not for national efficiency but for national decay. The hurry and stress of life in the present day are infinitely greater than they have ever been before and the alarming increase in disorders of the nervous system is attracting the anxious consideration of those who have the best opportunities of estimating its extent. With these facts before us we ought to spare no pains to impress our convictions as to the necessity for carefully regulated hours of rest upon those who are responsible for the health and education of our boys, on whose intellectual efficiency and bodily vigour the future of this country so largely depends. In conclusion, I venture to hope that this Association may take the matter up and may be able to convince those who have the direction of our great schools that the subject of giving the younger boys ample sleep is one which is deserving of their most serious consideration.

Bryanston-square, W.

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THE INFLUENCE OF FRUIT ON THE PRECIPITATION OF THE URIC ACID OF THE URINE.

BY WILLIAM J. SMITH JEROME, M.A. OXON., M.B. LOND.,
LECTURER IN PHARMACOLOGY IN THE UNIVERSITY OF OXFORD.

FEW things perplex a patient more than the contradictory advice as to diet which is liable to be offered to him when consulting more than one medical man for the same ailment. The difference in question is doubtless due to our want of precise knowledge as to the effect of various foods, while this again is traceable, in no small degree, to the sacrifice of time and convenience demanded of those who undertake, or submit to, the experiments necessary for obtaining the desired knowledge. The subject, however, is important, and I hope through some experiments I have been making on myself to throw a little light on one or two of its many obscure points, one object of the work described below being to ascertain if there is a scientific basis for the practice, followed to some extent at any rate, of allowing certain fruits and denying others to those who suffer from uric acid calculus and gravel.

To ascertain the influence of an article of diet in increasing or lessening the tendency of the uric acid to spontaneous precipitation, it is of course necessary to have a means of measuring the precipitability of the acid in a given specimen of urine. If all specimens deposited uric acid on keeping the information could be obtained from a knowledge of the percentage amount of uric acid and the quantity precipitated in a given time under uniform conditions; but many, even acid, urines may be kept for very lengthened periods by means of antiseptics without any separation of their uric acid in a solid form. It is possible, none the less, by a very simple application of the known laws controlling solution and precipitation to obtain an available and satisfactory test.

A solid like uric acid will not be deposited from its solution until its solvent is supersaturated; while supersaturation, on the other hand, may be carried to a considerable extent without the occurrence of precipitation. If, however, ever so small a quantity of free uric acid is present in the solid state in such supersaturated solution, uric acid deposition will begin and continue till supersaturation has given place to saturation, equilibrium being established. The rate of deposition will vary with circumstances and is largely dependent on the surface area presented by the solid, while it is quickened by shaking, stirring, &c. These remarks apply to solutions of free uric acid and His[1] and Klemperer[2] have shown that a part, even as much as 96 per cent., of the uric acid of the urine may be in this condition. Part, however, is combined with base, and this portion will not conform to the rule stated until it has been set free by the addition of some strong acid which in the old phraseology was said to take the base by virtue of its stronger affinity for this, while it is now known that the result is determined by the feebler tendency of the weaker acid (uric) to undergo ionisation. We can, therefore, by adding a strong acid, free any uric acid which is combined with base and, provided that a mere grain of uric acid is present in the solid form, insure the deposition of all that is in solution over and above the point of saturation. But the strong acid serves another purpose—viz., that of lowering the saturation point in accordance with the law that the solubility of an electrolyte is lessened by the addition of another electrolyte which yields an ion in common with it. Besides the free uric acid and that which is combined with base there is a small quantity in the form of organic combination, but as this, for the knowledge of which we are indebted to His,[3] is not thrown down by acids, it does not need consideration in the present connexion.

The above principles are illustrated by the three following experiments, showing that while the rate of uric acid deposition is determined, *ceteris paribus*, by the amount of strong acid added, the quantity thrown down is independent of this, provided always that the acid is in sufficient quantity to liberate the whole of the uric acid which is combined with base and to start the precipitation and that time enough is allowed for the completion of this process. The period necessary is sometimes very long and is shortened by anything which so modifies the precipitation as to increase the surface area presented by a given quantity of uric acid.

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[1] Therapie der Gegenwart, October, 1901.

[2] Verhandlungen des 20ten Congresses fur Innere Medicin, Wiesbaden, 1902.

Experiment A.

1. 50 cubic centimetres filtered afternoon urine, containing 0·0226 gramme uric acid, 1 drop dilute H_2SO_4 (= 6 1 cubic centimetres decinormal). Filtered through small filter after 48 hours. The uric acid, after washing with dilute HCl and then with alcohol was Kjeldahled and its (N) estimated. Amount of uric acid 0·0037 gramme.

2. 50 cubic centimetres of the same urine, 2 drops of the same acid (= 12·2 cubic centimetres decinormal). Uric acid deposit after 48 hours 0·0103 gramme.

3. 50 cubic centimetres of the same urine, 4 drops acid. Uric acid *deposit after 48 hours 0·0134 gramme.*

5 drops of $CHCl_3$ were added to each specimen in this and other experiments and the addition was repeated when considered necessary.

Experiment B.

Dec. 31st, 9 50 A.M.: 50 cubic centimetres urine, 1 drop dilute H_2SO_4 *(= 4·39 cubic centimetres decinormal).*
Feb. 15th, 5.10 P.M.: No deposit of uric acid.

Dec. 31st, 9.50 A.M.: 50 cubic centimetres urine, plus 2 drops acid.
Jan. 2nd, 10 P.M.: No deposit.
Jan. 3rd, 10 A.M.: 3 uric acid crystals.
Jan. 4th, 4.30 P.M.: A few more crystals.
Jan. 11th, 10.20 A.M.: General *deposit of uric acid.*
Feb. 15th, 5.10 P.M.: Filtered. Uric acid 0·0136 gramme.

Dec. 31st, 9.50 A.M.: 50 cubic centimetres urine, plus 3 drops acid. 8 P.M.: no deposit; 10.10 P.M.: *a few crystals of uric* acid.
Jan. 1st, 9.45 A.M.: Deposit increased.
Feb. 15th, 5.35 P.M.: *Filtered. Uric* acid 0·0147 gramme.

Dec. 31st, 9.50 A.M.: 50 cubic centimetres *urine*, plus 15 drops acid; 11.15 A.M.: uric acid precipitation begun.
Feb. 15th, 6.10 P.M.: *Filtered. Uric* acid 0·0130 *gramme.*

The total *quantity* of uric acid in 50 cubic centimetres *of the urine* used in this experiment was 0·0201 gramme.

Experiment C.

Nov. 21st: 100 cubic centimetres urine, plus 1 drop dilute H_2SO_4. 5.35 P.M.: *50 cubic centimetres* of this mixture, 20 cubic centimetres sodium urate solution, made by shaking excess *of salt with* water at *intervals* during 24 hours, filtering, warming the filtrate, and refiltering after the filtrate had cooled.
Nov. 28th: No uric acid deposit. Attacked by bacteria.

Nov. 21st, 5.35 P.M.: 50 cubic centimetres urine, plus 1 drop acid, plus 20 cubic centimetres sodium urate solution. 9 P.M.: No deposit.
Nov. 24th, 10 A.M.: A very slight precipitate of uric acid.
Nov. 26th: Turbid from bacteria.

Nov. 21st, 5.35 P.M.: 50 cubic *centimetres* urine, plus two drops acid, plus 20 cubic centimetres sodium urate solution. 9 P.M.: *Abundant* uric acid deposit.
Dec. 14th, 6.30 P.M.: Filtered. Uric acid = 0·0277 *gramme.*

Nov. 21st, 5.35 P.M.: 50 cubic centimetres urine, plus 3 *drops acid,* plus 20 cubic *centimetres sodium* urate solution. 9 P.M.: Abundant uric acid precipitate.
Dec. 14th, *8.30* P.M.: *Filtered.* Uric acid = 0·0225 gramme.

Nov. 21st, 5.35 P.M.: 50 *cubic* centimetres *urine*, plus 6 drops acid plus 20 cubic centimetres sodium urate solution. 9 A.M.: Abundant *deposit.*
Dec. 14th, 8 P.M.: Filtered. Uric acid = 0·0268 gramme.

Nov. 21st, 5.35 P.M.: 50 cubic centimetres urine, plus 20 *drops acid,* plus 20 cubic centimetres sodium urate solution.
Dec. 15th, 6.30 P.M.: Filtered. Uric acid = 0·0283 gramme.

Of the acid used in this experiment 1 drop = 4·39 cubic centimetres decinormal.

In Experiment A, in which the time allowed for precipitation was 48 hours, the quantity of uric acid thrown down by the addition of four drops of the acid used was nearly four times as great as that precipitated by one drop of the same acid from the same urine.

In Experiment B one drop of the acid employed was not enough to cause precipitation, but two, three, and 15 drops gave, after 46 *days*, practically the same amount of deposit —viz., 0·0136 gramme, 0·0147 gramme, and 0·0130 gramme.

In Experiment C no deposit was produced by half *a drop* at the end of *seven days.* 1 drop caused a precipitate on the third day but the specimen had *to* be thrown away because of the appearance of bacteria in spite of *the* $CHCl_3$ added to it. 2, 3, 6, and 20 drops precipitated each an amount which after 23 days was practically equal—viz., 0·0277 gramme, 0·0285 gramme, 0·0268 gramme, and 0·0283 gramme.

The result would of course appear more striking if larger quantities of urine were used, as the ratio of the inevitable error of observation to the total amount of uric acid precipitated would be thereby reduced, but when the results with small quantities can be readily and clearly interpreted these are to be preferred because of the time saved.

The influence of certain kinds of fruit in favouring or hindering the precipitation of the uric acid was tested on myself by ascertaining the *minimal* amount of added dilute sulphuric acid which sufficed to start precipitation within a given arbitrary time—viz., 48 hours. The urine of the 24 hours was collected at 10 A.M., measured, and diluted with distilled water, in Series 1 to 1500 cubic centimetres and in Series 2 to 2000 cubic centimetres. After careful filtration 50 cubic centimetres were put into each of several similar beakers and 1 drop of dilute H_2SO_4 of a known strength *from a burette and 5 drops of* chloroform added to one, which was at *once shaken to secure immediate mixing* of the acid, 2 drops of acid and 5 of chloroform were added to a second beaker, 3 to a third, and so on. The beakers, covered each by a watch glass, were placed together and examined *from time to time* with a lens. It is, of course, necessary that in any given experiment all the specimens shall be subjected, as far as possible, to the same conditions as to shaking, filtering, smoothness of *surface* of beakers, &c. The total nitrogen was estimated by Kjeldahl's and the uric acid by a slight *modification* of the Ludwig-Salkowski method, and the phosphoric acid by means of uranium acetate. My diet during the first series consisted of *café au lait*, dry toast and butter for breakfast; of *soup*, fish, *poultry or* meat, the latter generally veal, potatoes, and a green vegetable, with *two glasses* of light white Italian wine and a cup of black coffee, for lunch; while in the evening I took *only* a basin of bread-and-milk, followed by either tapioca or bread-and-butter pudding and one tablespoonful of brandy with soda-water. During the second series soup was omitted, red wine in the same quantity was taken instead of white, and in the evening the tablespoonful of brandy was left out. I should have preferred to have adhered always to the same meat and vegetable and to have weighed *the* quantities, but this is difficult in experiments extending over months, and the results prove sufficiently clear under the method adopted.

Series 1.

In Series 1 the fruit and non-fruit periods, each occupying *four days, followed one* another continuously, but in the second series a period lasted five days, the urine on the first day of each period not being examined. The fruits first used were pears, fresh figs, and grapes, and the weights given are *always those of the* pulp taken, apart from rind and seeds, when these were separable. The acid employed in Series 1 was of such strength that 1 drop = 1·9 cubic centimetres decinormal and the quantity of this needed to start precipitation of *uric acid during* the four days of the pear period was 2, 2, 3, and 3 drops respectively; total 10 drops = 19 cubic centimetres decinormal. During the following non-fruit period the amount was 2, 1, 1, and 2 drops; total 6 drops = 11·4 cubic centimetres decinormal. In the *fig* period 2, 1, 3, and 2 drops were needed; total 8 drops = 15·2 cubic centimetres decinormal. In the succeeding non-fruit period 1, 1, 1, and 2 drops; total 5 drops = 9·5 cubic centimetres decinormal. In the grape period 2, 3, 3, and 3 drops; total 11 drops = 20·9 cubic centimetres decinormal.

Non-fruit periods.	Fruit periods.
11·4 c.c. decinormal.	19·0 c.c decinormal.
9·5 ,, ,,	15·2 ,, ,,
	20·9 ,, ,,

There *is* no doubt, therefore, that in each *case* the fruit lessened the tendency to precipitation of the uric acid. In this series the amount of uric acid *was not determined* daily, but an estimation of it was made at the end of each period *in a mixture* of equal parts of the four days' urine. For the two non-fruit periods (Oct. 8th to 11th and 16th to 19th) the *daily mean* was 0·3240 gramme and 0·3360 gramme, while for the fruit periods it was 0·327 gramme (pears), 0·3940 gramme (figs), and 0·4330 gramme (grapes). The total nitrogen, acidity, &c., are given in Table IV.

Series 2.

The acid used for precipitating in this series was rather less strong than that employed previously—viz., 1 drop = 1·2 cubic centimetres decinormal, the amounts needed being:—

Date period ...	1, 2, 3, 3 drops;	total 9 drops	= 10·8 c.c. decinormal.
Non-fruit period	½, ½, ½, 3 ,,	,, 4½ ,,	= 5·2 ,, ,,
Orange ,,	4, 4, 4, 4 ,,	,, 16 ,,	= 19·2 ,, ,,
Non-fruit ,,	1, 1, 2, 2 ,,	,, 6 ,,	= 7·2 ,, ,,

He has, as many of you know, been treasurer and on the council of a large public school for nearly half a century and has had wide experience in dealing with this problem; he tells me (and allows me to use his name) that physiologically it is quite certain that the younger growing boys need more sleep than those who have arrived at maturity and that an average of eight hours is needed for fully grown men in active work, whilst boys at the critical period of their development need more. He says he considers it absurd to suppose that the mere giving of an ample allowance of sleep would in any way tend to promote immorality; that, as a matter of fact, the difficulties arise at the commencement of the night and not in the morning, when the increase of sleep must be given if at all. He does not believe that with all the opportunities for evil (if the boys are so minded) the question whether they have a sufficient or insufficient amount of sleep can have any bearing whatever on the subject. This is, I believe, the common-sense view of a difficult problem; the danger cannot be avoided by aiming at weakness and repression but only by healthy teaching and inculcating self-control.

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To ascertain the influence of an article of diet in increasing or lessening the tendency of the uric acid to spontaneous precipitation, it is of course necessary to have a means of measuring the precipitability of the acid in a given specimen of urine. If all specimens deposited uric acid on keeping the information could be obtained from a knowledge of the percentage amount of uric acid and the quantity precipitated in a given time under uniform conditions; but many, even acid, urines may be kept for very lengthened periods by means of antiseptics without any separation of their uric acid in a solid form. It is possible, none the less, by a very simple application of the known laws controlling solution and precipitation to obtain an available and satisfactory test.

A solid like uric acid will not be deposited from its solution until its solvent is supersaturated; while supersaturation, on the other hand, may be carried to a considerable extent without the occurrence of precipitation. If, however, ever so small a quantity of free uric acid is present in the solid state in such supersaturated solution, uric acid deposition will begin and continue till supersaturation has given place to saturation, equilibrium being established. The rate of deposition will vary with circumstances and is largely dependent on the surface area presented by the solid, while it is quickened by shaking, stirring, &c. These remarks apply to solutions of free uric acid and His[1] and Klemperer[2] have shown that a part, even as much as 96 per cent., of the uric acid of the urine may be in this condition. Part, however, is combined with base, and this portion will not conform to the rule stated until it has been set free by the addition of some strong acid which in the old phraseology was said to take the base by virtue of its stronger affinity for this, while it is now known that the result is determined by the feebler tendency of the weaker acid (uric) to undergo ionisation. We can, therefore, by adding a strong acid, free any uric acid which is combined with base and, provided that a mere grain of uric acid is present in the solid form, insure the deposition of all that is in solution over and above the point of saturation. But the strong acid serves another purpose—viz., that of lowering the saturation point in accordance with the law that the solubility of an electrolyte is lessened by the addition of another electrolyte which yields an ion in common with it. Besides the free uric acid and that which is combined with base there is a small quantity in the form of organic combination, but as this, for the knowledge of which we are indebted to His,[3] is not thrown down by acids, it does not need consideration in the present connexion.

The above principles are illustrated by the three following experiments, showing that while the rate of uric acid deposition is determined, *ceteris paribus*, by the amount of strong acid added, the quantity thrown down is independent five days, the dose being 170 grammes for four days, 150 grammes for 19 days, and again 170 grammes for four more days. The diet in other respects remained as before. The results during the last four days agree with those of the four days of the former experiment (Table II.).

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[1] Therapie der Gegenwart, October, 1901.

[2] Verhandlungen des 20ten Congresses für Innere Medicin, Wiesbaden, 1902.

[3] Loc. cit.

It must be admitted therefore that marmalade does not increase the precipitability of the uric acid of the urine. No other sugar than that in the marmalade was taken during any of these experiments, saccharin being substituted.

In seeking an explanation of the *modus operandi* of the above fruits in diminishing the tendency to precipitation of the uric acid attention is naturally directed to the lessened acidity of the urine. But as the factors influencing uric acid precipitation from this liquid are numerous it seemed desirable to inquire if other changes, as well as that in the reaction of the urine, were operative in the experiments just described. I did not succeed in finding any. It is true that alcohol always caused a greater precipitate in the urine of the fruit periods than in that of the others when this point was tested and that the precipitate of the former periods had a greater solvent power for uric acid than that of the latter. This, however, can be explained by the influence of the altered reaction on the form assumed by the phosphates. The precipitate during all periods contained a diastatic ferment but the activity of this did not seem to be increased by the taking of fruit. As activity and quantity of ferment do not necessarily run parallel it is possible that the latter may have been augmented. The urine, in respect of

TABLE IV.—SHOWING THE GENERAL CONDITION OF THE URINE DURING THE FRUIT AND THE NON-FRUIT PERIODS (SERIES 1).

Period.	Quantity of fruit pulp taken daily.	Date.	Quantity of urine.	Specific gravity of diluted urine.	Total (N) daily output.	Uric acid daily mean.	Total acidity determined by phenol-phthalein.	Total P_2O_5.	P_2O_5 as dihydrogen acid.	Acid needed to start uric acid precipitation in 50 c.c. of diluted urine in 48 hours.	Range of temperature during experiment.
	Grms.		c.c.		Grms.	Grms.	c.c. decinormal.	Grms.	Grms.	c.c. decinormal.	Deg. F.
Pear	676	Oct. 4th.	1148	—	12·22	0·3270	330	2·061	1·042	3 8	65·3 to 70·7
	341	„ 5th.	1079	—	10·64	„	300	1·689	0·922	3 8	
	382	„ 6th.	1345	—	11·10	„	255	1·702	0·792	5 7	
	413	„ 7th.	1493	—	11·42	„	300	1·762	0·928	5·7	
Total	1812	—	5070	—	45 33	—	1185	7·214	3·684	19·0	—
Daily average	453	—	1267	—	11·39	0·3270	296	1·803	0 921	4·75	—
Non-fruit	0	Oct. 8th.	1026	1014	11·19	0·3240	330	1 612	0·924	3·8	62 6 to 68
	„	„ 9th.	1222	1016	12·28	„	330	1·965	1·092	1·9	
	„	„ 10th.	1090	1016	12·72	„	390	2·100	1·270	1·9	
	„	„ 11th.	1033	1017	13·18	„	330	2·325	1·104	3·8	
Total	„	—	4371	—	49·37	—	1380	8·002	4·390	11·4	—
Daily average	0	—	1092	1015	12·34	0·3240	345	2·000	1·097	2·8	—
Fresh fig*	262·0	Oct. 12th.	1937	1014	13 93	0·3940	310	1·888	0·929	3 8	55·4 to 67·1
	193·0	„ 13th.	1423	1018	13·48	„	300	1·843	0·855	1·9	
	204·0	„ 14th.	1571	1018	14·26	„	267	1·806	0·732	5·7	
	284·9	„ 15th.	1583	1016	12·54	„	285	1·780	0·889	3·8	
Total	948·9	—	6514	—	54·21	—	1162	7·317	3·405	15·2	—
Daily average	237·	—	1628	1016	13·55	0 3940	290	1·829	0·851	3·8	—
Non-fruit	0	Oct. 16th.	1162	1017	13·31	0·3360	315	1·920	0·958	1·9	60·8 to 65·3.
	„	„ 17th.	891	1015	13·41	„	321	1·530	0·831	1 9	
	„	„ 18th.	1278	1016	14·48	„	345	1·492	1·062	1·9	
	„	„ 19th.	868	1015	12·44	„	318	1·747	0 859	3 8	
Total	„	—	4199	—	53·64	—	1299	6·689	3 710	9·5	—
Daily average	0	—	1049	1015	13·41	0·3360	324	1·672	0·927	2 37	—
Grapes...	321	Oct. 20th.	1010	1017	13·61	0 4330	300	1·747	0·844	3·8	61 7 to 65·3.
	295	„ 21st.	1366	—	12·03	„	270	1·695	0·828	5·7	
	364	„ 22nd.	1364	1016	12·72	„	238	1·845	0 709	5·7	
	447	„ 23rd.	1407	1016	12·26	„	256	1·605	0·712	5 7	
Total	1427	—	5147	—	50·62	—	1064	6·890	3·093	20 9	—
Daily average	356·7	—	1286·7	—	12·65	0·4330	266	1·722	0·773	5·22	—

* It is to be noted that on three days of this period the urine exceeded 1500 cubic centimetres. This would be compensated in greater or less degree by the excretion of a larger quantity of uric acid in this than in any other period except the last.

The quantity of uric acid in 50 cubic centimetres of urine was :—

	Gramme.	Gramme.	Gramme.	Gramme.
Date period	0 0109	0 0100	0 0107	0 0100
Non-fruit period ...	0 0107	0 0107	0 0121	0 0116
Orange „ ...	0 0103	0 0107	0 0115	0 0116
Non-fruit „ ...	0 0100	0 0105	0 0091	0 0083

The daily average of uric acid was thus: 0·0104 gramme, 0 0112 gramme, 0 0110 gramme, and 0 0094 gramme for the four periods respectively and if the amount in the first non-fruit period is a little greater than that in the preceding and following periods and might be expected, therefore, to need somewhat less acid for precipitation, the quantity in the second non-fruit period is less than in any other period, though the total quantity of acid required to cause precipitation was only 7·2 cubic centimetres decinormal, against 10·8 cubic centimetres and 19·2 cubic centimetres in the two fruit periods. We have, therefore, clear proof that dates and oranges act like pears, fresh figs, and grapes in hindering the precipitation of the uric acid of the urine when taken in the quantities used in these experiments.

I tried next the effect of marmalade made with equal weights of sugar and oranges. The quantity taken daily was 172 grammes, 179 grammes, 170 grammes, and 185 grammes, the diet being in other respects unchanged. The acid used for precipitating was of the same strength as the last. The amounts of uric acid in 50 cubic centimetres of urine of the several days were 0·0084 gramme, 0·0085 gramme, 0·0086 gramme, and 0·0082 gramme, with a daily average of 0·0084 gramme. This is distinctly below that of any other period and a larger quantity of acid would therefore, other things being equal, be required to start the precipitation. The actual amounts needed were two, two, three, and three drops. Total, 12 cubic centimetres decinormal, against 19·2 cubic centimetres decinormal when oranges were taken. But the total amount of orange pulp consumed in the orange period was 1254 grammes, against 706 grammes marmalade and only half of this consisted of orange—viz., pulp *plus* rind. When, however, the natural acidity and the percentage of uric acid agreed in the marmalade and in the non-fruit periods a similar correspondence existed between the quantities of acid needed for precipitating (Table I.).

The difference between 2·4 cubic centimetres and 3·6 cubic centimetres is, indeed, 50 per cent. of the former, but it must be remembered that this difference corresponds to one drop only of the acid and if the experiment had been made more delicate by using a more diluted acid for precipitating the numbers would have approximated even more closely to each other. It would appear, then, either that the quantity of orange pulp contained in the marmalade taken was not sufficient to exercise a distinct influence in lessening the precipitability of the uric acid or that such influence was counteracted by that of the sugar mixed with it. On the other hand, there is no sign that the marmalade favoured the precipitation of the uric acid. Lest sugar should be capable of acting injuriously when taken for a longer period I continued the marmalade for 27 days, with an interruption of

TABLE I.

—	Uric acid in 50 c.c. of urine (grammes)	Natural acidity; c c decinormal in 50 c c of urine.	Acid needed for *starting precipitation* within 48 hours in 50 c.c of urine.
Non-fruit period (March 11th).	0 0083	7 65	3 6 c c. decinormal (3 drops).
Marmalade period (March 13th)	0 0084	8 1	2 4 c.c. decinormal (2 drops)
Marmalade period (March 14th).	0 0085	8·45	2 4 c c. decinormal (2 drops)
Marmalade period (March 15th).	0 0086	7 95	3 6 c c. decinormal (3 drops).
Marmalade period (March 16th).	0 0082	7 7	3 6 c c. decinormal (3 drops).

TABLE II.

First Experiment.

Acidity of urine determined by phenolphthalein, cubic centimetres decinormal.	Total urine; cubic centimetres.	Acid needed for starting precipitation in 50 cubic centimetres urine within 48 hours 1 drop = 1·2 *cubic centimetres* decinormal.
324	945	2 drops = 2 4 c c decinormal
338	974	2 „ = 2 4 „ „
318	1679	3 „ = 3 6 „ „
308	1097	3 „ = 3 6 „ „
Total .. 1288	4695	10 12 0
Daily average, 322	1173	2 5 3 0
	Second Experiment.	
312	1196	1 drop = 2 2 c c. decinormal
294	1311	2 drops = 4 4 „ „
338	1504	1 drop = 2 2 „ „
274	1371	2 drops = 4 4 „ „
Total ... 1218	5382	6 13 2
Daily average, 304	1345	1 5 3 3

TABLE III.—SHOWING THE ACIDITY OF THE URINE WHEN PRECIPITATION BEGAN.

Period.	Uric acid in 50 c c. of urine (grm.).	*Acidity in c c.* decinormal.	Period	Uric acid in 50 c c. of urine (grm.)	Acidity in c c decinormal
Marmalade (March 12th-13th)	0 0084	Natural ... 8 1 Added .. 2 4 Total ... 10 5	Non fruit (March 10th-11th)	0 0083	Natural 7 65 Added 2 4 Total 10 05
Orange („ 3rd-4th)	0 0107	Natural ... 6 25 Added 4 8 Total . . 11 05	„ („ 8th-9th) ...	0 0105	Natural . 9 4 Added 1 2 Total 10 6
„ („ 3rd-4th)	0 0107	Natural ... 6 25 Added .. 4 8 Total .. 11 05	„ (Feb. 25th-27th) ..	0 0107	Natural 9 6 Added 0 6 Total 10 2
„ („ 4th-6th)	0 0115	Natural .. 6 3 Added .. 4 8 Total 11 1	„ („ 28th-March 1st)	0·0116	Natural 7 5 Added . 3 6 Total 11 1
Date (Feb 22nd-23rd)	0 0107	Natural .. 7 1 Added . 3 6 Total ... 10 7	„ („ 25th-27th) . .	0 0107	Natural .. 9 6 Added ... 0 6 Total . 10 2
„ („ 21st-22nd)	0 0100	Natural .. 9 2 Added 2 4 Total 11 6	„ (March 7th-8th) .	0 0100	Natural . . 9 0 Added 1 2 Total . . 10 2

March 3rd, 7.30 P.M.: 50 c.c. of same mixture. 2 drops acid.	March 3rd, 7.30 P.M.: 50 c.c. of same mixture. 2 drops acid.
March 6th, 8.30 P.M.: A few scattered crystals.	
March 13th, 8 P.M.: Crystals enlarging. No general deposit.	
March 22nd, 10 A.M.: Crystals enlarging. No general deposit.	March 22nd, 10 A.M.: No deposit.
March 3rd, 7.30 P.M.: 50 c.c. of same mixture + 3 drops acid.	March 3rd, 7.30 P.M.: 50 c.c. of same mixture + 3 drops acid.
March 4th, 10 A.M.: Uric acid deposit doubtful.	March 4th, 10 A.M.: Deposit doubtful.
March 4th, 4.30 P.M.: Uric acid deposit distinct.	March 4th, 4.30 P.M.: Deposit distinct.
March 3rd, 7.30 P.M.: 50 c.c. of same mixture + 4 drops acid.	March 3rd, 7.30 P.M.: 50 c.c. of same mixture + 4 drops acid.
March 4th, 10 A.M.: General uric acid deposit.	March 4th, 10 A.M.: General deposit.

C. (Non-fruit period), more acid urine.	D. (Date period), less acid urine.
March 4th: 220 c.c. urine (Feb. 25th to 27th), 11 c.c. water. 7.10 P.M., 50 c.c. of mixture + 1 drop acid.	March 4th: 220 c.c. urine (Feb. 22nd to 23rd), 11 c.c. decinormal H_2SO_4. 7.10 P.M.: 50 c.c. of mixture + 1 drop acid.
March 5th, 10 A.M.: Uric acid deposition begun.	March 5th, 10 A.M.: Uric acid deposit but apparently rather less abundant than in corresponding specimen of Feb. 25th to 27th.
March 4th, 7.10 P.M.: 50 c.c. of mixture + 2 drops acid.	March 4th, 7.10 P.M.: 50 c.c. of mixture + 2 drops acid.
March 5th, 10 A.M.: General uric acid deposit.	March 5th, 10 A.M.: deposit general.
March 4th, 7.10 P.M.: 50 c.c. of mixture + 3 drops acid.	March 4th, 7.10 P.M.: 50 c.c. of mixture + 3 drops acid.
March 5th, 10 A.M.: Uric acid deposit abundant.	March 5th, 10 A.M.: deposit abundant.
March 4th, 7.10 P.M.: 50 c.c. of mixture + 4 drops acid. 8.30 P.M.: Distinct uric acid deposit.	March 4th, 7.10 P.M.: 50 c.c. of mixture + 4 drops acid. 8.30 P.M.: Deposition begun but amount seems rather less than in urine of Feb. 25th to 27th.

Experiment 3.

A. (Non-fruit period), more acid urine.	B. (Orange period), less acid urine.
April 16th: 220 c.c. urine (Feb. 28th to March 1st), 6 c.c. *NaOH* decinormal. 9.15 P.M.: 50 c.c. of mixture, 1 drop acid.	April 16th: 220 c.c. urine (March 4th to 6th), 6 c.c. water. 9.15 P.M.: 50 c.c. of mixture, 1 drop acid.
April 20th, 9.15 P.M.: No deposit of uric acid.	April 20th, 9.15 P.M.. No deposit of uric acid.
April 16th, 9.15 P.M.: 50 c.c. of mixture + 2 drops acid.	April 16th, 9.15 P.M.: 50 c.c. of mixture + 2 drops acid.
April 20th, 9.15 P.M.: No uric acid deposit.	April 20th, 9.15 P.M.: No deposit.
April 16th, 9.15 P.M.: 50 c.c. of mixture + 3 drops acid.	April 16th, 9.15 P.M.: 50 c.c. of mixture + 3 drops acid.
	April 17th, 5.15 P.M.: A uric acid crystal here and there.
April 19th: No deposit. One drop more acid added.	April 19th: One drop more acid.
April 20th, 9.15 P.M.: Four uric acid crystals.	April 20th, 9.15 P.M.: Crystals larger; few, if any, fresh ones.

C. (Orange period), less acid urine.	D. (Non-fruit period), more acid urine.
April 16th: 220 c.c. urine (March 4th–6th) 6 c.c. H_2SO_4 decinormal.	April 16th: 220 c.c. urine (Feb. 28th to March 1st), 6 c.c. water.
April 16th, 9.15 P.M.: 50 c.c. of mixture + 1 drop acid.	April 16th, 9.15 P.M.: 50 c.c. of mixture + 1 drop acid.
April 20th, 9.15 P.M.: No uric acid deposit.	April 20th, 9.15 P.M.: No uric acid deposit.
April 16th, 9.15 P.M.: 50 c.c. of mixture + 2 drops acid.	April 16th, 9.15 P.M.· 50 c.c. of mixture + 2 drops acid.
April 18th, 5.15 P.M.: 3 uric acid crystals.	April 18th, 5.15 P.M.: 1 crystal.
April 20th, 9.15 P.M.: 7 uric acid crystals.	April 20th, 9.15 P.M.: 2 crystals.
April 16th, 9.15 P.M.: 50 c.c. of mixture + 3 drops acid.	April 16th, 9.15 P.M.: 50 c.c. of mixture + 3 drops acid.
April 17th, 8.25 P.M.: Deposition of uric acid begun.	April 18th, 8.25 P.M.: Deposition begun.

The precipitation of uric acid evidently runs the same course in specimens containing equal amounts of this substance in both the fruit and non-fruit periods, provided that the degree of acidity is the same. If further confirmation of this were needed it is afforded by a comparison of the amount of acid required to cause precipitation with the normal acidity of the urine in the two periods in those cases in which the amounts of uric acid are exactly or nearly alike (Table III.). In only one case, the last, do the numbers differ from each other by more than corresponds to one drop of the acid used for precipitating (= 1·2 cubic centimetres decinormal); and this correspondence is as close as can be expected to occur. It would be closer in proportion to the degree of dilution of the acid used for precipitating. In the exceptional case in which the numbers are 11·6 and 10·2 I was in doubt whether to consider the precipitation as caused by one drop or by two drops of acid, for with one drop precipitation had really begun, but there were only five small crystals visible with the pocket lens, while on the following day the precipitation was general—one drop was less than was required and two drops were more. Had I taken one instead of two as the efficient number the figures would have been 10·4 and 10·2. It may be maintained, therefore, that the effect of the several fruits used in this experiment in lessening the precipitability of the uric acid is due essentially, if not wholly, to the diminished acidity of the urine.

Conclusions.—1. Pears, fresh figs, grapes, dates, and oranges may be taken not only with impunity but with distinct advantage by those who suffer from uric acid calculus and gravel. 2. The beneficial effect, which will be, *cæteris paribus*, in proportion to the amount taken, is due essentially, if not entirely, to the lessened acidity of the urine. 3. Marmalade does not raise the precipitability of the uric acid, though in the quantity likely to be taken it fails to produce the opposite effect, probably because the amount of fruit pulp is insufficient for that purpose.

If it should be suggested that the effects described above are not necessarily those which would be seen in patients suffering from uric acid calculus and gravel, I would reply that I can produce in myself uric acid gravel at will, not for a day or two only but for long periods, by taking a suitable diet for the necessary time, while experiments on a friend led to a similar result. When fruit disagrees—i.e., deranges the digestion—it would, of course, like any other article of food acting in a similar manner, not be prescribed. The experiment is being extended to other varieties of fruit and to some substances other than fruit.

Oxford.

EXPERIENCES OF THE TREATMENT OF THE CANCEROUS CERVIX UTERI BY THE ABDOMINAL ROUTE, WITH PELVIC DISSECTION.[1]

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IN the treatment of cancer of the cervix uteri a new phase is looming large on the British gynæcological horizon, and I have thereby been encouraged to bring before you shortly my experiences of the so-called radical operation. The brief time at our disposal does not permit of mention of all the problems involved and I therefore propose to consider chiefly the operative aspects of the subject.

In the first place I venture to remind you of certain anatomical details connected with the pelvic course of the ureters and with the lymphatic vessels passing from the cervix uteri to the glands lying in the pelvic connective tissues. The ureter, the pars pelvica, 12 centimetres in length, extends from the pelvic brim to the bladder. It is subdivided into pelvic and vesical portions, but this is of no importance from the operative point of view. The ureter is inclosed in a sheath of loose connective tissue in which course the special nutritive vessels. These vessels are:—1. The superior ureteric artery, which springs from the ovarian artery as it crosses the ureter in the abdomen and runs downwards, dividing into branches. 2. The inferior ureteric artery or arteries, derived either from the uterine as it crosses the ureter or from the vesical artery. These latter pursue an upward course. Having an independent vascular supply the ureter can be separated from its connexions without ill result provided the vascular sheath be left intact.

The ureter can be readily found by its relation to the internal iliac artery. Division of the infundibulo-pelvic ligament close to the brim results in the formation of a diamond-shaped gap. Gentle stroking of the exposed connective tissue with a finger converts this gap into a cavity which is bounded externally by the artery and internally diastatic activity, led to the same conclusion as the precipitate obtained from it by alcohol. There seemed also no evidence of an increase in the amount of Garrod's urochrome which Klemperer has shown to be an important solvent of uric acid. In judging colorimetrically of the urinary pigments it must not be forgotten that both keeping and increase of acidity darken the urine. The phloroglucine test for the pentoses, applied in the manner recommended by Salkowski, did not show a trustworthy and constant difference of colour between the fruit and non-fruit periods.

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[1] A paper read before the North of England Obstetrical and Gynæcological Society at Manchester on April 17th, 1905.

It remained, finally, to inquire if the diminished acidity of the urine during the fruit periods sufficed *per se* to account for the *degree* of alteration in the precipitability of the uric acid. On Feb. 22nd–23rd (date period) and on Feb. 25th–27th (non-fruit period) the amount of uric acid was the same and the reaction different. I therefore equalised the latter by adding the necessary quantity of alkali to the more acid urine and of acid to the more alkaline, while the same volume of water was added to other specimens and the precipitability of the uric acid tested in the usual way:—

Experiment 1.

A. (Date period), less acid urine.	B. (Non-fruit period), more acid urine.
March 3rd: 220 c.c. urine (Feb. 22nd to 23rd) 11 c.c water. 7.30 P.M.: 50 c.c. of the mixture. 1 drop acid.	March 3rd: 220 c.c. urine (Feb. 25th to 27th). 11 c.c. NaOH decinormal. 7.30 P.M.: 50 c.c. of the mixture. 1 drop acid.
March 22nd, 10 A.M.: No deposit of uric acid.	March 22nd, 10 A.M.: No deposit of uric acid.

TABLE V.—SHOWING THE GENERAL CONDITION OF THE URINE DURING THE FRUIT AND THE NON-FRUIT PERIODS (SERIES 2).

Period.	Quantity of fruit pulp taken daily.	Date.	Daily quantity of urine.	Specific gravity of diluted urine.	Total (N) daily output.	Uric acid, daily output.	Total acidity determined by phenolphthalein.	Total P_2O_5 daily output.	P_2O_5 as dihydrogen acid, daily output.	Acid needed to start precipitation of uric acid in 48 hours.	Range of temperature during experiments.
	Grms.		c.c.		Grms.	Grms.	c c deci-normal.	Grms.	Grms.	c c. deci-normal.	Deg. F.
Date	158 0	Feb. 21st	1224	1014	14·43	0·4368	348	1·950	1·066	1·2	46 to 48
	156·5	,, 22nd	1203	1012	14·45	0·4032	368	2·214	1·162	2·4	
	106·0	,, 23rd	1425	1014	13·94	0·4284	284	1·740	0·818	3 6	
	102 0	,, 24th	1283	1012	13·42	0·4032	290	1·840	0·830	3 6	
Total	522·5	—	5035	—	56·24	1·6716	1290	7·744	3·876	10 8	—
Daily average	130 6	—	1258	1013	14 06	0·4179	322·5	1 936	0·969	2·7	—
Non-fruit	0*	Feb. 26th	1262	1013	14·70	0·4284	384	1·912	0 958	0·6	46 to 48
	,,	,, 27th	1319	1013	14·70	0·4284	384	1·912	0·958	0·6	
	,,	,, 28th	1225	1015	15·27	0·4872	384	1·906	0·948	0·6	
	,,	March 1st	1440	1015	14·82	0·4653	300	1·980	0·966	3·6	
Total	,,	—	5246	—	59·49	1·8093	1452	7·710	3 830	5·4	—
Daily average	0	—	1311	1014	14·87	0·4523	363	1 927	0·957	1·35	—
Orange	304	March 3rd	1580	1013	13·83	0 4149	306	1·960	0·930	4·8	48 to 50
	308	,, 4th	1631	1014	13·83	0·4284	250	1·980	0·770	4 8	
	320	,, 5th	1458	1015	14·16	0·4620	252	2 000	0·684	4·8	
	322*	,, 6th	1329	1015	14·16	0·4620	252	2 000	0 684	4·8	
Total	1254	—	5998	—	55·98	1·7673	1060	7 940	3 068	19·2	—
Daily average	313·5	—	1499	1014	13·99	0·4418	265	1·985	0·767	4·8	—
Non-fruit	0	March 8th	970	1011	14·11	0·4032	360	2 024	1·120	1·2	48 to 53
	,,	,, 9th	1302	1015	15·41	0·4216	376	2 116	1·106	1·2	
	,,	,, 10th	1299	1013	13·18	0·3662	294	1·910	1·134	2·4	
	,,	,, 11th	1556	1012	13·30	0·3346	306	1·834	0 868	2·4	
Total	,,	—	5127	—	56 00	1·5256	1·336	7·884	4·228	7·2	—
Daily average	0	—	1281	1012	14·00	0·3814	0·334	1 971	1·057	1·8	—
Marmalade	172	March 13th	945	1012	12·88	0·3360	324	1·830	0 966	2 4	52 to 55
	179	,, 14th	974	1011	13·00	0·3416	338	1·980	1·068	2·4	
	170	,, 15th	1679	1012	13·60	0·3444	318	1·800	0·932	3 6	
	185	,, 16th	1097	1010	11·98	0·3276	308	1·700	0·894	3 6	
Total	706	—	4695	—	51·46	1·3496	1288	7·310	3 860	12·0	—
Daily average	176·5	—	1173	1011	12·66	0·3374	322	1·827	0 965	3·0	—

* The urine of these two days was mixed and examination made of the mixture.

There was some infiltration of the right broad ligament but none in the utero-sacral folds. Under anæsthesia the mobility of the uterus was found to be considerably greater than at first seemed the case.

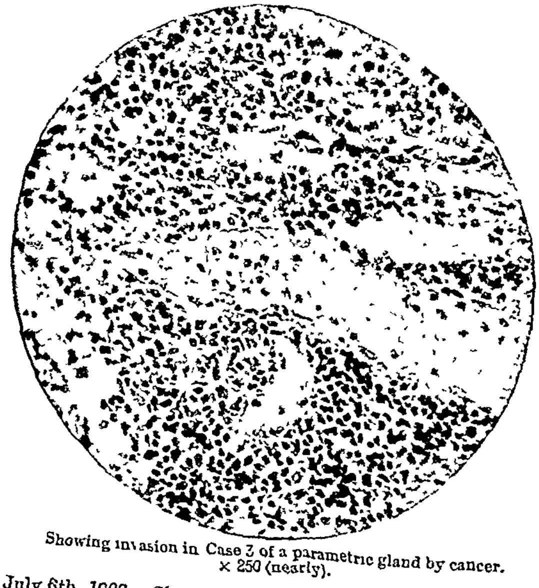
Operation was performed on June 9th, 1903. The ureters were traced forward without previous examination of the cervico-vesical septum—a tactical error. The tunnel of the right ureter passed through the growth in the right broad ligament and its outer surface was involved by it; the ureter, however, shelled out easily. The left was cleared without any sign of disease being found. The bladder was firmly united to the cervix by the growth. As much as possible was scraped off, as at that time I did not feel justified in excising the part of the vesical wall involved. No glands of any kind could be found. Recovery was uninterrupted. The patient was discharged at her own request on the fourteenth day.

CASE 2.—The patient, married, aged 44 years, was admitted to hospital on June 20th, 1903. She had been married 16 years. She had had four children and two abortions. The duration of the symptoms was six months. The local conditions were as follows. The cervix was enlarged, indurated, and irregular; it bled freely on touch The uterus was freely moveable.

Operation was performed on June 23rd, 1903. Both in this and the preceding case the operation was entirely abdominal, the vagina being clamped between two large pairs of compression forceps before division. No trouble was experienced with the ureters. The anterior vaginal wall was sewn to the peritoneum of the bladder; this was found afterwards to limit the capacity of the bladder. Three right and one left iliac glands were found and removed; in size all were apparently normal. The lower end of the abdominal wound suppurated but speedily recovered. On the sixteenth day urine escaped per vaginam. Examination disclosed a small opening on the left of the vaginal apex. The incontinence gradually ceased and had disappeared at the end of six weeks. No evidence of enlargement of the left kidney was discovered at any time. Examination of the glands microscopically did not reveal the presence of cancerous disease. On Oct. 23rd the patient was seen in the out-patient room. A large indurated area was found in the abdominal wall around the cicatrix. From two or three small openings a thin watery fluid escaped. It was evident that the abdominal wound had become infected by cancer cells at the time of operation. A sweeping removal was carried out but recurrence speedily took place and death occurred five months later.

CASE 3.—The patient, aged 36 years, married, had been attended by Dr. W. G. Williams. She was admitted on July 6th, 1903. She had been married 14 years. She had had two children and six abortions. The duration of the symptoms was two years. She was seen a year previously by a well-known gynæcologist who considered that the disease was too extensive for any radical operation. A palliative operation was performed and for some months the patient was much relieved of her symptoms and gained in weight. Gradually the bleeding came on again and the patient sought further relief. The local conditions were as follows. The cervix was represented by an irregular thick mass with a dirty sloughing surface which bled on touch; friability was marked. The vaginal walls were not involved; induration was felt along the bases of both broad ligaments. The mobility of the uterus itself was surprising and it was this circumstance that determined me in giving the patient another chance.

FIG. 1.



Showing invasion in Case 3 of a parametric gland by cancer. × 250 (nearly).

Operation was performed on July 11th. As a preliminary step the cervix was separated from the bladder and as it peeled off freely the operation was proceeded with. The ureters were dissected out with some little difficulty on account of the extreme depth of the pelvis. The thickened right parametrium showed no signs of malignant infiltration and the left was not even indurated. Small iliac glands were removed from both sides. After the usual gauze pack had been placed the sigmoid colon and its mesentery were carefully arranged so as to roof it in. Examination of the glands established the presence of cancer in the right iliac glands. Uninterrupted recovery followed and the patient remained in excellent health without sign of recurrence until June, 1904. She had reported herself regularly every month until that time and although requested to continue doing so she became over-confident and did not reappear until August, when it was ascertained that wide recurrence had taken place at the top of the vaginal canal. Examination under anæsthesia was made and showed such extensive disease that further interference was out of the question.

CASE 4.—The patient, aged 53 years, married, had been attended by Mr. J. Singleton of Kendal. She was admitted on Sept. 10th, 1903. She had been married 20 years but had never been pregnant. The menopause came on at the age of 38 years. The local conditions were as follows. The cervix was small and irregular; the anterior lip was ulcerated and bled on touch. A piece of tissue was removed and examined microscopically; it proved to be squamous-celled carcinoma.

Operation was performed on Sept. 22nd. The omentum was adherent to the anterior half of the pelvic brim. The left appendages were adherent to the floor of the pelvis; these were freed with difficulty. The body of the uterus was small and soft; when grasped with the volsella pus gushed out through a tear caused by the teeth of the forceps. At this stage the disadvantages caused by a layer of abdominal fat, two inches in thickness, and by a very deep pelvic cavity impressed themselves forcibly on me. The difficulty was increased by the impossibility of drawing the uterus up, on account of infiltration at the base of the left broad ligament. The patient took the anæsthetic badly and strained a good deal. This was the first case in which an internal iliac artery was ligatured. The left artery was doubly ligatured and divided between the ligatures; the right could not be satisfactorily exposed, and the uterine artery was therefore ligatured at its origin. The infiltration of the left broad ligament was continued into the utero-sacral fold of the same side and during the clearing out of the latter free venous bleeding occurred, easily checked, however, by pressure. Adrenalin chloride solution was applied to make certain that it was permanently stopped. There was no difficulty in freeing the ureters, bladder, and connective tissues. No glands were to be found. The patient's condition was now a serious one. The ureters were dealt with as usual and, be it noted, they were quite intact. The abdomen was then quickly closed. The after-condition was never satisfactory, although the patient rallied well. She did not sleep, she talked incessantly, and passed very little urine. During the first 48 hours only four ounces were voided, but this amount gradually increased during the following three days. In spite of this the condition steadily grew worse, nothing gave sleep, and the patient slowly sank and died, presumably from sepsis.

CASE 5.—The patient, aged 35 years, married, had been attended by Mr. T. H. Summerhill of Rhyl; she was admitted on Oct. 14th, 1903. The duration of the symptoms was four months. The local conditions were as follows. The cervix was excavated; there was infiltration of the anterior wall which apparently involved the bladder. The body of the uterus was only slightly moveable. The left broad ligament was thickened and fixed. The patient was kept in bed for usually by the ureter. If the posterior lamella of the broad ligament be hooked up by a finger placed behind it, the ureter will be found running across the palmar surface. From this point its course is mainly forward through the base of the broad ligament at a varying distance from the cervix. It may hug the latter closely or remain at a distance of one and a half inches. In nearly all cases it passes through a well-defined fibrous tunnel to the walls of which it is connected by loose cellular tissue that readily permits the ureter to be shelled out of its tunnel. Even when the broad ligament is infiltrated by cancer it is sometimes possible to turn the ureter with its vascular sheath cleanly out of a tunnel, the outer surface of which is intimately attached to the diseased tissues.

The lymphatics passing from the mucous and muscular coats of the cervix finally unite into two or three main trunks which open into one or more small glands situated in the parametric tissues close to the cervix. Each of these trunks has a diameter equal to that of the uterine artery and is provided with valves the concavity of which is directed outwards. Under pressure these valves become incompetent. After passing through the parametric glands the main lymphatic trunks are joined by the lymphatics from the upper part of the vagina. They then accompany the uterine artery until they terminate in the glands lying along the internal iliac artery. The largest gland lies in the bifurcation of the common iliac and one or more are situated beneath it, whilst below these, in close relationship to the branches of the internal iliac artery, lies the gland which receives the lymph channels from the middle portion of the vagina which course upwards with the vaginal artery. Sometimes a gland is found near the origin of this set of vessels in close relation to the recto-vaginal septum. The cervical lymphatics communicate with the gland lying immediately beneath the entrance to the obturator canal and also with the sacral glands which lie on the antero-lateral aspect of the sacrum. Unless enlargement of these glands exists recognition by vaginal, rectal, or abdominal palpation is not possible. Enlargement of a gland does not necessarily imply that it is cancerous, whilst a cancerous gland is not necessarily enlarged. A notable point is that in quite a number of cases no glands are to be found, normal or otherwise. Döderlein, for example, was unable to find glands in eight out of 26 cases. In my own cases careful search failed to reveal them in four out of ten cases. On the other hand, Wertheim found glands in every one of 80 cases.

Opportunity may be taken at this point to mention that recent investigations have shown that cancerous extension may take place along the lymphatics of the branches of the sacral plexus of nerves. Cancer cells have been found invading peri-, epi-, and endo-neuria, in some cases only fortunately, otherwise operative interference in cancer of the cervix would be wellnigh hopeless.

The abdomen is opened by an incision extending from the pubes to the umbilicus and the patient is placed in the Trendelenburg position, without the aid of which the operation would be impossible. All free intestine is cleared out of the pelvis and retained in the upper part of the abdomen by careful packing with a sterilised towel or pad. Visual and digital exploration of the pelvic organs follows. It is especially advisable to examine carefully the cervico-vesical septum, the utero-sacral folds, and the regions which the pelvic glands occupy. The first is of greatest importance, as while slight involvement merely modifies the procedure somewhat a greater degree would call for abandonment of the operation.

As a rule, the mobility of the uterus proves greater than appears to be the case bimanually and when the assistant makes traction upon it by means of a pair of Museaux forceps the infundibulo-pelvic and round ligaments are in turn readily made tense. With this help each of these ligaments is secured by double ligatures placed as close to the pelvic brim as possible and the portions lying between the ligatures are divided with scissors. The four gaps thus created are connected by division of the intervening peritoneal areas, the incision which passes from one round ligament to its fellow coursing along the bottom of the utero-vesical pouch. The cut peritoneal edges retract inwards and outwards, leaving exposed the lateral and anterior borders of the parametric tissues. The uterus being drawn upwards and backwards, separation of the bladder from the cervix and vagina is effected with the finger. The uterus is then drawn forwards and attention is directed to the ureters. Generally, the left ureter is first exposed and separated from the internal iliac artery and the connective tissues on its outer aspect; this allows the ureter to be drawn gently inwards. The internal iliac artery is dissected bare of investing tissues and ligatured about its middle. The same steps are carried out on the opposite side, so that under ordinary conditions it is now possible to work freely in the pelvic connective tissues with the minimum of bleeding. Whether one proceeds on the right side or the left is a matter of indifference; I generally select the left.

The left ureter is traced forwards, care being taken not to separate it from the posterior lamella of the broad ligament until it actually turns forward in earnest. With the help of two pairs of dissecting forceps the ureter is shelled out of its tunnel, the peritoneum of the broad ligament being pushed inwards during the process and the connective tissues being torn through in a direction upwards and outwards, so that when the point of entry into the bladder wall is reached the ureter can be simply lifted up and carried out to the pelvic brim. This cannot be satisfactorily done until the parametric tissues have been dissected off the walls of the pelvis and bladder. Beginning on the pelvic wall, partly with the finger, partly with dissecting forceps, the tissues are peeled and scraped off. Theoretically, the aim is absolutely to denude the pelvic fascia; practically, one gets away as much as possible. Sometimes an enlarged obturator gland is encountered; occasionally a branch of the uterine artery is wounded and spouts, despite the ligature of the parent trunk. As the dissection passes more deeply the uterine artery is again encountered, lying close to the pelvic wall, and for safety it is ligatured close to its origin before being divided and swept inwards with the connective tissues. These are being steadily heaped up around the uterus and they are added to by separation of the broad ligament tissues from the bladder. The finger can now be pushed deeply down beneath the parametrium till it lies on the vagina which in its turn is freely separated. These procedures are repeated on the right side and at their termination both ureters are free, the anterior and lateral parametric tissues have been freed and swept inwards, and the interior and lateral aspects of the vagina for its superior half are free. A semicircular incision through the peritoneum is now made across the bottom of the pouch of Douglas, extending from the right to the left infundibulo-pelvic ligament. Through this the posterior wall of the vagina is separated from the rectum and the tissues in the utero-sacral folds are dislodged and added to the central mass. The uterus is now quite free and can be pushed down the vaginal tube until the upper half of the latter is inverted within the lower. The abdominal wound is temporarily closed and the patient placed in the lithotomy position. The cervix, grasped by a pair of volsella, is drawn down until the vagina is almost completely inverted. The vaginal wall is carefully cleansed and then cut through by a circular sweep of the knife. It only remains to pull out the uterus and push a temporary pad of gauze in the reinverted vagina. The Trendelenburg position is resumed, the abdominal wound reopened, and all available peritoneum is used to cover over raw surfaces. If possible the ureters are secured to the lateral pelvic walls by peritoneal flaps, but, as a rule, pressure of the light gauze pack with which the pelvic cavity is filled is sufficient to effect this. The lower end of the pack is brought out per vaginam, the intestines are rearranged, and the abdomen is finally closed.

It should be mentioned that in the first eight cases the vagina was divided from the abdomen. This method, however, seems to carry with it the risks of septic infection and of cancerous inoculation of sound tissues. With the combined method the chances of either occurring are much diminished. No forceps, however powerful, seem to be strong enough to clamp satisfactorily the vagina before dividing it from the abdomen.

CASE 1.—The patient, married, aged 49 years, who had been attended by Mr. W. J. R. Dunn, was admitted to the Hospital for Women on June 6th, 1903: She had been married 26 years. She had had one child and three abortions; the menopause occurred at 41 years of age. The duration of the symptoms was seven months; at their onset the patient consulted a medical man who did not make an examination but suggested that she "should go home and prepare to die"—advice which certainly offers ground for reflection. Later she consulted Mr. Dunn who sent her into hospital. The local conditions were as follows. The cervix was excavated and the mobility of the uterus was diminished.

There was some infiltration of the right broad ligament but none in the utero-sacral folds. Under anæsthesia the mobility of the uterus was found to be considerably greater than at first seemed the case.

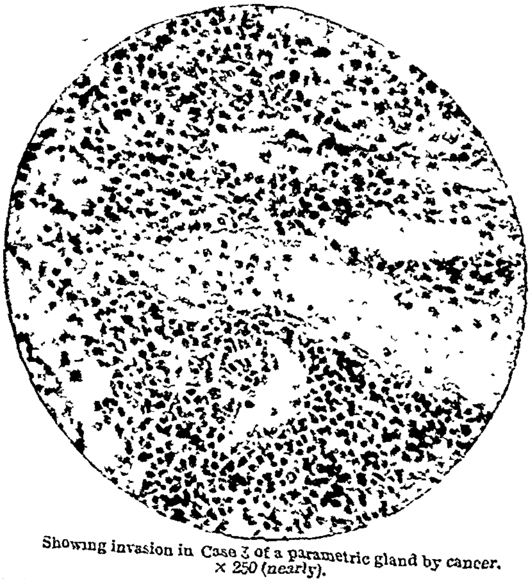
Operation was performed on June 9th, 1903. The ureters were traced forward without previous examination of the cervico-vesical septum—a tactical error. The tunnel of the right ureter passed through the growth in the right broad ligament and its outer surface was involved by it; the ureter, however, shelled out easily. The left was cleared without any sign of disease being found. The bladder was firmly united to the cervix by the growth. As much as possible was scraped off, as at that time I did not feel justified in excising the part of the vesical wall involved. No glands of any kind could be found. Recovery was uninterrupted. The patient was discharged at her own request on the fourteenth day.

CASE 2.—The patient, married, aged 44 years, was admitted to hospital on June 20th, 1903. She had been married 16 years. She had had four children and two abortions. The duration of the symptoms was six months. The local conditions were as follows. The cervix was enlarged, indurated, and irregular; it bled freely on touch. The uterus was freely moveable.

Operation was performed on June 23rd, 1903. Both in this and the preceding case the operation was entirely abdominal, the vagina being clamped between two large pairs of compression forceps before division. No trouble was experienced with the ureters. The anterior vaginal wall was sewn to the peritoneum of the bladder; this was found afterwards to limit the capacity of the bladder. Three right and one left iliac glands were found and removed; in size all were apparently normal. The lower end of the abdominal wound suppurated but speedily recovered. On the sixteenth day urine escaped per vaginam. Examination disclosed a small opening on the left of the vaginal apex. The incontinence gradually ceased and had disappeared at the end of six weeks. No evidence of enlargement of the left kidney was discovered at any time. Examination of the glands microscopically did not reveal the presence of cancerous disease. On Oct. 23rd the patient was seen in the out-patient room. A large indurated area was found in the abdominal wall around the cicatrix. From two or three small openings a thin watery fluid escaped. It was evident that the abdominal wound had become infected by cancer cells at the time of operation. A sweeping removal was carried out but recurrence speedily took place and death occurred five months later.

CASE 3.—The patient, aged 36 years, married, had been attended by Dr. W. G. Williams. She was admitted on July 6th, 1903. She had been married 14 years. She had two children and six abortions. The duration of the symptoms was two years. She was seen a year previously by a well-known gynæcologist who considered that the disease was too extensive for any radical operation. A palliative operation was performed and for some months the patient was much relieved of her symptoms and gained in weight. Gradually the bleeding came on again and the patient sought further relief. The local conditions were as follows. The cervix was represented by an irregular thick mass with a dirty sloughing surface which bled on touch; friability was marked. The vaginal walls were not involved; induration was felt along the bases of both broad ligaments. The mobility of the uterus itself was surprising and it was this circumstance that determined me in giving the patient another chance.

FIG. 1.



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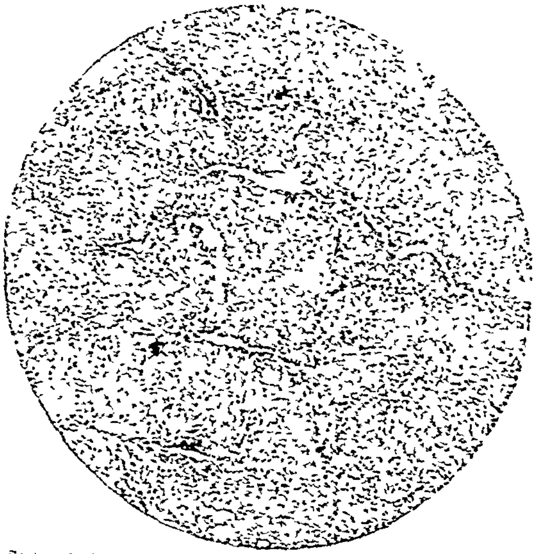
1904, when all the symptoms suggestive of recurrence appeared and the patient gradually sank.

CASE 9.—The patient, aged 54 years, was admitted on May 27th, 1904. She had been married for 18 years but had never been pregnant. The menopause occurred at 49 years of age. The symptoms had been of three months' duration. The following were the local conditions: the cervix was excavated; there was marked induration in the left broad ligament interfering considerably with the mobility of the uterus; the utero sacral folds were apparently free. On May 28th the cervical ulcer was curetted, after which a 60 per cent. solution of zinc chloride was applied.

On June 7th operation was proceeded with. The left side of the bladder was adherent to, and dragged backwards by, the sigmoid colon and there were numerous omental adhesions to the bladder. After these had been dealt with and the pelvis emptied of intestine it could be seen that there were large deposits of fat in the pelvic connective tissues. As usual, the mass in the left broad ligament was much larger than had previously appeared; it was adherent to the bladder and involved the utero-vesical septum. The right ureter was dealt with but as I wished to run no risks with it the uterine artery alone was tied. The left internal iliac was then ligatured, a mass of enlarged glands cleared out, and an attempt made to expose the ureter. This was very difficult and ultimately part of it had to be traced from its anterior end. The whole of the posterior wall of the bladder was resected with the exception of two tongues carrying the ureteral openings and the bladder wound was sutured with catgut. The remaining attachments of the uterus were freed, the vagina was separated, and removal was carried out per vaginam. To do this incision of the vagina was necessary. The operation was concluded in the usual way and a drainage-tube was placed in the bladder. The patient recovered steadily, but on the sixteenth day urine escaped per vaginam. The bladder remained quite sound, but it has been ascertained that the left ureter sloughed; the result has been that a uretero-vaginal fistula has formed. Two attempts have been made to close it, but a small opening still exists in place of one that easily admitted the finger-tip. This patient is still alive and well. The left iliac glands were extensively involved by cancer.

FIG. 3.

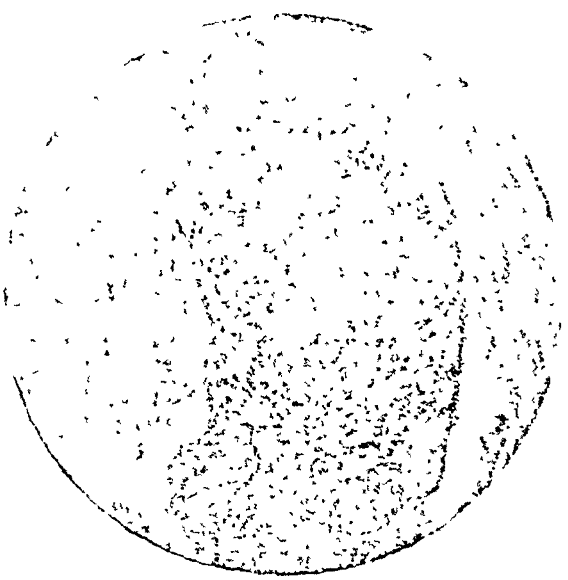


Section in Case 9 of cancerous left iliac gland, showing degenerating lymphoid tissue surrounded by cancer cells. × 45 (nearly).

CASE 10.—The patient, aged 43 years, was admitted on Jan. 7th, 1905. She had been married 25 years and had had 13 children. The duration of the symptoms was eight months. The local conditions were as follows. The cervix was excavated and the uterus was freely moveable; no extension beyond it could be discovered.

The operation was carried out on Jan. 14th. The pelvic connective tissues appeared to be quite free from disease and as there was but little oozing of blood the internal iliacs were not tied. With this exception the procedure did not vary from the description given above. The uterine arteries were ligatured at their origins and a large vesical artery required tying on the left side. On the left iliac vessels a large gland measuring one and a half inches in length by half an inch in thickness was removed. A small one lay along the right artery. Search for others was futile. This operation was by far the most easy of the whole ten but most unfortunately the patient died from sepsis on the sixth day. At the necropsy general peritonitis was found.

FIG. 4.



Section in Case 10 of cancerous left iliac gland. × 200 (nearly).

Of the ten operations three were incomplete, one because the patient's condition necessitated speedy termination of the operation and two because of extension of the disease to the bladder wall. It has been borne in upon me that ruthless excision is necessary for the success of this operation. Involvement of the bladder implies either abandonment of the operation or free removal of the affected area. Involvement of the ureters in a cancerous broad ligament calls for resection with fresh implantation into the bladder.

With regard to the pelvic connective tissues any attempt to remove them cleanly must necessarily be out of the question. Even in lean individuals a surprising quantity of fatty tissue is found beneath the pelvic peritoneum and complete removal of it is a task better suited for the dissecting rather than the operating room. In most cases I was struck by the small amount of tissue contained in the utero-sacral folds; in no instance was anything resembling a gland turned out of them, nor could any sacral glands be discovered. Perhaps this is not surprising, since in no single one of the cases was any induration behind the uterus detected previously to operation. In this connexion it is interesting to bear in mind the dictum of Wertheim: "Infiltration does not necessarily imply carcinoma, nor does a soft condition exclude it."

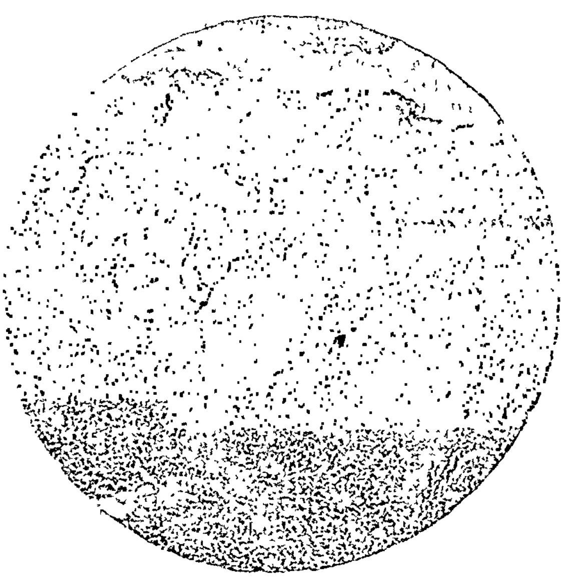
The modes of advance of cancer are either by direct continuation of growth from the cervix into the parametrium, or, the cervix being surrounded by intact connective tissues, the metastases are found principally in the glands, or there may be a combination of both these modes. Kundrat has investigated the condition of the parametrium by serial section cutting in 80 cases and he found it was affected in 55 per cent. of them: on one side only in 23·75 per cent., on both in 31·25 per cent. In 22 cases the parametrium alone was diseased, the glands being normal; in eight the parametrium was uninvolved, whilst the glands were diseased. In a number of cases in which the parametrium was indurated no sign of cancer could be detected and, inversely, disease was discovered in soft parametria. As causes of non-cancerous infiltration Kundrat suggests changes in the vessels—proliferation of the intima, closure of the lumen, and thrombosis—which probably have some relation to the new growth. The accompanying exudation and a week, during which time hot douches and glycerine pledgets were employed. At the end of the week the mobility of the uterus had considerably increased, so I decided to explore the condition of matters.

Operation was performed on Oct. 20th. The peritoneum at the bottom of the utero-vesical pouch was puckered and adherent to the underlying growth. Both internal iliac arteries were ligatured. The right ureter was freed without trouble; the left was shelled out of a mass of carcinoma in the left broad ligament. As a matter of fact, the tunnel only was adherent to the growth, the loose tissue surrounding the ureter itself being apparently unaffected and the ureter when freed was seen to be covered by a thin layer of fat in which the ramifying vessels were distictly visible. To ascertain the extent of bladder involvement an opening was made in the viscus and its cavity was explored by the finger. The infiltration was too widespread to justify any resection of the bladder, so the wound was closed. All disease that could be cut and scraped away was removed and after the usual peritoneal stitching the abdomen was closed. No glands were found. Recovery was normal. The patient was discharged on Nov. 14th, healing being complete except for the small crateriform ulcer at the summit of the vagina. The disease steadily advanced, metastases formed in the liver, and death took place on Jan. 25th, 1904.

CASE 6.—The patient, aged 50 years, married, had been attended by Dr. J. D. R. Munro of Nantwich. She had been married 20 years. She had had eight children and two abortions. The duration of the symptoms was four and a half months. The local conditions were as follows. The cervix was indurated; the os admitted the tip of the forefinger which passed into an irregular excavated cavity. There was some induration on the left of the uterus. The uterus was perfectly moveable.

Operation was performed on Nov. 7th. Both internal iliac arteries were ligatured. The ureters and bladder were freed. The vagina was divided with a knife, the upper end being guarded with a gauze pad and the whole being lifted out together. A gauze pack was placed in the lower vaginal end. A large mass of glandular tissues was found immediately below the right obturator canal. A few small glands in a similar position were found on the left side. None were discovered along the iliac vessels of either side, although one was found in the base of the right broad ligament. Recovery was normal. This patient is still alive and well. The right obturator gland was found to be invaded by cancer.

FIG. 2.



Section in Case 6 of cancerous obturator gland of the right side. × 45 (nearly).

CASE 7.—The patient, aged 55 years, under the care of Dr. R. Lucins Wood of Huyton, was admitted on Nov. 16th, 1903. She had been married for 35 years, had had 13 children, and had aborted twice. The menopause occurred at 44 years of age. The symptoms had lasted for three or four months. She had lost much blood and looked blanched. The cervix was excavated and the uterus was moveable. She was operated upon on Nov. 21st, 1903.

The case is an example of the difficulty that may be encountered during the performance of this operation. The general condition of the patient was bad; the subcutaneous fat was dirty looking, œdematous, and friable; and the rectus muscle resembled the pale muscle of the rabbit. The preliminary steps were carried out in the usual manner, and then occurred trouble with the anæsthetic. The patient took both chloroform and ether badly, fluid collected in the trachea, and cyanosis became marked. After some improvement the pelvic connective tissues were opened up and then the venous plexuses in the broad ligaments were seen to be enormously congested. Veins one centimetre in diameter twined and twisted in great bunches and concealed only too effectually the underlying ureters and vessels. After some manipulation the left internal iliac artery was found and tied, but during the tracing forward of the ureter one of these veins was wounded. The pelvis was immediately flooded with blood but the bleeding was checked by packing with a sterilised towel. Its withdrawal was followed by similar alarming hæmorrhage and it was only at the slow and careful removal of the pack for the third time that the bleeding point was secured. The large veins had now collapsed and the freeing of the ureter was accomplished. Rather than risk a similar occurrence on the right side I contented myself with ligaturing down the broad ligament, removed the uterus, and sent the patient back to bed as rapidly as possible. She was very much collapsed, never rallied, and died in 18 hours.

CASE 8.—The patient, aged 48 years, who had been under the care of Dr. A. MacLennan of Runcorn, was admitted on Nov. 20th, 1903. She had been married for six years and had had two children. The menopause had occurred at 44 years of age. The symptoms had lasted for four and a half months. The cervix was excavated; the uterus was slightly moveable laterally, but it could not be drawn down to the vaginal ostium. After a week's rest and treatment the mobility of the uterus was found to be increased, but there was now felt clearly a large mass in the right broad ligament. This case was not one in which vaginal hysterectomy could be carried out, but I decided to attempt the abdominal operation as the patient was very anxious to have something done.

The operation was performed on Dec. 1st, 1903. The bladder was found to be adherent to the cervix, but the connexion was tough, suggesting inflammatory rather than malignant tissue. After dealing with the internal iliac arteries and the left ureter the mass on the right side of the uterus was investigated. Its size was about that of a bantam's egg and it was firmly attached to the uterus and to the bladder. The right ureter dived into its centre and careful dissection was required to free it. After tedious and difficult work, involving much handling of the ureter, that tube was cleared, but unfortunately minus its nutritive vessels. Next, the muscular wall of the bladder to which the malignant lump adhered was stripped off the underlying mucous membrane of the bladder and cut away. The mucous membrane bulged, thinned, and threatened to burst under the pressure of the little urine in the bladder, but the catastrophe was averted by the immediate use of the catheter. The healthy edges of bladder muscle were then sutured together. Shortly afterwards, in drawing the fundus uteri to the left, a loud crack was heard, caused by a split between body and cervix. The opening rapidly increased but no discharge was allowed to ooze up. However, the uterus and most of the cervix soon broke off, leaving the right-sided mass still attached to the vagina. The removal of this concluded a long operation. No glands were found. The recovery was uneventful until the seventh day, when urine escaped from the vagina. On Jan. 4th, 1904, two sloughs were found lying in the upper end of the vagina. One resembled a piece of tube laid open along its long axis; the other was indefinite in shape. It was ascertained that the urine was coming down a funnel-shaped opening on the right of the upper end of the vagina. Progress was good until the 27th, when a rigor occurred with a temperature of 103·8° F., and pus was found in the urine. The disturbance passed off and the patient returned home on Feb. 3rd, urine still being passed per vaginam. The incontinence ceased a few weeks after the patient's return home. The general health was fair until the beginning of June, to the asylum on May 21st, 1902. The family history, as given, was normal as regarded nervous disorders except that one sister suffered from "fits." The personal history was also normal. The patient had been healthy in mind and body until she got a severe attack of influenza at the close of December, 1901. Since that time she had not been quite well but was able to do her work up to a date two months prior to admission. No cause for the present attack was known apart from influenza. During the two months preceding admission she was low-spirited, lacrymose, and hypochondriacal. Recently she had been maniacal, with the usual symptoms. The following is a summary of the medical certificate of admission: "Lying in bed, shouting and muttering incoherently; mistakes of identity; some exaltation; insomnia; refusal of food, saying same was poisoned." On admission the patient was restless, resistive, hostile, and destructive; she was filthy in habits, noisy, unconscious of time and place, had delusions of persecution, hallucinations of vision, mistakes of identity, and much exaltation. Physically she was well nourished and powerful. Her face, hands, and feet were very cyanosed. The pulse was 88, the respirations were 16, and there was aortic regurgitation. There was tremor of the lips, the tongue, and the hands. Speech was tremulous. The pupils were equal and of normal contour; there was no reaction to light and they were sluggish to accommodation. There were nebulæ about both corneæ. The knee-jerks were exaggerated. She was certified five days after admission by me as being in a state of "acute dementia, muttering unintelligibly, lying on the floor, moving constantly and aimlessly, resisting strongly, filthy in habits, destructive, refusing food. Physically well nourished and strong." The further history was as follows. She continued noisy, restless, and resistive. Sordes appeared on the lips. The day before death there were moist sounds over the lungs; the pulse was quick and irregular; the temperature was not raised. She died on May 29th (eight days after admission).

Necropsy.—A post-mortem examination was held the next morning. The only morbid appearances were as follows. The dura mater was adherent to the skull cap in front; there was slight opacity of the pia arachnoid over the sulci. The left ventricle was hypertrophied, the myocardium was friable, and the aortic valves were thickened and atheromatous. The pharynx and trachea were very congested. The liver showed old nutmeg change. Nothing else abnormal was noted in the brain or elsewhere. The weight of the brain was (probably before stripping and unopened, but not stated) 48 ounces; the grey and white matter was of good consistence. The tangential fibres of the outermost layer of the cortex cerebri were found to be degenerated. A blood-serum tube inoculated with blood from the heart showed growth on the third day. A subculture from this tube was pronounced by Dr. D. N. Nabarro to be pure growth of the bacillus diphtheriæ.[1]

CASE 2.—The patient was a single man, aged 21 years. It was his first attack and he was admitted to the asylum on Feb. 21st, 1905. The family history was as follows. The mother was epileptic and her father was "peculiar"; nothing further abnormal was ascertained. The patient's personal history was good. The present illness dated back to a recent attack of influenza. The present attack was of about one month's duration; the acuter phase had lasted one week. He had taken food badly; sleep was deficient; he had constipation, increasing incoherence, with hallucinations, and restlessness. The following is a summary of his medical certificate of admission: "Not a moment quiet; appears not to understand; takes no notice; incessant incoherent talk; refusal of food; insomnia." On admission his temperature was 101° F. (thereafter it became normal, but on March 3rd it rose to 100·2° and remained at between 99° and 100° until the morning of death when it was 101°). There was great physical reduction; the tongue was coated and tremulous; there was marked constipation (great difficulty was experienced in overcoming this); and there were considerable rigidity and expression of pain on pressing the muscles. The knee-jerks were exaggerated. As regards mind, his attention could not be gained and he gave no indication of understanding, was unintelligible, and muttered unceasingly. He lay recumbent but was most restless and resistive. He could not control his emunctories. He was fed with great trouble. He was sleepless and appeared to be in pain. He got rapidly worse despite all treatment; he looked exceedingly ill and emaciated; the pulse became feeble; there was increasing dyspnœa (there were a few râles at the bases of the lungs); he was sleepless and in constant motion. Death occurred on March 6th (13 days after admission, about six weeks after the illness was first noted).

Necropsy.—A post-mortem examination was made 41 hours after death. The only positive indications of disease were as follows. The dura mater was rather adherent to the skull; the leptomeninges were congested and the cerebral cortex was markedly so. The brain substance was softened. The weight of the brain (probably with soft membranes and before opening, though not stated) was 54 ounces. The lower lobes of both lungs were congested and there was a small recent pleuritic patch at the base of the right lung. The liver, the spleen, and the kidneys were congested.

CASE 3.—The patient was a married man, aged 40 years. This was his first attack. He was admitted to the asylum on April 15th, 1905. The family history was as follows. One grandfather was "eccentric" and one of the patient's children died from tuberculous meningitis; nothing further abnormal could be ascertained. With regard to his personal history he drank too much at times—was "mad when in drink." The cause of the present attack (which was only of four days' duration) was great excitement during the religious revival. The following is a summary of the medical certificate of admission: "Religious mania with the usual symptoms, including refusal of food." He lived on milk-and-water for some time. On admission his temperature was subnormal (and it was not found above normal till the day of his death, when it was 100° F. in the morning). He was emaciated, pale, and greatly reduced physically. The knee-jerks were much exaggerated. The mouth was dry, the tongue was coated and tremulous, there were sordes on the teeth, and constipation was present. Mentally the patient was very agitated, restless, shouting, gesticulating, and incoherent. He continued thus, passing evacuations under him; he was fed by the tube; he was sleepless (no hypnotics were of any avail). Four days after admission he was removed to the infirmary ward owing to increasing exhaustion. He now took from the attendant four pints of milk and four eggs daily. His face was expressionless. The pulse was good. There was some dyspnœa with coarse râles at the base of the right lung. The temperature was normal. There was general muscular tremor. On the 22nd he was restless, with increasing dyspnœa. The respirations were 45, the pulse was more feeble and rapid, and the temperature was 100°. He died at noon on April 22nd (seven days after admission). For the last three or four days of life he showed no mental reaction but lay in bed taking no notice, expressionless, silent, giving no indication of understanding what was said.

Necropsy.—A post-mortem examination (for an unavoidable reason) was made 71 hours after death. The only positive indications of disease were thickening of the pia arachnoid which peeled easily in large sheets; the grey and white matter of the brain was soft on section. (These last two conditions no doubt were aggravated by length of time between death and the necropsy.) There was congestion of both lungs; the spleen was congested and friable. There was nothing further. The weight of the brain was 53 ounces (with soft membranes).

CASE 4.—The patient was a married man, aged 46 years. It was his first attack. He was admitted to the asylum on Jan. 25th, 1896. His family history was as follows. His father was intemperate and an aunt had a stroke of hemiplegia. The patient was the father of nine children, of whom five died in youth from no special disease; his wife had had two miscarriages also. With regard to his personal history he had had an attack of influenza three years before this illness but apparently made a good recovery. The present attack was of one week's duration; the supposed cause was domestic trouble. The following is a summary of the medical certificate of admission: "Violence, some ideas of exaltation, refusal of food, restlessness." On admission he was very restless and resistive, unintelligible, agitated, required feeding by the tube, stared before him, and appeared to have visual hallucinations. He was utterly confused. Physically he was well nourished; he had an ulcer on the lower third of the right leg, on the antero-internal aspect, and several small scars about the front of the right knee, also one scar on the left knee. There was nothing infiltration of the surrounding tissues lead to stiffening and induration. Under treatment this diminishes, hence the increase noted in the mobility of the uterus. The improvement following the use of Doyen's serum has been ascribed to a similar effect.

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[1] See THE LANCET, August 16th, 1902, p. 440.

The pelvic glands.—In four cases (Nos. 1, 4, 5, and 8) no glands could be found, despite a thorough search for them. Dr. J. H. Willett, who assisted me, bears me out in this. In Case 7 the operation was abandoned and the glands were not sought for. In the remaining five cases iliac glands were found on both sides in three (Cases 2, 3, and 10) and on one side in one (Case 9). In Case 6 the obturator glands on both sides were enlarged.

Microscopical examination has resulted as follows:—Case 2: no disease found on either side. Case 3: Right iliac glands cancerous. Case 9: Left iliac glands cancerous. Case 10: left iliac glands cancerous. Case 6: right obturator glands cancerous. Out of ten cases the glands were found to be cancerous in four—i.e., 40 per cent. It should be stated that sections of these glands were not taken by the serial method—the only trustworthy one—but merely from parts of the glands which appeared suspicious. Possibly, therefore, further investigation of Case 2 might result in the finding of diseased areas. Wertheim estimated that the glands were diseased in 35 per cent. of cases and his figures have been confirmed by Döderlein, Zweifel, and Kleinhaus. Von Rosthorn puts his figures as high as 57·5 per cent., while those of an American observer (Wakefield) are only from 25 to 30 per cent. Wertheim states that of 35 cases in 100 two-thirds show cancer cells arranged in alveoli. In the remaining third there was no alveolar arrangement, but instead tube or bag-shaped formations, lined by high cylindrical epithelium, often possessing cilia. He was inclined to believe that these appearances were to be regarded as having a connexion with carcinoma of the cervix until Meyer of Berlin found similar changes in the pelvic glands of patients who had died from eclampsia or peritonitis. Since this Wertheim has found the same appearances in glands from a patient whose death was attributed to multiple pelvic abscesses. His figures therefore require considerable modification.

Of my own cases, the most striking instances are Cases 6 and 10. Both were typical examples of cases suitable for vaginal hysterectomy. The disease appeared to be limited entirely to the cervix and the mobility of the uterus was normal in each case. Yet in Case 6 the right obturator gland was cancerous and from Case 10 was removed the largest cancerous gland I have yet seen. In both these cases the performance of vaginal hysterectomy would have been futile so far as eradication of the disease was concerned. Improvement succeeding removal of the primary growth would speedily have vanished as the secondary untouched focus advanced. Extirpation of cancerous glands is no guarantee that all disease has been eliminated. Experience may show that the presence of infected glands should be a contra-indication to radical operations, but in the present state of knowledge a "radical" operation, to deserve its title, should include removal of all possible areas which are commonly diseased. In four other cases (Nos. 2, 3, 4, and 7) the local conditions were such that vaginal hysterectomy would unhesitatingly have been performed. In only one of these the glands were found involved by cancer, so that out of six cases in which vaginal hysterectomy would ordinarily have been selected as the operation of choice the pelvic glands were cancerous in three. There were four cases (Nos. 1, 5, 8, and 9) in which the vaginal operation could not possibly have sufficed. Its performance would probably have been attempted in Case 1, but in the other three the interference with uterine mobility was too great even to justify the attempt. In three of these cases no glands were to be found at the operation (Nos. 1, 5, and 8).

Ligature of the internal iliac arteries produced no after-effects at all beyond some temporary lividity of the skin area supplied by its branches. That it is not without its risks is shown by the case recorded by Cullen in which there occurred gangrene of the leg necessitating amputation. In the same case it was noted later that "it appeared as if all the pelvic organs were sloughing away." Ligature of the artery is invaluable in some cases, absolutely checking the oozing of blood which obscures the field of a difficult operation and which thereby increases both its duration and its risks. After the ligature has been tightened the veins seem to collapse entirely; they were never tied for the reason that they were never seen. The only cases in which hæmorrhage was severe were those two (Nos. 4 and 7) in which venous plexuses were wounded. The bleeding in Case 7 was alarmingly free but it was readily checked by pressure, as in a similar case related by Cullen.

Mortality.—Three deaths occurred out of ten cases, a rate of 30 per cent. It is scarcely necessary to recall the heavy mortality which led to the abandonment of Freund's operation—one of 76 per cent. Since 1895 this percentage has been steadily diminishing. Between 1900 and 1902 Wertheim operated on 31 cases with six deaths—18·2 per cent. Jonnesco's first series of ten cases had a mortality of 30 per cent.; his second series of 60 per cent.; and of the third series of ten cases every patient recovered. As he remarks, there seems to be a direct relation between the mortality on the one hand and experience in selecting cases and acquired operative skill on the other. This is perhaps, at present, the keynote of the matter. The operation, radical as it is and dangerous as it may be, requires that only selected cases be submitted to it—cases in which there is the possibility of removing the diseased uterus surrounded by a clear zone of sound, or apparently sound, tissues. Further desiderata are absence of much fat on the abdominal wall, a fairly roomy pelvis, and a good general condition of health. The anatomical position and relations of the mamma and of the uterus differ too much to render any comparison between them of great value but there is a striking similarity between the histories of the surgical progress in the treatment of the cancerous affections of each. First, removal of part, then of the entire organ; finally the organ *plus* its surrounding tissues, lymphatics, and glands. Extensive operations for cancer of the breast are practised now with but trifling mortality and are followed by more prolonged periods of subsequent immunity than were known in the past. Lessened mortality is largely due to modern asepsis but prolongation of immunity can only be due to freer excision. What has proved of value in the case of the cancerous mamma can at least be tried for the cancerous cervix uteri. Whilst routine removal by the vaginal operation ignores the possibility of outlying disease the results can only be disappointing. Is it not time to face the facts, to recognise that in every 100 cases submitted to vaginal hysterectomy diseased areas remain untouched in at least a fourth of the number? Surely the procedure is only palliative in these cases, and as such should be limited in its applications.

It is possible that the clearing up of the mystery surrounding the etiology and pathology of cancer may establish a rational basis for treatment. It is also possible that the abdominal operation may prove to be inadequate. In the meantime my inclination is to regard the combined radical operation as the one which seems to offer a reasonable chance of success, provided that its application be restricted to suitable cases.

Liverpool.

FIVE FATAL CASES OF ACUTE MENTAL DISORDER, PROBABLY ACUTE DELIRIUM.

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THE following cases appear to me to be worth recording on account of their rarity and severity, their rapid and lethal course, the obscurity of their pathogenesis, and, in three of them, the comparative insignificance of the naked-eye cerebral changes. As regards rarity, I find but five instances in a series of 451 necropsies, and undoubtedly the very great majority of such cases come to necropsy. Having regard to our ignorance of the nature of the disorder which these cases illustrate, I am of opinion that all such should be brought forward with a view to stimulate inquiry. The notes in these cases are not so full as could be wished, for reasons beyond my control; nevertheless, they serve to give a fairly good picture of the conditions observed. In the record of post-mortem appearances only positive (morbid) conditions are noted for reason of space.

CASE 1.—The patient was a married woman, aged 43 years. This was her first attack and she was admitted

A good deal of information has been collected during the last few years showing that when retinal changes are present an indication is given of the serious condition of the kidney disease and that life will only be, in the majority of cases, a question of months. Dr. Miles Miley, in a paper before the Ophthalmological Society in 1887, related particulars of an examination of in-patients he had conducted at the London Hospital. He was able to trace the duration of life in 45 cases and ascertained that death ensued in under one month in 13 cases; under two in seven cases; under three in six cases; under four in one case; under five in six cases; under six in four cases; under seven in one case; under eight in two cases; under nine in one case; under 11 in one case; under 14 in two cases; and under 18 in one case. One lived nearly 18 months and two 14 months, all the rest dying before the year was out. The average duration of life in these cases was four months.

At the same time that Dr. Miley's paper was read I contributed a short one to the discussion in which reference was made to eight cases. I shall allude to these instances when, later, I deal with those more particularly treated of in this article and they need not therefore be further mentioned at present. I remarked, however, on that occasion that there is a considerable difference in mortality statistics compiled from hospital as opposed to private patients and especially private ophthalmic patients. The former are inmates of the hospital on account of their kidney disease, whereas the ophthalmic surgeon's patients consult him owing to failure of sight, the discovery of the retinitis frequently leading to the detection of Bright's disease which had hitherto been unsuspected. It is to my mind clear, therefore, that in considering the prognostic value of albuminuric retinitis a sharp line must be drawn between hospital and private patients. Those in better social position have the means of taking the hygienic care requisite in Bright's disease and possibly alcoholism plays a more important part in the class met with in hospitals. It will be found that the period of life after the detection of retinitis is longer in private patients, short as it is, than in those set forth in Dr. Miley's cases. The statistics of Mdlle. Possaner are of interest in this connexion.[2] Out of 67,000 patients (45,000 observed at the clinic in 30 years, 22,000 private patients of Professor Haab) albuminuric retinitis was associated with chronic nephritis in 131 cases, or 1·9 per cent. After eliminating the doubtful cases Mdlle. Possaner inquired into the 131 cases mentioned above. Of 80 she was able to obtain certain information but eight had to be left out; for example, owing to accidental death. Of the remaining 72 cases she found the end different according to sex and social position; of 39 patients from the private *clientèle* 23 only, or 59 per cent., succumbed in two years following the diagnosis, the women presenting a mortality of 58 per cent. and the men 61·5 per cent. Five men and five women were alive after a period varying from two and a quarter to six years for the men and three and a half to 11 years for the women. Out of 33 hospital patients all the men died in less than two years and also 68·4 per cent. of the women. Four women were still alive, of whom one was examined six years before. These differences following sex and social position appear to indicate that the want of hygienic care and alcoholism play an important part in the curability of chronic nephritis. The age of the patients varied from six to 70 years, the great majority having passed 40 years. Two only were syphilitic; they survived, one three months and the other two and a quarter years. The author concludes that the prognosis as to life is very serious but not so much so as is generally believed, even in the chronic forms of renal affections and there is hope, she contends, of ameliorating the sufferings as well as prolonging the life of the patient. It must be noted that no mention is made in the abstract from which I quote whether or not Mdlle. Possaner includes the nephritis of pregnancy in her cases.

Dr. E. O. Belt of Washington has collected and tabulated from the literature of the subject and his own practice and that of other surgeons 419 cases in which the continuance of life after the recognition of the retinal lesions had been noted. Of cases in private practice 62 per cent. died in the first year and 14 per cent. lived more than two years. Of cases in hospital practice 85 per cent. died in the first year and only 6 per cent. lived more than two years. Of all cases 65 per cent. died in the first year and 6 per cent. lived more than two years. One patient had survived 17 years but several surgeons of larger experience had seen none who survived more than two years. The better prognosis in private cases is to be ascribed to superior hygienic surroundings.[3] Dr. C. S. Bull, before the American Ophthalmological Society in 1886, presented an analysis of 100 cases of retinitis occurring in the course of Bright's disease. He regarded the prognosis of life as very unfavourable. Out of the exact total of 103 cases collected during 13 years 86 had died, 57 during the first year and 12 during the second year; of the 17 still living 14 were seen during the last six months and one had been seen seven years previously. Dr. Gruening stated also that he had found in 100 collected cases that none had lived over two years after the diagnosis of albuminuric retinitis had been made.

In my previous paper to which reference has been made eight cases were mentioned. The ages of these were 37, 34, 56, 59, 31, 66, 23, and 39 years. Five were males and three were females and the period elapsing from the time when first the retinal disease was recognised to death was as follows: 6 weeks, 4½ months, 5½ months, 10 months, 2½ months, 5½ months, 2 months, and 14 months. These were all private cases except one.

With a view to ascertain how far my experience

Table of Cases of Albuminuric Retinitis in Bright's Disease.

No.	Sex.	Age.	Date when first seen.	Date of death when ascertained.
1*	M.	37	Nov. 29th, 1887.	Jan. 12th, 1888.
2*	M.	34	August 19th, 1887.	Jan. 2nd, 1888.
3*	M.	56	Jan. 8th, 1884.	June 27th, 1884.
4*	M.	59	May 7th, 1883.	April, 1884.
5*	F.	31	Nov. 22nd, 1881.	Feb. 3rd, 1882.
6*	F.	66	Oct. 28th, 1886.	March, 1887.
7*	F.	23	—	Six to eight weeks after diagnosis.
8*	M.	39	August 31st, 1875.	Jan. 7th, 1877.
9	M.	60	July 18th, 1899.	Oct. 13th, 1901.
10	M.	57	July 23rd, 1900.	July 11th, 1902.
11	F.	35	March 10th, 1891.	Living.
12	M.	36	July 13th, 1903.	,,
13	M.	24	Dec. 31st, 1887.	Could not ascertain it.
14	M.	48	Nov. 9th, 1897.	March 21st, 1898.
15	M.	45	Feb. 15th, 1893.	January, 1900.
16	F.	54	July 11th, 1894.	Could not be ascertained.
17	M.	55	Sept. 3rd, 1892.	April 17th, 1895.
18	F.	45	Jan. 7th, 1897.	Living.
19	M.	50	June 2nd, 1897.	March 15th, 1898.
20	M.	33	Feb. 3rd, 1890.	March 10th, 1890.
21	M.	36	Nov. 11th, 1889.	January or February, 1890.
22	M.	51	Oct. 17th, 1892.	Nov. 26th, 1892.
23	F.	58	Dec. 22nd, 1890.	April 13th, 1891.
24	F.	39	March 15th, 1895.	August 28th, 1895.
25	M.	57	July 7th, 1894.	Oct. 24th, 1894.
26	M.	47	July 13th, 1893.	Sept. 18th, 1893.
27	F.	39	March 30th, 1893.	Dec. 9th, 1893.
28	M.	42	Feb. 19th, 1898.	January, 1899.
29	M.	50	March 30th, 1904.	Sept. 7th, 1904.
30	F.	30	Feb. 14th, 1900.	Dec. 14th, 1901.
31	F.	35	June 12th, 1901.	Jan. 4th, 1904.
32	M.	54	July 22nd, 1903.	October, 1904.
33	M.	38	Oct. 26th, 1894.	April, 1899.
34	F.	41	Sept. 22nd, 1896.	Could not be traced.
35	F.	42	Feb. 9th, 1899.	,,
36	F.	32	Nov. 11th, 1902.	,,
37	F.	20	June 7th, 1897.	,,
38	F.	44	July 24th, 1894.	,,
39	M.	54	Oct. 15th, 1894.	,,
40	F.	69	Nov. 10th, 1892.	,,

* These are the 8 cases recorded in my previous paper.

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[2] On the Duration of Life after the Appearance of Albuminuric Retinitis, Annales d'Oculistique, 1894, p. 362.

[3] American Medical Association, 1895, Ophthalmic Section, abstracted in Ophthalmic Review, 1896, p. 58.

else noteworthy except that the tongue was dry and furred. Subsequent entries note especially extreme restlessness—"rolling about the floor"; the patient was only partially conscious. He was fed by the tube and the urine was drawn off. There were sordes on the lips and teeth. He got gradually feebler. On Feb. 3rd the pulse was 90, scarcely perceptible, the temperature was 98° F., the face and lips were dusky, and respiration was rapid. There was low muttering delirium. Death took place on Feb. 4th, ten days after admission.

Necropsy.—A post-mortem examination was held on Feb. 6th at noon. The skull cap was deeply injected and the dura mater was strongly adherent to either side of the middle line. The pia-arachnoid stripped normally, there were no erosions of the cortex, and the gyri were well arranged and of good size. All parts of the brain, including the grey and white matter, were extremely congested. There was no excess of cerebro-spinal fluid. Both lungs were congested. The brain weighed 58 ounces (probably with soft membranes). Nothing else was noteworthy. There was no evidence of syphilis in the testicles or elsewhere. This case during life was regarded as possibly one of dementia paralytica but there was nothing in the post-mortem appearances to indicate this disease.

CASE 5.—The patient was a married man, aged 51 years, a hosier. It was his first attack. He was admitted to the *asylum on May 13th, 1905. His family history was free* from disease of any importance. With regard to his personal history, he had had influenza "this year and many times." The cause of his present illness was believed to be religious ("revival") excitement; its duration was 14 days prior to admission. The following is a summary of the medical certificate of admission: "Religious mania, sleeplessness, restlessness." On admission the patient looked at least ten years older than he was; he was feeble and greatly emaciated. No cardiac murmur was heard; his pulse was feeble (120). The tongue was coated. He was very restless and resistive and was in a dazed condition. He refused food and was fed by the tube. He was quite incoherent. He passed evacuations beneath him. He remained in this condition until death occurred at 2.15 A.M. on the 17th (four days after admission). On the 16th the morning temperature was 99·4° and the evening temperature was 100°.

Necropsy.—A post-mortem examination was held on the 18th at 1.45 P.M. Permission was given to examine the head only. Nothing abnormal was noted excepting that the pia arachnoid peeled in large sheets (not opaque), the brain tissue was soft and œdematous, and the grey matter was but little congested. The weight of the brain with soft membranes was 55 ounces. This case resembled the others clinically. The necropsy was not, however, complete, as in the previous cases.

The above cases are, I think, best placed under the heading of "acute delirium" or "acute delirious mania." In three of them the marked congestion of the meninges and cerebrum and marked softening of the latter which are recorded in descriptions of acute delirium were not present. The brain-weights were, however, increased in all, pointing to œdema. The chief clinical features of these cases are, I think, the profound disturbance of consciousness, the restlessness (a constant movement, with resistance and without violence, the patient being recumbent), and the adynamic condition. This last rapidly increases and, in my experience, treatment is commonly of no avail. I believe that subcutaneous injections of sterilised salt solution should be tried more freely in these conditions, with the object of diluting and eliminating toxin. Hitherto I have not injected more than 500 cubic centimetres subcutaneously at a time, using Hayem's solution (seven grammes of common salt to one litre of water) every other day, sometimes daily, this being the method described by Jacquin,[2] whose article first drew my attention to this treatment. Dr. Mosher of the Albany Hospital, New York,[3] injects as much as 1700 cubic centimetres twice daily. Some prefer to introduce the solution into the bowel. I am not aware that there is sufficient experience to decide which method, if either, gives the better result. The first named is certainly the more troublesome, involving disinfection of apparatus.

In two of the above cases the mental illness was dated back by the friends to an attack of influenza and in two others there was intense religious excitement, both of which are causes of acute delirium recognised by authors. The description given by the best English and foreign text-books of the condition above portrayed sufficiently demonstrates our lack of knowledge of its pathogenesis. Such descriptions commonly refer to the probability or certainty of toxæmia in acute delirium, even where the disease occurs independently of a specific malady, such as typhoid fever or pneumonia, but little or no information is forthcoming as to the nature of the toxin and as to its source beyond the statement that the latter may be exogenous or endogenous. As far as I am aware there is no record of the discovery of a specific organism in acute delirium apart from the observations of the Italian observers, Bianchi and Piccinino, who found a bacillus in the blood, an observation which is in need of ample confirmation. Cases of auto-intoxication with mental disturbance in diseases of the kidneys, the liver, the heart (cyanosis), and other organs have been described[4] and the gastro-intestinal tract is commonly regarded and perhaps somewhat too familiarly referred to as a source of endogenous toxins, on which theory the stomach has been washed out and the intestines have been freely treated with such drugs as naphthalene with a view to disinfection, in the feasibility of which, as regards the bowel, I disbelieve. There is another form of auto-intoxication to which Mott has called attention[5] and which consists in poisoning by the products of metabolism of nerve substance, such as choline. *Choline, it appears from the source referred to, does not* normally exist in the blood in sufficient quantities to be recognisable but can be detected in the blood "practically in any degenerative process affecting the nervous system if extensive enough." Its escape into the blood in large quantities and its accumulation therein may cause auto-intoxication. As, however, choline is not a powerful toxic substance (Mott found it in abundance in a case of disseminated sclerosis, which is certainly not a type of acute toxic disease) it would appear improbable that this substance could produce such a rapid and fatal disease as acute delirium. But other products of the decomposition of the proteid matter of the nervous system may be more active poisons.

In diseases caused by exogenous toxins, such as the infectious fevers, there is as a rule a decided rise of temperature, whereas in cases of acute delirium the temperature is often but slightly raised, sometimes not at all. This point, together with the consideration that the latter disease is sometimes referable to a psychical cause with attendant physical reduction, would rather indicate that it is of the nature of an auto-intoxication. I consider that such cases as the above constitute one of many arguments for the establishment of a psychiatric department in connexion with our great teaching hospitals. For the conditions necessary for research in the more obscure fields of psychological medicine, which conditions include proper facilities for animal experimentation and for collaboration with workers in allied departments of medical science, are not to be found, and in my belief will never be established, in county asylums in this country.

Carmarthen.

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[2] Annales Médico-Psychologiques, May-June, 1900: Du Serum Artificiel en Psychiatrie.

[3] Third Report of the Department for Mental Disease, Albany Hospital, 1905.

[4] As, for example by Jacobson, "Ueber Auto-intoxications-Psychosen," Allgemeine Zeitschrift fur Psychiatrie, Band li., Heft 2.

[5] Croonian Lectures, On the Degeneration of the Neurone 1900. Also Mott and Halliburton in Philosophical Transactions of the Royal Society.

THE DURATION OF LIFE AFTER THE APPEARANCE OF ALBUMINURIC RETINITIS.

BY SIMEON SNELL, F.R.C.S. EDIN.,
OPHTHALMIC SURGEON, ROYAL INFIRMARY, SHEFFIELD; PROFESSOR OF OPHTHALMOLOGY, UNIVERSITY OF SHEFFIELD.

THE prognostic significance of albuminuric retinitis may well be regarded as a subject of considerable importance. Retinitis occurs in about 30 per cent. of all cases of Bright's disease. "This percentage is subjected to very slight variation by different observers. For instance, Norris stated that 25 per cent. of cases of nephritis were attended by retinal changes; Eales demonstrated by his statistics that its frequency was 28 per cent.; while Galezowski places it at 33 per cent. It seems to be more frequent in males than in females."[1]

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[1] Albuminuric Retinitis, by L. Webster Fox, A.M., M.D. New York Medical Journal, June 25th, 1904.

The abdominal wound was then closed except at its lower end, where a large drainage-tube was inserted running down to the bladder. A No. 7 English catheter was tied into the bladder.

The chief points in the subsequent history of the case were as follows. The tube was removed on the fourth day. The wound healed by first intention and the stitches were removed on the tenth day. On the second day there was some vomiting but this soon passed off. On the third day the bowels acted freely, nourishment was well taken, the pulse improved and the temperature remained normal. The bladder was washed out daily with boric acid lotion and the catheter was cleansed and replaced. There was some hæmaturia with a few clots on the first day, but the urine soon passed clear. On the seventh day the catheter was removed. Urine was passed normally from this date. There was rectal incontinence at first, which rendered the nursing very difficult; this passed off after a week. During the first 48 hours there were much pain and restlessness. On the third day the latter became extreme, the patient developed hallucinations of sight and hearing, saw dead bodies all round him and imagined that the attendants were going to murder him. The necessary rest was only obtained by repeated injections of morphine. After about a week he became quieter and on the twenty-first day he was allowed up. There has been no further local trouble. The patient now wears a double inguinal truss, the right pad of which was made specially large and fitted with a depression in its lower part to prevent injurious pressure on the bladder.

Hernia of the bladder is sufficiently uncommon to be of special interest and I am encouraged to publish the case by the kind permission and help of Dr. Robert Jones, medical superintendent. In this case the greater portion of the protruded viscus was extraperitoneal and, taking into consideration how much more adherent it was than the intestinal hernia, was probably of longer duration than the latter. On the other hand, the dragging of a hernial sac on the parietal peritoneum is far more likely to cause a hernia of the bladder. The fact that on passing the finger into the abdomen through the hernial sac the peritoneum was felt to be clear on all sides, correctly interpreted, should have helped towards the true diagnosis, which would have been rendered certain by passing a catheter during the operation.

The peculiar solid, elastic feel of the protruding portion of the wall of the bladder in no sense suggested a hollow viscus; and I am not aware of any text-book description of hernia of the bladder which points out this feature. Yet in reconsidering the case in the light of experience the folded and perhaps hypertrophied muscular coat may, in the absence of distension by urine, be expected to give rise to this sensation of firmness and solidity.

Claybury.

TWO CASES OF ACTINOMYCOSIS.

BY DOUGLAS DOUGLAS-CRAWFORD, M.B. EDIN., F.R.C.S. ENG.,

HONORARY SURGEON TO THE LIVERPOOL STANLEY HOSPITAL AND LECTURER UPON SURGICAL AND APPLIED ANATOMY IN THE UNIVERSITY OF LIVERPOOL.

IN THE LANCET of Oct. 29th, 1904, p. 1204, five cases of actinomycosis are recorded. During the past year I have had two cases under my care, each of which presents some points of interest.

CASE 1.—The patient was a ship's surgeon, aged 29 years, who bruised his left flank against a stanchion on the homeward voyage from the Amazon on Nov. 28th, 1903. Within a fortnight two small papules appeared over the bruised area but remained stationary for some time. These papules were associated with what the patient regarded as a cellulitis and the pain was so severe that he commenced hypodermic injections of morphine, gradually increasing the dose until he was taking eight grains per diem. Three months later—in February, 1904—the lesion began to spread rapidly until it reached the crest of the ilium, then again remained quiescent, but just before he came under my care it had extended over the buttock, inwards towards the crest of the os pubis, and upwards over the lower ribs. The patient was admitted to the Stanley Hospital on July 15th, 1904. He was very emaciated and tremulous—probably due to the morphine habit—and his urine contained a trace of albumin. The area of skin affected is somewhat indistinctly shown in the illustration but in addition to this there were two or three independently affected areas on the left thigh. The skin over the site of the lesion was purplish in colour, indurated in some parts and œdematous in others. Small sinuses were scattered over the affected area, and here and there were seen pustular elevations, any one of which upon pressure discharged a greyish-coloured pus and left a narrow superficially burrowing sinus. The pus was examined microscopically and although the presence of the ray fungus was not perhaps absolutely proved yet I decided to excise the whole of the infected area, for I felt I had ample grounds for excluding the other two diseases which give rise to somewhat similar chronic ulcerations—viz., tubercle and syphilis. The lesion was limited entirely to the skin except at one spot just over the external abdominal ring and here the aponeurosis of the external oblique was evidently diseased. The extensive raw surface was somewhat narrowed by a plastic operation but a considerable area was left to granulate. The patient suffered severely from shock the same evening but after that made rapid progress; we had, however, some difficulty with portions of the scar tissue which time after time became hæmorrhagic and broke down, leaving a weak ulcer. However, after energetic scraping we finally obtained a sound healthy scar five months after operation. Microphotographs kindly taken for me by Dr. R. E. Kelly showed the fungus in two forms—one simply the mycelium imbedded in a hyaline material and the other a radial arrangement with hyaline clubs at the periphery.

To show the extent of skin affected in Case 1.

CASE 2.—This patient was sent to me by Dr. T. F. Williams of Cefnybedd. The patient gave the following history. Six weeks previously a painful lump appeared beneath the right half of the mandible just after an attack of quinsy. This was attributed to a carious molar but its extraction had no effect upon the pain and the swelling rather appeared to increase. Upon examination the swelling was found to extend from the angle of the jaw on the right side across the middle line in front and beyond the level of the hyoid bone below; the skin over it was purple and œdematous and dotted all over with narrow sinuses and upon pressing one of them a creamy pus was discharged containing a very considerable number of small granules. The diagnosis was fairly obvious and was confirmed by examination of a "crushed granule" under the microscope. The patient had difficulty in opening his mouth, the jaw was not thickened, and the site of the extracted tooth appeared healthy. I operated on Oct. 1st, 1904. The operation consisted in excising the whole of the œdematous mass and meant the removal of the submaxillary gland, the digastric (anterior belly) and mylohyoid muscles and the lower third of the internal pterygoid muscle. The mandible was thoroughly exposed and found to be healthy. The point of entrance of the fungus must have been through the mucous membrane accorded with that of other observers I have collected all the instances in my private case-books subsequently to the date of publication of my first paper. I find records of 35 cases. Three of these must be at once excluded as the retinal affection was not typical. One of these died, however, about a couple of years later, one is living after three years, and the other cannot be traced. Of the remaining 32 suitable for our purpose I am unable to trace nine, thus leaving 23 (see table). Three are known to be living. Of these, one a man, aged 36 years, was first seen in July, 1904; the kidney affection had been previously recognised. Two were women and both had suffered during pregnancy. One, aged 35 years, seen in March, 1891, recovered vision partially, but became affected again in the next pregnancy, two years later, with resulting blindness. The other woman, aged 45 years, seen after the birth of the first child, in January, 1897, made a good recovery. These, with other instances of the albuminuria of pregnancy, will be considered again later. The remaining 20 were ascertained to have died as follows: two at the end of one month, two at two months, one after three months, two after four months, one after five months, one after six months, two after nine months, one after 12 months, one after 15 months, one after 22 months, two after 24 months, one after 28 months, two after 32 months, and one after four and a half years. The average duration of life in these cases is 14½ months, but added to the eight previously recorded, making a total of 28, the average is barely one year. This average (12 months), compared with Dr. Miley's of four and a half months for hospital patients, fully bears out the contention of the less fatal significance of renal retinitis in private patients. The period is, nevertheless, a very brief one and my cases, as well as the observations of others to which allusion has been made, clearly show that the appearance of changes in the retina is a sign-post of the systemic havoc wrought by the chronic nephritis and that it portends a fatal termination, it may be in a few months, and rarely longer than two years. The renal disease associated with pregnancy is rightly excluded from consideration in this connexion. For, fortunately, it not infrequently happens that with the termination of gestation the albumin disappears and the retinal disease clears up, though often vision may remain seriously affected and it is recognised that the condition is not fatal to life in the same way as in chronic Bright's disease. Among my cases is one instance (No. 31) of a woman who was affected during pregnancy. The renal condition, however, persisted, and it did not appear to me to fall precisely among ordinary cases of Bright's disease with pregnancy and it has not therefore been excluded.

Sheffield.

ON THE CHEMICAL MECHANISM OF GASTRIC SECRETION.[1]

By J. S. EDKINS, M.A., M.B. Cantab.,
LECTURER ON PHYSIOLOGY IN THE MEDICAL SCHOOL OF ST. BARTHOLOMEW'S HOSPITAL, LONDON.

It has long been known that the introduction of certain substances into the stomach provokes a secretion of gastric juice. This is regarded as in no sense depending upon mere mechanical stimulation of the mucous membrane and it has been thought that the nervous mechanism of the gastric glands may be susceptible to certain local chemical stimuli. On the analogy of what has been held to be the mechanism at work in the secretion of pancreatic juice by Bayliss and Starling it is probable that, in the process of absorption of digested food in the stomach, a substance may be separated from the cells of the mucous membrane which, passing into the blood or lymph, later stimulates the secretory cells of the stomach to functional activity. The following observations support this view. If an extract in 5 per cent. dextrin of the fundus mucous membrane be injected into the jugular vein there is no evidence of secretion of gastric juice. If the extract be made with the pyloric mucous membrane there is evidence of a small quantity of secretion. With dextrin by itself there is no secretion. Extracts of fundus mucous membrane in dextrose or maltose give no secretion; extracts of pyloric mucous membrane give marked secretion; dextrose or maltose alone brings about no secretion. If extracts be made with commercial peptone it is found that no secretion occurs with the fundus mucous membrane, a marked secretion with the pyloric mucous membrane; the peptone alone gives a slight secretion. If the extracts be made by boiling the mucous membrane in the different media the effect is just the same—that is to say, the active principle, which may be called "gastric secretin," is not destroyed by boiling.

Finally, it may be pointed out that such absorption as occurs in the stomach apparently takes place in the pyloric end. With the pig's stomach, in which the true cardiac region differs from the typical fundus region in having only simple glands as in the pyloric, extracts of the cardiac region in general have the same efficacy in promoting secretion as do pyloric.

St. Bartholomew's Hospital.

A CASE OF STRANGULATED HERNIA OF THE SMALL INTESTINE AND BLADDER.

By G. F. BARHAM, M.B., B.C. Cantab., M.R.C.S. Eng.,
ASSISTANT MEDICAL OFFICER, CLAYBURY ASYLUM.

The patient, a male, aged 70 years, was admitted into Claybury Asylum on March 5th, 1904, suffering from senile melancholia. He was restless, apprehensive, and had delusions of persecution and was impulsive at times. There was well-marked arterio-sclerosis with some cardiac hypertrophy. The lungs were healthy. The patient had a double inguinal hernia, on the right side direct and irreducible, on the left oblique and reducible. He was wearing an old double inguinal truss.

On March 9th he was visited at 9 A.M. He had vomited once early in the morning and was complaining of abdominal pain. He was lying on his back with the legs drawn up and was in evident distress. There was frequent retching; his pulse was 90, small and hard; his temperature was 98° F. There had been no action of the bowels for 24 hours and he had passed no urine during the night. There was a hard, tender swelling of the size of an orange, just above and to the right of the symphysis pubis; this was dull on percussion and conveyed no impulse on coughing. There were no other signs and the left hernia was easily reducible. The case was clearly one of strangulated hernia. A catheter was passed and about ten ounces of urine were withdrawn. At 11 A.M. chloroform anæsthesia was induced. With the usual antiseptic precautions the skin was incised over the swelling in a vertical direction, and after dividing and reflecting the various layers a hernial sac was exposed. The neck of the sac was then defined. It was easily separated from its surroundings except on its lower aspect where it was closely adherent to an ill-defined swelling, which, together with it, was protruding through a small opening in the abdominal wall. The sac was next opened and found to contain some blood-stained fluid, a small clot, and a knuckle of small intestine. After enlarging the ring the bowel could be drawn down and being in a healthy condition was returned into the abdomen. The sac was then held up out of the way with artery clips. As above stated, the sac was attached below to a swelling which was of about the size of a testicle, firm to the touch, and intimately adherent to its surroundings; it was covered by muscular and old inflammatory tissue and could not be defined at all clearly. On passing the finger into the abdomen through the hernial sac the peritoneum was found clear on all sides; the swelling could be felt passing through the ring but was not traceable beyond. In attempting to define this structure with the knife handle what appeared to be a hernial sac containing a little fluid was exposed; this was nicked and the opening was enlarged, when a small quantity of urine escaped. Through this opening a finger could be passed through the abdominal ring into the bladder. Every effort was made to keep the two parts of the wound separate. The hernial sac was dissected from the bladder as far as possible, ligatured, and the distal portion was excised. The bladder was closed by a continuous catgut suture passing through the outer coats and the whole wound was cleansed thoroughly with a 1 in 20 carbolic lotion, subsequently with boric acid lotion.

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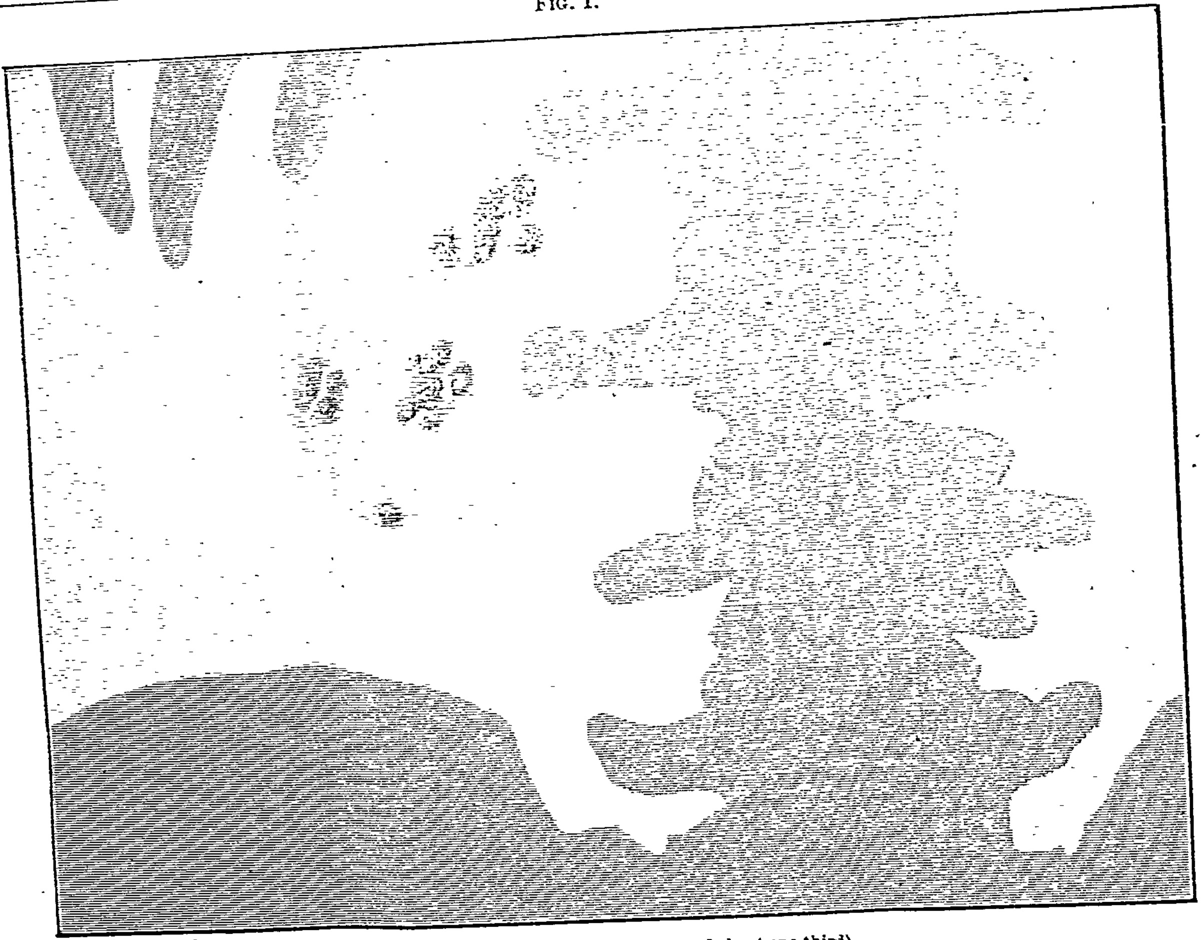
[1] A paper read before the Royal Society on May 18th, 1905.

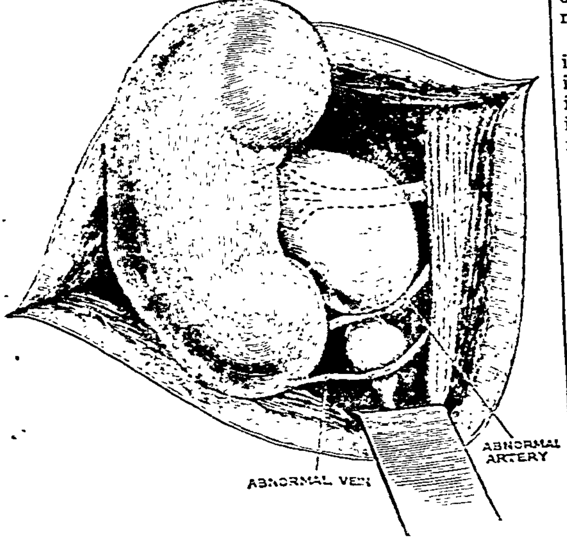
FIG. 1.



Appearances seen in radiography (reduced about one-third).

abnormal artery and vein passing to and from the lower pole of the kidney (see Fig. 2). The constricting artery was double ligatured and cut and the vein was treated in a like manner. The kidney was incised along its outer border. It was explored with the finger inserted into the incision, and 16 small calculi were separately removed. (The number and shape of these calculi corresponded with the shadows shown in the skiagrams.) The wound in the kidney was then closed by five sutures of silk and the small incision in the pelvis was sutured. The kidney was replaced within the abdomen and the wound was closed. The urine for four days contained more blood than is usual after such an operation, but in other respects the recovery was normal. The stitches were removed from the wound on the tenth day.

FIG. 2.



Showing abnormal vascular supply.

Note.—The bulging below the vein, as shown in the diagram, is incorrect.

Remarks.—The above case is one of very considerable interest from many points of view. It is of special interest in that it illustrates in a remarkable manner the increasing accuracy and exactness of the evidence which is now being furnished by radiography in cases of suspected renal calculus—evidence which with the improvement in the manufacture of tubes and the sensitiveness of the plates has in many cases rendered diagnosis a certainty. It is of pathological interest in that it shows how an abnormal vascular supply may interfere with the functions of the kidney; and it is of interest clinically in raising the question in what way and to what extent the earlier symptomatic history may be explained by the anatomical variation found at the operation.

THE CARDIFF INFIRMARY.—The sixty-eighth annual report of the Cardiff Infirmary has just been published. An interesting account is given of the growth of the institution since 1837, when there were 42 in-patients and 1074 out-patients. The income at that time was £617 and the expenditure £759. In 1904 2144 in-patients were admitted and 19,525 out-patients treated. The income amounted to £11,476 and the expenditure to £13,130. During the last ten years the annual income of the infirmary has only once exceeded the annual expenditure, and that was in 1903.

to the inner side of the angle of the jaw, its further path being along the internal pterygoid into the submaxillary triangle. The patient made a good recovery, the wound being perfectly healed when I saw him on Dec. 5th, two months after the operation, and all he suffered from was a slight facial paralysis due to division of some of the cervico-facial branches at the time of the operation. Microphotographs were taken from sections but in none did we find the typical radial arrangement with hyaline bodies, as shown in one of the photographs from the first case.

With regard to treatment, in both cases I excised the whole area affected, considering it more satisfactory than scraping, and in the second case it would hardly have been possible to remove the whole of the disease with the curette. Operation was undertaken so soon after seeing both patients that one cannot say much as to the value of iodide of potassium. The first case had none but in the second I continued the administration of 60 grains every 24 hours for a period of six weeks and in addition irrigated the wound with a solution of iodine during the first week and later injected iodopin into two or three suspicious-looking spots in the deeper parts of the wound and packed the cavity with gauze soaked in iodopin. I think the patient derived some benefit from this method of dressing and he was able to leave the nursing home in three weeks with a healthy granulating surface.

As to the mode of infection the first case presents some difficulty. A few cattle were carried on board ship for the use of the crew and part of the duties of the patient's steward was to feed them. It is possible that the infection may have been conveyed through the handling of my patient's clothes. The small isolated spots, I feel convinced, were produced by the patient himself through the medium of his hypodermic syringe. The second case is fairly simple. The patient is a butcher; often keeps his cattle for a few days before slaughtering them and superintends the feeding himself.

There is a marked difference in the rate of growth in these two cases, the first being fortunately extremely chronic, and it is of interest to note that in this case were seen the hyaline bodies which are not usually found in human actinomycosis. Attempts were made both by Dr. Kelly and myself to obtain cultivations, but they were unsuccessful, as were also some inoculation experiments upon guinea-pigs.

P.S.—I have seen both patients within the last few weeks; both remain perfectly well, but my first patient complains of anæsthesia of the skin over the crest of the ilium and just over the region of the os pubis.

Liverpool.

NATIONAL SOCIETY FOR EMPLOYMENT OF EPILEPTICS, THE COLONY, CHALFONT ST. PETER.—The twelfth annual meeting of the governors of this society was held on July 10th at the London offices, Denison House, Westminster. The chair was taken by Mr. E. Montefiore Micholls and the reports of the honorary medical staff and the executive committee for the year 1904 were received and adopted. From the former report it appears that the general health of the colonists during the year was very good. There was entire freedom from any epidemic or contagious disease and only two colonists died during the year. Medicinal remedies, it is pointed out, form only one item in the treatment of this malady, the most complete treatment being that which is carried out in such institutions as the Chalfont Colony, "where the epileptic is guided along hygienic lines in respect of the suitable quantity and quality of food, the proper allotment of work and rest, and the carrying out of those physical exercises consistent with the malady." The report of the executive committee shows the past year to have been one of great progress and extension, a new home for the special benefit of Hampshire cases having been opened during the year, and also an administrative house and various other buildings. Notwithstanding these additions, however, the accommodation is stated to be still entirely insufficient to meet the demand for admission, especially as regards the women's department, where the congestion of applications is so great that unless additional accommodation is provided each applicant will have to wait several years before her turn for admission will come, the malady in the meantime becoming hopelessly confirmed, so that the remedial aims of the colony would to a great extent be defeated. Funds for extension are therefore urgently needed.

A Mirror
OF
HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum propriae collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

THE MIDDLESEX HOSPITAL.

A CASE OF HYDRONEPHROSIS AND RENAL CALCULI, IN WHICH 16 SMALL CALCULI WERE DETECTED BY THE X RAYS AND IN WHICH THE HYDRONEPHROSIS WAS DUE TO CONSTRICTION OF THE PELVIS OF THE KIDNEY BY AN ARTERY AND A VEIN PASSING TO ITS LOWER POLE.

(Under the care of Mr. HENRY MORRIS.)

FOR the notes of the case we are indebted to Dr. W. Sidney Sweet, house surgeon.

The patient, a married woman, aged 29 years, suffered from pain in the abdomen, nausea, and occasional vomiting for nearly ten years. At first she ascribed these symptoms to indigestion; as a girl she was anæmic. About four years ago she sought relief for pain in the left side (loin) and vomiting and was sent to a London hospital. There she was under the care of a surgeon who operated upon her and fixed the left kidney. After the operation her symptoms improved for about a year. She married and had two children, the last being born three months before admission to the hospital. A month after the birth of the last child she had a severe attack of pain in the left side extending down into the lower limb on that side. Subsequently she had other attacks which lasted from two to three hours and of such severity that she had to go to bed. She also had complained of a smarting sensation after micturition and some difficulty in starting and controlling the act. There was also a history of frequency of micturition both nocturnal and diurnal at times. On May 1st she was admitted to the Middlesex Hospital with the above symptoms. The urine was alkaline, with specific gravity varying from 1012 to 1020; there was a slight amount of albumin and a small quantity of pus, but no blood. On the 8th the urine contained a large quantity of pus. The patient was examined under chloroform and the bladder was sounded with negative result. The generative organs were found to be quite normal. The urine was examined for tubercle bacilli but none were found.

On May 16th the patient was transferred to the care of Mr. Henry Morris. She was then pale and thin and complained of pain in the left side. Her pulse was weak but regular and not unduly frequent; her temperature was normal. The urine was as described above. She was passing on the average 34 ounces in the 24 hours and there were five grains of urea to the ounce. She was radiographed and the skiagram showed a number of small but definite shadows arranged in groups of five, four, six, and one respectively—16 in all—and measuring on an average three millimetres in diameter. Each was quite regular and rounded (see Fig. 1).

On May 19th Mr. Morris operated. An incision was made through the old scar in the left loin and some strong fibrous bands were divided which were found connecting the kidney with the lumbar parietes the result of the previous operation of nephropexy. On exposing the kidney it was found to be small and its pelvis to be dilated considerably. A small incision was made in the pelvis and a ureteral bougie was passed easily along the ureter into the bladder. Less than half-way up the dilated renal pelvis a branch of the renal artery of considerable size crossed it obliquely on its posterior aspect. Parallel to the artery, and about half an inch lower down, was a branch of the renal vein. These vessels were running to and from the lower pole of the kidney respectively. The artery was found to be lying in a groove on the wall of the pelvis of the kidney. Above it the pelvis was dilated. There could be no question but that here was a hydronephrosis resulting from obstruction in the pelvis of the kidney as the result of a constriction caused by an connexion with the orbital cyst. From a clinical point of view the diagnosis was by no means easy, and the differentiation from meningocele was a matter of considerable uncertainty and anxiety. The pathological interest centred in the very free communication that existed between the interior and exterior of the globe by a wide coloboma at the posterior pole, a condition which permitted the free passage of the fluid secreted by the well-developed ciliary processes into the cyst, producing the increase in size which necessitated operation.

The following case and card specimen were shown:—

Mr. SECKER WALKER: Diagrammatic Model showing the path of light rays in various forms of astigmatism.

Mr. ORMOND: Keratomalacia.

OBSTETRICAL SOCIETY OF LONDON.

Endothelioma of the Uterus.—Malignant Embryoma of the Ovary.—Extra-uterine Gestation.—Large Fibrotic Uterus with Calcification of the Arteries.—Small Intestine Adherent to the Stump of an Ovarian Tumour.

A MEETING of this society was held on July 5th, Dr. W. R. DAKIN, the President, being in the chair.

Mrs. SCHARLIEB, M.D., described a case of Endothelioma of the Uterus in a woman, aged 50 years, who for 11 years had noticed an abdominal tumour, associated with hæmorrhage and bladder symptoms, and thought to be a fibroid. It grew rapidly and at the time of operation reached two and a half inches above the umbilicus. It was removed, together with the uterus and appendages. The patient made an uneventful recovery and remains perfectly well now, more than two and a half years afterwards. The tumour weighed 44 ounces. The uterine cavity was enlarged and measured three and a quarter inches in length, the mass bulging into it from the upper part. The mass rose up from the fundus in the form of a cyst of the size of a six months' pregnancy. The cyst contained spontaneously coagulating slightly yellow fluid. The wall of the main cyst contained other cysts, varying in size from that of a cherry to that of a hen's egg. They were filled with clear fluid; their walls were perfectly smooth and lined by a definite membrane, visible to the naked eye. The cysts were lined with a single layer of flat angular cells resembling endothelium. In certain places, however, especially in a definite area in the largest cyst, small masses of new growth projected into the cavity. It was thought that the tumour was probably a lymphangioma, with small nodules of endotheliomatous new growth in the walls.

Mr. J. H. TARGETT and Mr. H. T. HICKS gave an account of two cases of Malignant Embryoma of the Ovary, including references to the recent literature of the subject. It was remarked that such growths were usually included in the group of teratomata but on account of their close relationship to the dermoid tumours of the ovary Mr. Targett and Mr. Hicks preferred the title of malignant embryoma. They offered the following conclusions:—1. Malignant embryomata of the ovary are rare. They usually occur in young adults but may be met with in childhood. 2. The tumours may attain a large size; they are usually pedunculated and devoid of adhesions unless the pedicle has become twisted. 3. Secondary growths are frequently restricted to infection of the peritoneum. They may present the same composite structure as the primary growth or be wholly composed of sarcomatous elements. 4. Pain and ascites are constant symptoms; ascites may develop early, even before actual infection of the peritoneum. In several instances a diagnosis of twisted ovarian cyst has been made. 5. Ovarian tumours exhibiting an irregular disposition of embryonic elements are very liable to be malignant.

Dr. R. BOXALL showed an Extra-uterine Gestation Sac which had ruptured in the fifth month of pregnancy.—Dr. G. E. HERMAN said that after the mid term of pregnancy rupture of the sac became rarer and rarer as the months went on. There was a broad contrast between the first and second half of ectopic pregnancy: in the first half rupture was frequent and the risk of operation was small; in the second half rupture was rare and the risk of operation was great.

Dr. J. S. FAIRBAIRN showed the Uterus and Appendages removed by abdominal hysterectomy from a woman, aged 50 years, as a well-marked example of arterial degeneration. The naked-eye appearance of the uterus suggested a general fibrosis. Further examination showed a distinct increase of fibrous tissue and calcification of some of the uterine arteries. This condition was associated with menorrhagia and consequent anæmia and loss of strength.—Dr. H. M. MACNAUGHTON-JONES remarked that in these cases of calcification it was noticed that there was previous hyaline degeneration.—Dr. AMAND J. M. ROUTH asked whether there was any explanation of the menorrhagia, which was a constant symptom of these cases. With the atrophic mucosa and the sclerosed arteries a diminished rather than an excessive menstrual loss might be expected.

Mr. HERBERT J. PATERSON showed a Loop of Small Intestine Adherent to the Stump of an Ovarian Tumour and remarked that the condition found might be partly accounted for by the presence of chronic peritonitis at the time of operation, but the specimen emphasised the importance of leaving the pedicle with a smooth surface free from knots and especially of obtaining early movements of the intestine.—Dr. HERMAN asked whether anyone had ever opened an abdomen within a few weeks after abdominal section without finding adhesions. He himself had never met with, heard of, or read of such a case. Adhesions were the immediate invariable result of abdominal section and in course of time were absorbed.—Dr. MACNAUGHTON-JONES said that he preferred giving saline instead of calomel when it could be tolerated. He thought the mistake was frequently made of being over-anxious with regard to the bowel.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.—A Clinical Study of Influenza in the Epidemic of 1904–05.—On the Urine Separator of Luys.—Post-anæsthetic Sickness.

A MEETING of this society was held on July 5th, Professor J. CHIENE, the President, being in the chair.

Dr. W. ALLAN JAMIESON showed a case of Granulosis Rubra Nasi. The patient, a boy, aged nine years, who was healthy enough though with rather feeble peripheral circulation, as shown by his hands and feet readily becoming cold in winter, went to the Royal Infirmary on June 17th, 1905. With the exception of slight catarrhal jaundice three years since he has apparently had no illness. Two and a half years ago his mother remarked that the lower half of the nose was distinctly reddened, and beads of sweat poured from it, especially at meal times. There has been little change since then. The redness is made up of fine punctiform elevations, imparting a somewhat granular aspect. Droplets of perspiration stud the part. There were no subjective sensations. On the right side of the nose near the root there is a small spider nævus. An ointment containing sulphur and salicylic acid in vaseline was directed to be rubbed in twice a day, and now (July 6th) the redness is less and the sweating diminished, though the weather has been hot. The disease in all respects corresponds to the description of Jadassohn, MacLeod, and others.

Dr. W. T. RITCHIE exhibited for Dr. G. A. GIBSON two cases of Syringomyelia. In the first case, that of a man aged 55 years, the main features were complete anæsthesia to every form of sensory stimulus over those areas corresponding to the segmental distribution of the eighth cervical and first dorsal segments on the right side and the eighth cervical and first to fourth dorsal segments on the left side, bilateral dissociated anæsthesia from the fifth to the ninth dorsal segments, wasting of the muscles of the thenar eminences in both hands, with fibrillary tremors in those muscles, and a double extensor response. The second case, that of a man aged 44 years, presented dissociated anæsthesia over the left upper and lower extremities, the left side of the face and of the trunk, paralysis of the right cervical sympathetic, and an extensor response on the left side but no wasting or paralysis of voluntary muscles.

Mr. F. M. CAIRD showed: (1) a patient after Excision of the Rectum by Kraske's Method; and (2) a patient after recovery from Purulent Appendicular Peritonitis with Paralysis of the Gut.

Mr. J. M. COTTERILL showed a case of Tumour of the Parotid and another with Perforating Ulcer.

Mr. CHARLES W. CATHCART exhibited (1) a patient after Suture of a recently fractured Patella; (2) a patient after Wiring of a Fractured Femur on account of malposition;

Medical Societies.

OPHTHALMOLOGICAL SOCIETY.

Tubercle of the Iris.—Sympathetic Ophthalmia.—Glioma in More than One Member of the Same Family.—Microphthalmos with Orbital Cyst.

THE annual general meeting of this society was held on July 7th, Mr. JOHN TWEEDY, the President, being in the chair.

Mr. M. S. MAYOU read a paper on Secondary Tuberculosis of the Iris with Spontaneous Rupture of the Lens Capsule. The patient was a boy, aged three years. For some time previously he had been attending the hospital with tuberculous dactylitis. Three weeks before attending the ophthalmic department of the London Hospital his eye had become inflamed. The left eye showed a typical conglomerate tubercle in the upper part of the iris. The pupil was occluded by exudation so that the condition of the underlying lens could not be made out. There was no history of injury. Directly after his admission to the hospital he developed three smaller masses in the iris at the lower part. Under treatment the condition improved and he was sent to the convalescent home; a month later he returned to the hospital with a small hæmorrhage into the anterior chamber and his eye was removed. On pathological examination the mass in the upper part of the iris was seen to be adherent to the posterior surface of the cornea which was buckled inwards by the pull of the underlying cicatricial tissue. Descemet's membrane was perforated and there was some round-cell infiltration of the substantia propria. The iris in the upper part consisted of a mass of fibro-cicatricial tissue adherent to the cornea in front and to the anterior and posterior capsule of the lens behind containing giant cells, but no epithelioid cells or tubercle bacilli were found. There were also several masses of round-cell infiltration in the lower part of the iris making their way outwards towards the canal of Schlemm —the most usual situation for the disease to perforate the globe. The anterior capsule of the lens showed a large gap in its continuity, evidently produced by the softening effect of the tubercle, followed by the cicatricial contraction in the anterior synechiæ. The retina showed several masses of round-cell infiltration similar to that seen in the lower part of the iris, evidently of a tuberculous nature. The special points of interest about this case were: 1. The unusual situation at which the tuberculous mass had invaded the cornea. 2. The spontaneous rupture of the lens capsule. 3. The nature of the exudation into the retina. 4. The general tendency towards cicatrisation in the lesion—a fact which, taken in conjunction with the series of cases reported by Sandford of tuberculous iritis associated with pulmonary tuberculosis, held out hope of successful treatment by tuberculin (Wright's method).—Mr. SIMEON SNELL suggested the injection of iodoform into the anterior chamber as an efficient remedy for tuberculous iritis.—Mr. H. E. JULER considered the presence of giant cells scarcely sufficient proof of tubercle and inquired into the condition of the retina.

Mr. SIMEON SNELL (Sheffield) related the following cases of Sympathetic Ophthalmitis showing itself after Enucleation. The first was that of a boy, aged ten years, who having been knocked down by a horse and trap was picked up unconscious. Besides injuries to the head he had sustained a large wound at the inner side of the sclerotic, reaching forwards through the ciliary region to the cornea. The accident occurred on April 4th, 1904, and enucleation of this eye was performed on April 20th. On May 9th there was sympathetic ophthalmitis, and judging from the account given it must have been present since the 5th. It was a severe instance of the disease showing a great tendency to recurrence but ultimately the patient was able to find his way about and to read large type. At the same time another case was under observation, that of a man, aged 26 years. The left eye had been injured by a kick on June 13th; it had been enucleated elsewhere on June 29th. The injury involved the corneo-scleral junction. He went to Mr. Snell on July 29th when there was marked sympathetic ophthalmitis in the right eye; it had begun on July 22nd. It was a severe type of the disease, the ultimate result being practical blindness. Mr. Snell referred to another case, which he had not previously recorded, of a girl, aged about ten years, for which, however, the dates could not be given precisely. He also mentioned that he had published an instance in the Transactions of the society for 1882. In this, sympathetic ophthalmitis showed itself 32 days after the enucleation and 106 days after the date of injury. The disease was of a mild form and perfect vision was recovered. Mr. Snell mentioned that there were thus four instances occurring in his practice after enucleation. One was of a mild form with perfect recovery and the other three were of a severe type, two becoming totally blind whilst the third partially recovered vision. The report of the society's committee stated that usually the disease in such instances was of a mild form and that out of 30 cases 18 completely and three partially recovered, while nine became blind. Mr. Snell further noted that two of his cases were children, one a boy, and one a girl, aged ten years, the remaining two being men both aged 26 years. The time elapsing after enucleation and the disease showing itself was 16, 23, and 32 days and the period after the original injury was 32, 40, and 106 days. For the fourth case the data on these points were not precise.—The subject was discussed and cases were cited by Mr. JOHNSON TAYLOR (Norwich), Mr. A. W. ORMOND, Mr. D. MARSHALL, Mr. W. B. LAWFORD, Mr. H. SECKER WALKER, Mr. R. W. DOYNE, and Mr. SNELL.

Mr. SNELL also related a case of Sympathetic Ophthalmitis in which normal vision was restored in the exciting and in the sympathising eye. The left eye was injured on Sept. 8th, 1904, but the patient, a man, aged 33 years, was not seen until the 19th. The fragment of steel causing the injury was about a quarter of an inch long and of the same width. The iris prolapsed through a wound in the upper part of the cornea, passing for a little distance into the ciliary region. The prolapsed iris was immediately excised and the edges of the wound were cleared as far as possible of any portions of iris. Subsequent progress was excellent and the eye has not occasioned any further trouble. On Oct. 12th the right eye was noticed by the patient to be a little red. On the 17th there was distinct iritis, the pupil acting very imperfectly to atropine.. The next day it was noted that it was a severe instance of sympathetic ophthalmitis. It was not until the middle of November that the eye began to look white and the pupil to dilate fully. Since then, however, progress has been satisfactory, there have been no recurrences, and vision in each eye is $\frac{6}{5}$, and J.1 is read perfectly. Mr. Snell referred to a case recorded by him in the Transactions of the society for 1883 in which the sympathetic ophthalmitis had resulted from an injury not at all unlike that in the present instance, the injury being caused by a packing needle which had penetrated the left eye at the sclero-corneal junction. The sympathetic iritis in this case, however, was of a very mild form compared with that now related.

Mr. SNELL referred to the paper which he read before the society last year and in which he related an instance of Glioma occurring in two members of the same family. Only three observers had then placed cases on record. He now related a further case which this year had come under his notice. The patient was a male child, aged two and a quarter years, and glioma was present in each eye. It had been noticed first in the left eye a few months after birth and in the right eye within the last few months. It was ascertained that the only other child of the parents was a girl, born in 1897, who was similarly affected with glioma in both eyes which proved fatal. Inquiry left no doubt as to the disease being glioma. In the instance now related the most affected eye was first enucleated and submitted to microscopical examination. Mr. E. Treacher Collins reported it to be a glioma. Later, the second eye was removed and examined with a similar result. Mr. Snell mentioned that the child, particulars of whom were related last year, was still alive and well.

Mr. R. R. CRUISE described a case of Microphthalmic Cyst of the Orbit. The patient, a woman, aged 24 years, had from birth a swelling in the left orbit associated with a microphthalmic eye pushed into the upper and outer quadrant. Trouble was caused by variation in the size of the cyst. The orbital contents were eviscerated and during the operation some clear fluid escaped. The patient herself made a good recovery. Microphotographs were shown which displayed the pathological changes in the globe and their

Mr. Bellamy Gardner, and other authorities. The effect produced by "mixed drinks" at a banquet could not be regarded in any way as analogous. Ethyl chloride formerly always existed to the extent of a small percentage in well-known brands of chloroform and of late years was being added in order to hasten the induction of anæsthesia. It was therefore absurd to suppose that the effect produced by the drug *in sequence* could materially differ from the effect when *in mixture*. The influence of the various operations was dealt with in detail and as regards age young people from 12 to 15 years old were found to suffer most frequently from after-sickness, the rate of frequency steadily diminishing from the fifteenth to the eightieth year. Females were more often troubled with sickness than males in the proportion of five to four. As regards treatment little was to be done. Drug treatment was merely palliative, the measures advocated in text-books being practically useless. Drinks of warm or hot or effervescing waters were of service, as was albumin water. In bad cases washing out the stomach was of great use. Deprivation of fluids after operations was often a mistake and overdone. Patients had a natural thirst after purging and loss of blood which should to some extent be gratified. The rational line of treatment lay in stimulating the skin, kidneys, and bowels to throw whatever anæsthetic was used out of the body tissues as soon as this could be effected.

Reviews and Notices of Books.

Handbuch der Geburtshülfe. (*Handbook of Midwifery.*) Edited by F. VON WINCKEL. In three vols. Vol. I., Second Part. With numerous plates and illustrations. Wiesbaden: J. F. Bergmann. Glasgow: F. Bauermeister. 1904. Pp. 643. Price 13*s.* 9*d.*

A NOTICE of the first volume of this handbook appeared in THE LANCET of Feb. 27th, 1904, p. 583, and, as we pointed out at the time, the fact that it is edited by Professor von Winckel is a proof that it is a work of the very highest importance and value. The second volume more than sustains the high opinion that we formed of the first and contains a great deal of information of the utmost value. It is devoted to a consideration of the physiology and dietetics of pregnancy and the physiology and dietetics of labour. The word "diätetik" in German means rather more than we are accustomed to assign to it in English, for under the dietetics of pregnancy are included the treatment of the minor disorders of that condition and the preparation of the patient for labour. The dietetics of labour, too, include the avoidance of rupture of the perineum and the treatment of the umbilical cord after the delivery of the child.

The first chapter by F. Skutsch is concerned with the Examination of the Pregnant Patient. It contains a very good account of the various methods of external and internal examination, the diagnosis of pregnancy from other conditions simulating it, the important points in the diagnosis of a first and of subsequent pregnancies, and the determination of the period of pregnancy and of the size of the child.

P. Strassmann has written the second chapter on Multiple Pregnancies and discusses not only their mode of development but also many questions connected with the various pathological states which may be associated with, or may be dependent upon, the presence of such a condition. The interesting question of the relationship of the occurrence of multiple births to the general fertility of women is considered as also are the effect of heredity, and the relationship between the frequency of twin pregnancies and that of triplet or quadruplet. The author calls attention to various facts which suggest that tendency to multiple births shows an atavistic attribute in the human race, citing amongst other things the disproportionately frequent association with it of polymastia and its more frequent occurrence in animals low in the scale of development.

The section dealing with the Treatment of the Minor Disorders of Pregnancy is contributed by von Herff; and E. Bumm writes on the Preparation of the Patient for Labour. In the second portion of the book O. Schaeffer describes the nerve centres of the uterus, the expulsive forces, the resistances, and the course of labour. The description of the bony pelvis and the soft parts is by H. Sellheim and is full and very well illustrated. At the end of the chapter on the Attitude, Presentation, and Position of the Fœtus Seitz concludes that its attitude and position are primarily due to the form of the uterus and its activity; whilst the frequency of vertex presentations depends chiefly on the relationship between the shape of the uterus and that of the child, the direction in which the uterine forces act, the great mobility of the fœtal head, and the preponderance in size of the upper uterine segment over the lower segment. Eighty pages are devoted to the section on the Mechanism of Labour written by M. Stumpf and he gives a very voluminous literature of the subject.

O. Sarwey writes Chapter VIII. dealing with the Diagnosis and Conduct of Labour and also treats of the prevention of tears of the perineum and the ligature and treatment of the cord after the delivery of the child. In discussing the question as to whether the antiseptic or aseptic management of labour is the better K. Menge declares in favour of asepsis. He holds that the untouched genital canal is aseptic and requires no disinfection and that the antiseptic treatment of labour is under all conditions objectionable. He believes it will only be by the strict avoidance of infection of the hands, by abstinence from midwifery practice when the hands have been infected, and by the immediate stopping of any such practice in cases where any patient develops signs of septic infection, combined with rational disinfection of the hands and the use of sterile coverings for them, the avoidance of any unnecessary interference with the patient, and the careful sterilisation of all the materials used, that the danger of infecting lying-in women with puerperal fever will be avoided.

A very interesting contribution is that of G. Klein on Walcher's position. He gives a historical sketch of the subject and discusses fully the advantages to be obtained from its use in cases of difficult delivery. There is no part of the management of labour in which so many mistakes are likely to be made as in that of the third stage. The tendency is to express the placenta too soon after the birth of the child and this practice frequently leads to the retention of some portion of the placenta or membranes. A. Lindfors gives a very interesting account of the four chief methods of treating this stage and sums up in favour of the so-called Dublin method. The last chapter in the book is by P. Strassmann and in it he considers the progress and course of labour in multiple pregnancies including the various abnormalities which may be met with.

As we have said, the present volume fully comes up to the high standard of the first. The book is the most important work which has appeared for some years on the subject of midwifery and when completed will form a handbook of the greatest possible value and one that will be indispensable for every teacher of this branch of medicine.

Exercises in Practical Physiology. By AUGUSTUS D. WALLER, M.D. Aberd., F.R.S. Part II., Exercises and Demonstrations in Chemical and Physical Physiology. By A. D. WALLER and W. LEGGE SYMES. London: Longmans, Green, and Co. 1905. Pp. 79. Price 2*s.* 6*d.* net.

THESE exercises consist of eight chapters dealing successively with the blood, circulation, carbohydrates and salivary digestion, proteids and gastric digestion, fat and pancreatic digestion, milk (bile and muscle), urine, and respiration. This little work forms a companion to the and (3) a patient after Elevation of a very Extensive Depressed Simple Fracture of the Skull.

Mr. J. W. STRUTHERS demonstrated: (1) a patient after Radical Cure of Inguinal Hernia under local anæsthesia; (2) a patient after Excision of the Astragalus for Compound Subastragaloid Dislocation, &c.; and (3) a patient after Unusual Fracture of the Ulna.

Mr. H. ALEXIS THOMSON exhibited a patient after operation for Arterio-Venous Aneurysm in Scarpa's Triangle, followed by secondary hæmorrhage, ligation of the external iliac artery, and gangrene of the limb.

Mr. COTTERILL exhibited (1) a series of Gall-stones; and (2) a series of Damaged Semilunar Cartilages from the Knee.

Mr. THOMSON exhibited (1) a specimen from a case of Cholecystectomy for Gall-stones and Pendulous Gall-bladder; and (2) Enlarged Prostate and Vesical Calculus removed by suprapubic operation.

Dr. MICHAEL DEWAR read a paper on a Clinical Study of Influenza in the Epidemic of 1904–05. He said that the first trustworthy account of an influenza epidemic was that of 1510. Records of several epidemics were met with then. One in 1732 spread over the whole of Europe and part of America; another was recorded in 1785; while another in 1803 invaded the whole of Great Britain. An epidemic in 1847 attacked London in a single day and affected over half a million of people. Even at that time it was believed to depend on a specific contagion. 30 years' ago physicians had not much experience of it. There had been at least three epidemics in Edinburgh during recent years, 1889–90, 1898, and 1904–05, each exhibiting the same types but the predominating type differing on each occasion. The epidemic of 1889–90 was chiefly of the nervous type and was very severe, many cases ending in melancholia, insanity, and death. In the epidemic of 1898 the cardiac and pulmonary type predominated. Both of these epidemics attacked the middle-aged and elderly, children escaping with only a few exceptions; while in the epidemic of 1904–05 children were the chief sufferers. The main difficulty at first was that of diagnosis to separate true influenza from colds and catarrhs of various organs of the body. The method adopted was that of exclusion and was perhaps the best short of examining the bronchial secretion of every patient bacteriologically. The majority of cases in the recent epidemic in Edinburgh occurred during the 30 days from mid-January to mid-February. The onset was gradual, beginning in the last weeks of December and ending at the close of February—a period altogether of about eight weeks. As regards etiology, most writers were agreed that the disease was due to Pfeiffer's bacillus. Leichtenstern distinguishes between true epidemic influenza due to Pfeiffer's bacillus and pseudo-influenza, which is commonly called "grippe," of unknown etiology. The epidemics which came most under Dr. Dewar's notice occurred at the close and at the beginning of the year. In recent epidemics three principal types were noted: (1) cardiac and pulmonary, (2) gastro-intestinal, and (3) nervous. Each case presented symptoms common to all, yet there were predominating symptoms sufficiently well marked in order to classify them. The diagnosis was arrived at by considering the manner of onset, temperature, facial expression, erratic pulse, dry brownish tongue, &c. Coryza was not frequently observed as is stated in text-books; it was more frequently absent than present. In the cardiac and pulmonary types both sexes of adults and children were fairly equally attacked. In the cardiac cases the temperature varied from 99° to 102·5° F. for the first three days; then it ranged from 99° to 100° for about a week, becoming normal after another week. The heart was feeble and irregular, with frequently a soft-blowing mitral systolic murmur, while the pulse was quick, soft, and compressible. Usually a dry cough accompanied the attack. In pulmonary cases, usually bronchial, the temperature was, as a rule, higher—104° and upwards. A typical cardio-bronchial case was recorded the chief features of which were sudden onset, severe headache, and pains in the chest and shoulders; a temperature of 104·5°; a sharp rapid pulse of 140; and respirations of 20. At first nothing abnormal was found in the chest; then pains developed in the stomach, under the left arm, and over the right shoulder; there were no rash and no diarrhœa; the tongue was dry and brown with a darker band down each side. The latter sign was very characteristic. The temperature continued very irregular from 100° to 104·5°; it was not of the swinging type as in gastro-intestinal cases but often reached the maximum in the morning and the minimum in the evening. After four days bronchial symptoms appeared with the moist sounds over the left lung behind. These symptoms continued for the next ten days, after which the temperature fell to 99° and 100°, with an occasional leap to 103° or 104° for a few hours, and by the twenty-first day the temperature had become normal. The gastro-intestinal type was observed chiefly amongst children, the prominent symptoms being abdominal pain with diarrhœa coming on four or five days after the onset. In these cases the temperature was swinging and more regular as regards morning and evening than the cardiac form. A very characteristic symptom in this form was pain in the right hypochondriac region just over the liver and over the right shoulder. Diarrhœa with stools of a greyish-green colour with little green masses like discs of sulphate of iron scattered through them usually commenced about the fifth day and convalescence was initiated about the tenth or twelfth day. The nervous type was almost confined to adults of both sexes. The prominent symptoms were intense frontal and biparietal headache, conjunctival and nasal catarrh (more frequent in this type), pains, and great depression of spirits. The temperature never exceeded 103·5° and reached this only during the first two or three days. This was followed by a sudden drop to subnormal, 97° or 96·5°, rarely rising morning or evening for from a week to ten days. As a rule the patients were very ill during this period but improved as the temperature rose to normal. Convalescence was usually protracted. A case of a mixed type in an elderly female was recorded. The sequence was: influenza, pleurisy on the seventh day, pneumonia on the thirteenth day, sepsis on the thirty-fourth day, heart irregular about the fortieth day, melancholia a few days later, gastro-intestinal symptoms about the fiftieth day, and death on the sixty-ninth day from heart failure. The prognosis was generally good in the first two types but not so good in the third. Treatment consisted chiefly in good nursing and dieting. In conclusion, Dr. Dewar said (1) that influenza epidemics were shown to have been recurring every seven or eight years; (2) that they always occurred during the winter season; (3) that the period covered was from eight to ten weeks; (4) that coryza ushered in the disease in a small proportion of cases; and (5) that the gastro-intestinal forms in recent epidemics were invariably characterised by pain underneath the liver and over the right shoulder.

Mr. CAIRD read a paper on the Urine Separator of Luys. He drew attention to the care necessary in the selection of a good instrument and to the method of its employment, noting that it had to be sterilised carefully. The method of introduction in the male and female was described and the value of indigo-carmine as showing the complete separation of the urine was alluded to. Several illustrative cases were narrated as well as the results obtained.

Dr. T. D. LUKE read a paper on Post-anæsthetic Sickness: its Cause and Treatment. He pointed out that the after-sickness often constituted the most trying part of a surgical operation. The factors influencing the occurrence of after-sickness were the following: the nature of the anæsthetic used; the operation performed; its duration; the skill with which the anæsthetic is given; the care with which the patient is prepared; the patient's condition at the time of the operation as regards digestive tract, &c.; age, sex, temperament, habits, and constitution also having considerable influence in the matter. The statistics prepared by the British Medical Association anæsthetic committee were made use of together with those of Mr. Marcus Gunn. Dr. Luke found that while actual occurrence of sickness was more frequent after ether it was brief in duration and very seldom so severe as that seen after chloroform in a number of cases. About 45 per cent. of cases are sick after ether and about 20 per cent. after chloroform. Chloroform sickness is due to the markedly inhibitory action of chloroform on the metabolic processes and may be regarded as a mild kind of chloroform toxæmia of a subacute nature where the toxic action of the drug does not go so far as to produce the gross cellular stages described by Guthrie, Stiles, and others. Dr. Luke stated that sickness after ethyl chloride occurred in from 15 to 20 per cent. of cases and found that statements made as to sickness being more severe after mixtures and sequences, such as ethyl-chloride-ether sequence and ethyl-chloride-C.E. sequence, were not based on fact but on prejudice, and in support of his remarks gave the personal opinions of Dr. F. W. Silk, many counties. A report of the latest commission appointed to inquire into the pathology, and so on, of the disease has been promised shortly. Anthrax is largely increasing and one factor in its spread is the habit, through ignorance of the methods of propagation of the disease, on the part of the average farmer of opening the carcass of a cow (which has died suddenly) to try to find out the cause. If instead of doing this he would report to the local veterinary authority fewer cases would occur as a sequel to the first death.

Epizoötic lymphangitis, which has been imported into England with the returned army horses from South Africa, has, on account of its tedious course when treated and its contagiousness, caused the Government to issue a pamphlet to every member of the veterinary profession in the British Isles. This pamphlet describes the differences between this disease and farcy. Glanders is admittedly on the increase and it is time that some radical measures were taken to control this disease. In 1894 there were only 502 outbreaks reported but in 1904 these had increased to 1529 and 2658 horses were killed as glandered. More power ought certainly to be given to the veterinary inspectors to test the in-contact horses with mallein, as by this agent an almost infallible diagnosis can be made within 24, or at most 48, hours. The expense, although great the first year, would not be excessive if allowed to be spread over a period of years; and where a preventable disease, which also causes the deaths of numbers of human beings each year, is concerned, the cost ought certainly not to be considered too seriously as a reason why it should not be taken thoroughly in hand. Sheep scab is favourably reported upon and rabies is non-existent. The latter is a cause for much congratulation and it is to be hoped that the present successful measures will be continued. Many other diseases are touched upon and the book is well worth a place in the library of everyone who is interested in the subject of the diseases of animals.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by Sir MICHAEL FOSTER, K.C.B., F.R.S., and J. N. LANGLEY, F.R.S. Vol. XXXII., Nos. 3 and 4. May, 1905. London: Cambridge University Press Warehouse. Pp. 127. Price 8*s.*—This part contains the following articles: 1. The Fractional Hydrolysis of Optically Inactive Esters by Lipase, Part II., by H. D. Dakin. 2. Observations upon Fibrin Ferments in the Venoms of Snakes and the Time Relations of their Actions, by C. J. Martin. 3. On the Formation of Fatty Acids from Lactic Acid when fused with Caustic Alkalies, by H. S. Raper, 1851 Exhibition Scholar. 4. Note on Neumann's Method of estimating Chloride, by W. Legge Symes. 5. The Regulation of the Lung Ventilation, by J. S. Haldane and J. G. Priestley, with 11 figures in the text. The authors show that at a constant atmospheric pressure the air in the alveoli of the lungs contains a practically constant percentage of carbon dioxide but in different individuals this percentage differs. Within limits with varying atmospheric pressure the alveolar percentage varies in each individual inversely as the atmospheric pressure, so that the alveolar carbon dioxide pressure is constant while the oxygen pressure varies widely. The respiratory centre is exquisitely sensitive to any rise in the alveolar carbon dioxide pressure, a rise of 0·2 per cent. of an atmosphere being sufficient to double the amount of alveolar ventilation. When the oxygen pressure in the inspired air falls below about 13 per cent. of an atmosphere the respiratory centre begins to be excited by want of oxygen. During muscular work the alveolar carbon dioxide pressure is raised slightly with a corresponding large increase in the lung ventilation. The amount of air breathed per minute and per unit of body varies widely in the same individual and still more widely in different individuals. 6. The Separation of Proteids, by H. C. Haslam, formerly John Lucas Walker student. 7. On the Products of Digestion of the Proteolytic Enzyme of the Spleen acting in an Alkaline Medium, by E. P. Cathcart. 8. The Effect of Cold Narcosis on Reflex Action in Warm-blooded Animals, by Sutherland Simpson and Percy T. Herring. 9. The Effects of Acids upon Blood, by Charles E. Ham and Hermann Balean. 10. Observations on the Munchi Arrow Poison, by Alfred Fröhlich. The Proceedings of the Physiological Society for Feb. 25th and March 18th are also contained in this part.

Reports and Analytical Records

FROM

THE LANCET LABORATORY.

EUDRENINE.

(PARKE, DAVIS, AND CO., 111, QUEEN VICTORIA-STREET, LONDON, E.C.)

EUDRENINE is described as a local anæsthetic and hæmostatic for the painless and bloodless extraction of teeth and for use in general surgery. It contains in each cubic centimetre 0·01 gramme of the anæsthetic beta-eucaine hydrochloride and 0·033 milligramme of the powerful hæmostatic adrenalin chloride (Takamine). For tooth extraction eudrenine is used undiluted by injecting into the gum ten minutes before operating the contents of one or two "ampoules," equal to eight or 17 minims, according to the number of teeth to be extracted. For small surgical operations eudrenine is used undiluted but when a large area is required to be anæsthetised it is diluted with four volumes of "physiological" sodium chloride solution. The advantages of beta-eucaine over cocaine are well known and the object of combining it with adrenalin is to contract the blood-vessels so that not only is the action of the anæsthetic localised but the operation may be performed without bleeding. The result is that only a small quantity of the anæsthetic is required.

(1) SUGARLESS JAM; AND (2) STARCHLESS BISCUITS.

(CALLARD AND CO., 74, REGENT-STREET, LONDON, W.)

According to our examination both of these preparations may be given to patients in whose cases sugar is prohibited. In the jam we found a trace of sugar which, according to the phenyl-hydrazine test, appeared to be milk sugar, since the small quantity of crystals produced had the characteristic appearance of lactosazone. There was also a slight reduction with Fehling solution. The jam is sweet to the taste owing to glycerine and has the consistence of ordinary jam. The flavour of the sample submitted to us was that of black currant. The colouring is rather brilliant but of a harmless kind. The biscuits gave absolutely negative evidence as regards the presence of starch, the chief constituent being proteid which to some extent is soluble in water. Reactions were obtained with the solution characteristic of milk proteid.

PURE GRAPE PORT.

(HUNT, ROOPE, TEAGE, AND CO., OPORTO, AND 3 AND 4, WATER-LANE, GREAT TOWER-STREET, LONDON, E.C.)

This is an undoubtedly genuine port wine and as the following analysis shows is of a robust and an invigorating character. It is more suitable for invalid purposes than as an after-dinner wine. The analysis was as follows: extractives, 14·30 per cent.; mineral matter, 0·25 per cent.; sugar, 12·50 per cent.; volatile acidity reckoned as acetic acid, 0·066 per cent.; fixed acidity reckoned as tartaric acid, 0·21 per cent.; and alcohol, by weight 19·58 per cent., author's systematic work, to which reference is made and from which some of the illustrations are reproduced. On the whole the experimental part seems to us to be fuller than the more purely chemical sections. All the directions are precisely given and can be easily followed by the student in the laboratory. Students who have to present themselves for a practical examination involving the subjects discussed will find this book useful and so also will students in a properly equipped laboratory. Naturally, a fair number of the experiments must be in the nature of demonstrations by the teachers rather than the actual work of the student of physiology. In these cases this is stated and full details are given.

Methods of Morbid Histology and Clinical Pathology. By I. WALKER HALL, M D. Vict. (Manchester), and G HERXHEIMER (Wiesbaden). London and Edinburgh: W. Green and Sons. 1905. Pp. 290.

A BOOK of this type, designed for the requirements of students and pathologists working in hospitals and institutes, makes no claim to originality. Indeed, it consists largely of recipe methods taken from well-known text-books, while the authors state in particular their indebtedness to the work of Schmorl—i.e., "Die Pathologisch-Histologischen Untersuchungsmethoden." Of this work, the second edition (1901) is before us. The authors state that the details of methods they record were, except in a few cases, obtained from the original papers and a list of papers is appended. As one of the authors was assistant to the late Carl Weigert for several years it is appropriate that their book is dedicated to his memory.

There is nothing new in the chapters devoted to the examination of fresh objects, freezing, fixation, hardening, and decalcification; nor, indeed, is there in those on imbedding, sectioning, clearing, mounting, or staining. Substantially the same methods are applicable to normal animal histology and are to be found in text-books on that subject. In the chapter on special cell and tissue structures the methods are in some respects like those adopted in Schmorl's work in the chapter dealing with methods for demonstrating special constituents of cells and tissues.

In Chapter XII. special tissues and organs are dealt with and that on the nervous system is naturally crowded; in fact, there are too many methods bearing the names of their authors—modifications of some fundamental method. It would have been better had the authors been able to give the aspiring tyro some definite statements as to the comparative virtues of these modifications.

The methods regarding bacteria, moulds, and other fungi, and animal parasites occupy more than 30 pages, while to clinical microscopy eight pages are given. It will be seen that the word "clinical pathology" is taken in a somewhat restricted sense; and only those methods which a pathologist may require during his routine work are given.

The book will be found useful for reference but the student may have difficulty in knowing which of the numerous methods he ought to select.

Health and Disease in Relation to Marriage and the Married State. Edited by Geheimer Medizinalrat Professor Dr. H. SENATOR and Dr. Med. S. KAMINER. The only authorised translation from the German into the English language by J. DULBERG, M.D. Wurzburg, of Manchester. London and New York: Rebman, Limited. Vol. II., pp. 777. 1905. Price, for two vols., 30*s*. net.

IN our issue of Oct. 8th of last year we reviewed the first volume of this work. The second volume is now before us; it is divided into 14 chapters which treat respectively of (XIV.) Gonorrhœal Diseases in Relation to Marriage; (XV.) Syphilis in Relation to Marriage; (XVI.) Diseases of the Skin in Relation to Marriage; (XVII.) Diseases of the Organs of Locomotion; (XVIII.) Diseases of the Eyes, with special regard to Heredity; (XIX.) Diseases of the Lower Uro-genital Organs and Physical Impotence; (XX.) Diseases of Women, including Sterility; (XXI.) Diseases of the Nervous System; (XXII.) Insanity in Relation to Marriage; (XXIII.) Perverse Sexual Sensations and Psychical Impotence; (XXIV.) Alcoholism and Morphinism in Relation to Marriage; (XXV.) Occupational Injuries in Relation to Marriage; (XXVI.) Medico-Professional Secrecy in Relation to Marriage; and (XXVII.) the Economic Importance of Sanitary Conditions.

The section on gonorrhœal diseases is from the pen of Professor A. Neisser of Breslau. It is, we think, the most important in this volume and is well worthy of study. Professor Neisser points out that there is hardly another disease dealt with—not even syphilis—that has such far-reaching and momentous consequences for the married state as gonorrhœa. The dangers to the female emanating from chronic gonorrhœa in the male are brought as prominently forward as they deserve to be. The teaching is that when marriage is contemplated, as all post-gonorrhœic residual affections are not infectious, it is necessary to subject every individual who presents any abnormal symptoms derived from a former gonorrhœa to a special examination for the purpose of ascertaining whether these symptoms are still of an infectious nature. The examination for gonococci alone enables the physician to say whether marriage should be permitted and this examination should be made as searching as possible. In the case of men it is necessary to examine not only the superficial secretion of the anterior urethra and that of the posterior urethra—if possible separately—but to endeavour to bring to light the secretion situated in the crypts between the folds of the urethral mucous membrane and to examine it. Careful search must be made for the existence of preputial and para-urethral passages, of fistulæ and small abscess-cavities. In special cases it may be necessary with the help of the endoscope to look also for gland-like epithelial swellings lying in the urethra. Professor Neisser examines every case of chronic urethritis by means of Gram's method, and when the question of marriage is under consideration he makes use of the cultivation-method also.

The chapter on Medico-Professional Secrecy is written from the point of view of a German medical practitioner and is, therefore, not applicable to English and American conditions, but it is interesting reading. The diversity of medical practice very often places medical men in the unpleasant situation of having to choose between the injunctions imposed upon them by the different laws and the dictates of their own consciences. In Germany the law admits of no exceptions and a medical man has no right to divulge what has become known to him in his professional capacity, no matter how serious the consequences may eventually turn out to be.

Dr. Dulberg is to be congratulated on having completed his task and on having given us a translation of the most comprehensive work on a subject which is of interest to every practitioner.

Report of the Board of Agriculture and Fisheries for 1904. London: Darling and Son. Price 11*d*.

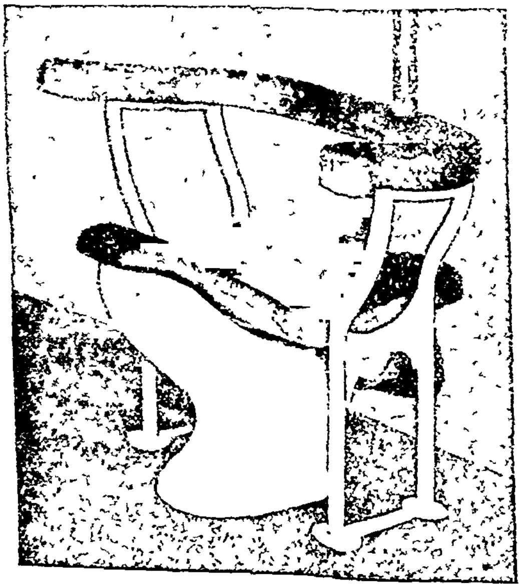
THE report of the work done by this department of the Government is one of the most hopeful which has been issued for some years. Mr. Cope, M.R.C.V.S., the chief veterinary officer, is able to congratulate the country on the success which has prevailed in regard to certain cattle scourges, particularly foot and mouth disease and pleuro-pneumonia, neither of which, we hope, will ever reappear in Great Britain. Swine fever, too, is on the decrease, although still far too widespread and met with in very

New Inventions.

TWO NEW WATER-CLOSETS.

(1) THE "NATURAL" WATER-CLOSET AND SEAT.

IT has been said that not a few human disorders, and more particularly those connected with the abdominal region, arise from the unnatural attitude commonly adopted by civilised man in the act of defæcation. The defects from an anatomical point of view of the ordinary water-closet pedestal and seat in general use are so well known and recognised that only the advent of a really scientifically designed closet-seat justifies the re-discussion of the question. The leading text-books on physiology are silent on the important part that position plays in the act of defæcation; it is, of course, interesting to the student to be aware that centres inhibiting the ano-spinal centre are situated in the base of the thalami and the upper end of the crura cerebri, but the important differences between the seated position for the evacuation of the bowels and the squatting posture are not considered. Mr. W. Arbuthnot Lane in his teaching on chronic constipation has forcibly pointed out how in the act of defæcation, in our present state of civilisation, the cæcum is driven downwards and forwards into the true pelvis, tending to drag and to displace downwards the right kidney, the individual losing in the sedentary position the enormous pressure afforded by the forcible apposition of the thigh and abdomen, which is exerted when the squatting position of uncivilised life is assumed. Not only does this squatting posture help to empty the cæcum and ascending colon but it tends to retain, both directly and indirectly, the kidney in its normal relationship. It also serves to displace the sigmoid upwards and facilitates the evacuation of its contents. The outline and general appearance of the "Natural" water-closet designed by Messrs. D. T. Bostel and Sons of 73, Ebury-street, London, S.W., are very well conveyed in the accompanying illustration, in which the closet is shown provided with a "lift up" lid and two arm rests. The height of the arms in relation to the seat renders the squatting attitude comfortable and secure. The arms are about two feet from the floor, while the lowest part of the seat is about nine inches from the floor, and the front part of it six inches higher. The posture compelled upon the user of the closet is practically identical with that assumed naturally when there is no other convenience for the purpose than the field. The peculiar construction of the pan is of great assistance to the effect of flushing, the water sweeping everything before it, and the "lift up" lid enables the pan to be used as a urinal or for the reception of slop waters. Altogether the design appears to be in conformity with the anatomical posture and requirements of the body during the act of defæcation and its use is calculated to obviate that habitual straining at stool which undoubtedly is frequently a source of abdominal mischief, as, for example, hernia.

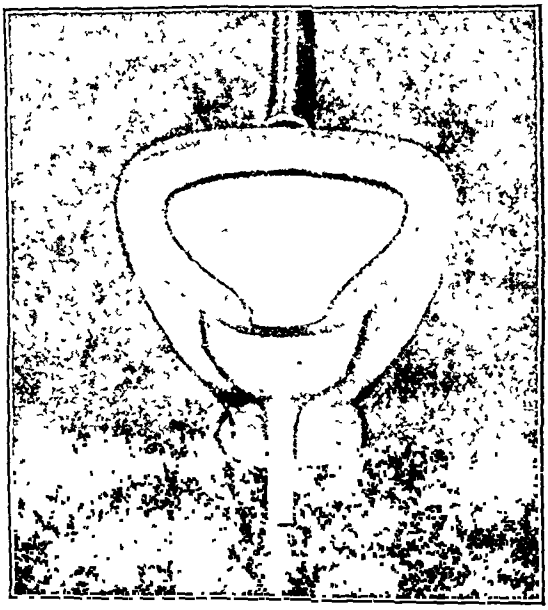


The "Natural Water-closet and Seat.

This invention will be shown in practical working order at the forthcoming exhibition of the British Medical Association at Leicester, July 24th to 28th.

(2) THE "NATURAL" SANITARY CLOSET.

THE "Natural" sanitary closet, which is the invention of Mr. E. A. Rawlence, of Newlands, Salisbury, was brought to our attention at the same time as the water-closet noticed above and the claims made for its use are almost identical. The benefits of the squatting position during the act of defæcation are described by the inventor, upon medical authority, as follows:—"The lower bowel is, in a healthy subject, self-cleansing, as in other animals. When in the natural position for defæcation the abdomen rests upon the closed thighs which support it and lessen the risks of hernia. The mechanical process of defæcation cannot take place properly while the body is in the upright sitting posture when the whole weight compresses the buttocks against a seat." The "Natural" sanitary closet is designed to meet all these disabilities. It is so shaped and of such a height as to allow defæcation to take place in an absolutely natural position in adult or child, children being especially tried by the usual shape of water-closet which allows their feet to dangle. In cases of infirmity or old age where the natural position may be difficult or impossible a specially designed flap seat can be provided so that a natural position may be attained as nearly as possible and handrails are provided to assist the user in rising from so low a position. The flap seat is so designed that it cannot well be fouled and when not in use it is fastened up to the sides of the closet. The seat slides on an iron rod fixed at a considerable angle so that when fixed full forward for an adult it is 17 inches high and when set back for a child it is 15 inches high. Sliding or revolving blocks four inches high are also provided for children using the closet in the natural position. The "Natural" sanitary closet also provides a convenient urinal and slop waste. The usage of the ordinary closet for these purposes is a frequent cause of fouling the seat. The "Natural" sanitary closet is designed to provide the same medical and sanitary benefits in country houses and cottages where water-closets are not possible and can be adapted either for a vault closet or earth system.



"Natural" sanitary closet. The flap is fastened to the side walls, where also are handrails which are not shown in the illustration.

This invention will be exhibited at the ensuing exhibition of the Royal Institute of Public Health at the Polytechnic from July 19th to 29th.

by volume 23·98 per cent., equal to proof spirit 42·03 per cent. The wine has a strong, fruity flavour. As will be seen from the above figures it is made from rich grape juice containing an abundance of saccharine matter, the grape sugar amounting to as much as 12·50 per cent. The mineral matter contained a noteworthy amount of phosphates. It is a rich, "full" wine.

CANDOL.

(CANDOL DEPOT, 20, EASTCHEAP, LONDON, E.C.)

Candol consists of a practically dry, granulated or crystalline extract of malt. We have not examined a dry extract of malt possessing such powerful diastasic activity. It rapidly converts starch jelly into a limpid fluid and finally into maltose. It is capable of dissolving its own weight of starch in a few minutes at blood heat. The convenience and advantage of an active malt extract in dry granulated form are obvious.

FRUCTOLE OF RED BONE MARROW AND GLYCEROPHOSPHATES.

(SAVORY AND MOORE, 143, NEW BOND-STREET, LONDON, W.)

The formula of this compound is an illustration of the advantages of utilising quite modern chemical and physiological knowledge. It contains phosphates in a form known to be assimilable in combination with iron and calcium and the powerful nutrient substance, red bone marrow. One ounce contains the equivalent of one drachm of red bone marrow, two grains of iron glycerophosphates, and four grains of calcium glycerophosphate. It is prepared with a fruit basis, glycerine being substituted for sugar. The flavour is pleasant. This "fructole" is, in short, an elegant pharmaceutical preparation; it keeps well and contains substances which are of well-known tonic value and which are readily utilised. "Fructoles" are also prepared of the hypophosphites, of the glycerophosphates, and of terpin and heroine.

SCOTCH WHISKY BLUE SEAL.

(HENRY SIMPSON AND CO., 6, CROSBY-SQUARE, LONDON, E.C.)

The indications of our analysis are distinctly in favour of this spirit being genuine malt whisky. Moreover it evidently possesses considerable age, for the flavour is that of a well-matured whisky. Analysis gave the following results: alcohol, by weight 38·83 per cent., by volume 46·08 per cent., equal to proof spirit 80·75 per cent.; extractives, 0·19 per cent.; and fixed acidity reckoned as tartaric acid, 0·015 per cent. The secondary constituents, or "non-alcohols" as the French chemists now term them, were as follows, given in grammes per hectolitre of alcohol present: volatile acidity reckoned as acetic acid, 26·00; aldehydes, 14·30; furfural, 2·17; ethers reckoned as ethyl acetate, 90·00; and higher alcohols, 217·00: total secondary products, 349·47. These results are in accordance with those commonly obtained with genuine old malt whisky. It may be remarked, however, that the amount of furfural is somewhat below the normal, possibly owing to the age of the spirit. Storage in sherry casks was indicated by the presence of a trace of sulphates. The flavour is mild but distinctly malty in character.

DRIED MILK.

(THE CREAMERY CO., GARSTANG.)

This is practically milk in which the entire solid constituents are retained, water only having been abstracted by a process of evaporation. Our analysis of the dry milk was as follows: fat, 30·0 per cent.; proteid, 28·66 per cent.; milk sugar, 35·34 per cent.; and mineral matter, 6·00 per cent. The powder occurs in a light, dry, crisp, flaky form. With water it yields a fluid closely resembling milk in appearance but with the fat separated. It is evident from the above analysis that the process secures the retention of the whole of the cream of the original milk. The preparation is obviously valuable for ordinary as well as special dietetic purposes.

(1) LAGER BEER; AND (2) SPECIAL STOUT.

(S. ALLSOPP AND SONS, BURTON-ON-TRENT.)

That a large firm of brewers should add to their business that of brewing light beer on the continental, or what is known as the low fermentation, system may be taken to indicate an increasing demand on the part of the English public for lighter malt liquors. Allsopp's lager beer shows pretty much the same composition as the light beers brewed in Germany and elsewhere. Our analysis was as follows: alcohol, by weight 3·41 per cent., by volume 4·28 per cent., equal to proof spirit 7·49 per cent.; extractives, 4·45 per cent.; mineral matter, 0·17 per cent.; sugar, 0·74 per cent.; and volatile acidity reckoned as acetic acid, 0·078 per cent. It is thus a light, sound, clean beer with low alcoholic strength. It is agreeably and delicately bitter to the taste, but of course it should be kept cool and drunk cold, otherwise the peculiarly attractive flavour of beer brewed with bottom yeast is lost. The stout gave the following results on analysis: alcohol, by weight 6·71 per cent., by volume 8·36 per cent., equal to proof spirit 14·66 per cent.; extractives, 6·67 per cent.; mineral matter, 0·33 per cent.; sugar, 0·357 per cent.; proteid, 0·52 per cent.; and volatile acidity reckoned as acetic acid, 0·024 per cent. The stout was in excellent condition, free from an excess of carbonic acid gas and from the slightest sourness. The flavour was soft and decidedly malty. The stout answers the description of a malt liquor which is least likely to disturb digestion, since investigation has shown that acidity in beer and a large excess of gas are apt to have a retarding effect on digestion and to give rise to an acid condition of the contents of the stomach.

ROBORAT.

(THE ROBORAT CO., 27A, ST. MARY-AT-HILL, LONDON, E.C.)

The principal constituent of roborat, it is said, is pure unaltered vegetable albumin obtained from the seeds of cereals. It is a fine dry powder with a colour resembling oatmeal. It has the peculiar property of swelling up in water which is the characteristic behaviour of fresh albumin and at the same time a frothy liquid is obtained on shaking just as when egg albumin is similarly treated. Our analysis gave the following results: albumins, 79·02 per cent.; carbohydrate, chiefly starch, 5·78 per cent.; oil, including lecithin, 4·80 per cent.; mineral matter, 2·00 per cent.; and moisture, 8·40 per cent. Cold water extracted 6 per cent. of the powder, the extract consisting chiefly of soluble albumins. Alcohol and ether readily extracted lecithin. The mineral matter contained chiefly the phosphates of the alkaline earths. Roborat appears to be of decided value in the dietary of invalids. It is, of course, a powerful tissue-former, the albumins which it contains being readily digestible according to experiments made *in vitro*. In addition it contains an important proportion of lecithin which, as is well known, has a favourable influence on nutrition.

THE SALE OF POISONS AND DRUGS.—An official report on Indian legislation in 1904 mentions that an Act passed by the council of the Governor-General provided for the control of the sale of poisons generally within municipalities and cantonments, authorised the prohibition of the importation of white arsenic into British India except under licence, and empowered local governments to regulate the sale of that poison. The Act also took powers for the Governor-General in council to apply to any other poisons the provisions relating to white arsenic. Protection was secured for acts done in good faith by medical men, druggists, and others. The Legislative Council of Burma passed an Act enabling the Local Government to make, by proclamation, additions to the list of intoxicating drugs of which the sale and possession may be restricted under the provisions of the Excise Act, 1896. The circumstances which led to this legislation were the large increase in the sale of cocaine in Rangoon and the noxious results found to be attendant on the use of the drug.

The old-fashioned virtue of early rising may be insidiously undermined, it would seem, and slothful habits induced. Perhaps it is difficult in all cases to hit the golden mean and conflicting theories take time to adjust themselves in practice. Still there is no reason why sanitary houses, proper food, and adequate sleep should have anything but a good influence upon the rising generation of young Englishmen. The tendency to spare the rod is probably carried too far in deference to false sentiment and ignorant outcry, but we do not wish to bring back the "good old" days of fighting and bullying, of semi-starvation, dirt, and cold. These may have been potent means of natural selection in their day but times are changed and other qualities are demanded than mere muscle, animal spirits, and aggressiveness. There is no evidence that the products of our public schools have less average capacity for work in the world than those of past generations, though statements to the contrary are often made. Outstanding examples may be fewer just because the general level has been raised rather than lowered, but we fancy that the total production of good is increased. At any rate, wisdom seems to lie in removing visible obstacles to physical health so far as can be done and counteracting any tendency to resulting softness, should such really exist, by other means than conditions of barbarism. Dr. ACLAND's paper will, we hope, have the excellent result of convincing some of our scholastic authorities that a growing boy is more hungry for sleep even than for food.

Medical Students' Early Years.

THE problem of how best to regulate the early years of medical student life in London is not the least of the difficulties created by the embarrassed financial position of metropolitan hospitals and their affiliated schools. It is an educational problem of the greatest interest and importance, not only to those particularly concerned with medical education but also to the public at large. As the medical student is, so to a large extent will be the medical practitioner, and it concerns us all that the management of medical education shall tend to create from a body of high-spirited and well-informed young men a body of sensible, honest, and industrious practitioners. The needs of the exceptional student we may put on one side. It is the average young man whom we have to consider and how the highest average standard of general and of medical excellence is to be obtained. We say general excellence advisedly, for although the medical school, strictly speaking, offers nothing but medical education, yet actually each school prides itself not only on the proficiency which it offers to its members in the various branches of medical science and art but also on the spirit with which tradition and a continuous series of enthusiastic physicians and surgeons have furnished it. To impart the desirable qualities of keenness, of good sense, of responsibility, and of laudable ambition there can be no regulated system of instruction. They spring from the atmosphere of a hospital and from the imitation of fine examples. There are, and can be, no classes in manners, in kindness, and in the proper way to talk to patients. It is none the less an essential part of the medical student's education that he shall be able to watch these qualities in others and to acquire them for himself. His teachers and his surroundings, in a word, must make him not merely a competent practitioner but also an estimable man.

As many of our readers are doubtless aware, a changed arrangement of the student's preliminary years is coming about in London. A concentration of the teaching of preliminary subjects will be effected, and this is, in our opinion, desirable. Moreover, so far as some of the schools are concerned it is imperative, having regard to the curtailment of the financial help which a hospital can grant to its school. Will this scheme of amalgamation, when it has taken shape, influence in any way unfavourably the desirable effects of hospital life? We think that it will not, but we know that this view is not shared by some hospital authorities who see in the removal of the student at the beginning of his career from the influences of a hospital school a considerable source of danger. We believe that these fears are ill-founded. It must be remembered that the medical student is no longer a schoolboy, nor is he in many instances even in the same relation to his hospital that the undergraduate of Oxford or of Cambridge is to his college. A considerable proportion of the medical students in London have, in fact, passed through their undergraduate stage at Oxford or Cambridge or some other university. Yet amongst these very men, the men who have passed through perhaps their most impressionable days before they ever entered hospital, are to be found supporters as keen, as loyal, and as devoted of the hospitals to which they have attached themselves as amongst any other class of student whatsoever. It is probable that all the good influences which a hospital can exert, and these are many and real, can be, and are, as well and as successfully brought to bear upon the third-year man as upon the student who begins as well as finishes his education on the premises of a London hospital. Is it rational to suppose then that because in the future this student will have studied physics and chemistry, anatomy and physiology at the University of London, therefore when he goes through his clinical education at a metropolitan hospital, the good influences and traditions with which that hospital has enveloped so many generations of students will have an effect that is unavailing or diminished in his case?

The effects upon conduct and upon character that are wrought by the student's life within the walls of a hospital arise mostly from the nature of the work and from its tendency to make him take a thoughtful and a sympathetic view of human affairs, both bodily and spiritual. It is an effect that will be produced upon impressionable minds, a seed which will grow in the proper soil, whether it is planted to some extent from the earliest years of a medical student's life or whether, on the other hand, it is withheld until his entry into the wards only to be sown then in a fuller abundance. Moreover, it will be the duty of hospital authorities to see that the student reaps even during his preliminary years such benefits as a sense of comradeship and of belonging to an honourable institution can confer upon him. He will have joined the ranks of a hospital before his work takes him habitually to the building, and when the time comes for him to be there as dresser and as resident we have no fears that the *régime* of

THE LANCET.

LONDON: SATURDAY, JULY 15, 1905.

The Sleeping Hours of Schoolboys.

In the present strenuous age of hurry and bustle there is a tendency to begrudge an expenditure of time upon such apparently unprofitable things as rest and recuperation, and for the busy man as well as for the pleasure-seeker the hours devoted to sleep are cut down to the irreducible minimum. We have heard of a society in America the members of which bound themselves to curtail more and more the period of slumber till most of them managed to do with only four or five hours in the 24. It was never recorded, so far as we know, what was the average life of these poor victims. Our ancestors had an adage that six hours' sleep was the proper quantity for a man, seven for a woman, and eight for a fool. Whether it is that the strenuous life of the present day is akin to foolishness or whether it is a simple phenomenon of evolution, it is certain that many of our busiest men find the last-mentioned allowance none too long for them. The quality of a man's work soon deteriorates if he takes insufficient rest and a regard for real as contrasted with apparent profits should compel attention to considerations of health. But if sleep is requisite for the adult, how much more so is it indispensable for growing children? Rapid growth and the abundant energy characteristic of the young imply rapid multiplication of cells and renovation of tissue, and sleep is the time for both growth and repair. Yet it is a feature of child life to which our educational authorities seem to have paid but little attention. Here, as in other educational matters, America is ahead of us, much more adequate periods of rest being allowed in the schools in the United States than in this country. Dr. T. D. Acland has done good service in calling attention to the subject in his paper read before the Medical Officers of Schools' Association, which appears at p. 136 of our present issue. He has collected a mass of weighty opinions which should carry conviction to his hearers and readers. It is, perhaps, not very easy to lay down definite rules which shall apply to all children even at the same age, since individuals differ in this as in other respects. But there seems to be a striking agreement among medical and scientific writers that at present we err on the side of deficient allowance of sleep.

Schoolboys may be roughly divided into those of public school age and those still in the preparatory stage, the latter being between the ages of nine and 13 and the former from 12 to 18 years. For little boys who have just left home for the first time ten hours of sleep are probably none too much, and this amount would be obtained pretty accurately by insisting upon their going to bed at 9.30 and having breakfast at 8. The elder boys still at a private school might be allowed to sit up until 10 o'clock. At public schools 10 p.m. is probably the usual, and certainly a convenient, time for bed, and only the upper forms should be allowed to postpone the time of "lights out" to any later hour. Breakfast could here be at 7.30 without undue stress of work. Of course it must be recognised that all the time between the hour of going to bed and that of breakfasting is not spent in actual sleep, so that in order to secure as much sleep as possible it is necessary, at all events with younger boys who occupy dormitories in common, to prevent talking and "skylarking" going on when the lights are out. It is also advisable to arrange that younger and older boys do not share the same sleeping rooms, lest the little ones, who go to bed early, may be disturbed by the subsequent entrance of the seniors. Very closely connected with the question of sufficient sleep is that of lessons before breakfast, and we are strongly of opinion that it is wrong on physiological grounds to expect boys to start brain-work in the early morning on empty stomachs. Breakfast should be the first event of the day and should be followed by a short interval, for obvious reasons, before assembly in the class-rooms. One of the most important features of education is the inculcation of good habits which soon become a second nature. Sleep indeed itself, as pointed out by Dr. T. B. Hyslop, is to some degree a matter of habit, but it is doubtful how far it is one which need be much impressed upon children who seldom sleep badly unless they are definitely ill or overworked. The occurrence of sleeplessness in them is always a symptom which needs careful attention as it may afford a danger signal pointing to the onset of nervous maladies or to the existence of over-pressure in school work. It may seem curious that so late in the history of the world as the beginning of the twentieth century it is necessary to insist upon the allowance of proper time for sleep, but the fact may be readily explained. On the one hand, the old and not yet obsolete theory of education as a means of stocking boys' memories with as large as possible a number of facts and endowing them with certain fashionable accomplishments rather than as training the minds of the young in such a way that they may best adapt themselves to the circumstances of after life, has led to the multiplication of hours of instruction, to the neglect in many instances of the laws of health. On the other hand, it is only in recent years that these laws have been recognised by the general public with anything like intelligent appreciation, and the traditions of school life are guarded with a curiously jealous conservatism which renders change of any kind specially difficult to carry out. Hence, some of our great schools are in certain respects behind the times in their health arrangements, while parents are often sadly ignorant of all that pertains to the upbringing of children.

There are signs that the schools, especially the English public schools, are becoming awake to their shortcomings and are setting their houses in order. The chief opposition now comes from those who see in all attempts to make life at school more healthy a proof of yielding to the softer, not to say more effeminate, spirit of modern times. This cry is raised even over the question of longer hours for sleep, as Dr. Acland points out.

of 1904:[3] "The diffusion of a general knowledge of the way to live amongst the poorer classes of the population will, we think, prove the charter of the people's physical salvation and it should, too, tend after some years to make the differences between the infantile mortality of the upper and the lower classes less pronounced than is the case at the present time." The medical profession has always been active in promoting all movements tending to the improvement of the public health and the general well-being of the people and we feel sure that the new league will receive the hearty support and active coöperation of all practitioners of medicine. After all, it is public interest in these matters which must be awakened if practical results are to be achieved and it is this which the league hopes to effect. Without such general public support legislation is likely to be delayed and the evils to remain; with it we may hope for the ideal which Sir LAUDER BRUNTON held forward in his speech supporting the foundation of the league at the Mansion House, that we should have "every man, woman, and child better fed, stronger, and better educated, and with a better morality following on a better physique."

Annotations.

"Ne quid nimis."

PREGNANCY LATE IN LIFE.

THE fact that a woman may become pregnant quite late in life has long been recognised by writers on obstetric medicine; when, however, many of the so-called authentic cases are subjected to a critical examination the worthlessness of most of them soon becomes apparent. While cases have been recorded by trustworthy observers of women of 60 years or so who have borne children we must regard with much suspicion the accounts of the occurrence of pregnancy at the extraordinary age of 70 years, as in a case recorded by Haller, or the cases mentioned by Gould where the mother was respectively 73, 90, and 103 years of age. In St. Peter's Church in Oxford there is a monument bearing an inscription recording the death in childbed of a woman 62 years old. The late Dr. Fordyce Barker collected a number of these cases and met with an interesting instance in his own experience in which a woman 58 years old claimed to have given birth to a child. The death of the infant, shortly followed by the death of the mother, diverted the descent of a large property which she had inherited and gave rise to a law-suit which established the fact that the woman had not been pregnant at all but had borrowed the child for the occasion. The chances of a woman bearing children when over the age of 50 years are decidedly small and they are, of course, still less when the menopause has ensued. Of 51,229 births taking place in Berlin in the year 1898, 138, or 0·371 per cent., of the mothers were between 45 and 50 years of age, and only four, or 0·007 per cent., were over 50 years. One of the most remarkable cases of pregnancy at an advanced period of life is that recorded by Kennedy. He delivered a patient in her twenty-third pregnancy at the age of 62 years. The labour was spontaneous and the child, a healthy male, was born alive. The patient had had 21 children at full term, the last seven pregnancies occurring after the forty-seventh year and the last but one ending in a miscarriage at the age of 60 years. Menstruation had been regular up to the commencement of the last pregnancy. In Meissner's case the woman began to menstruate at the age of 20, she had her first child at the age of 47, and the seventh and last at the age of 60 years. Her periods then ceased but returned and were regular from the seventy-fifth to the ninety-eighth year; then they ceased again for five years and returned in the 104th year. Unfortunately the patient was then lost sight of. Capuron records a case of abortion at the third month in a woman 66 years old. It is, of course, not surprising to find a patient who is still menstruating becoming pregnant, even although she may be of an advanced age, but such an occurrence is much more extraordinary when the patient has ceased to menstruate. Cases, however, even of this kind have been described and the observations of Leopold and others have shown that ova may mature both before puberty and after the menopause. A further proof that the presence of menstruation is not necessary in order that impregnation may take place is afforded by the cases in which pregnancy commences during prolonged periods of amenorrhœa, and the occurrence of such cases of pregnancy shows that the discharge of ova takes place in these conditions. One of the most interesting cases of repeated pregnancies with absence of the menstrual periods is that recorded by Strassmann. The patient, a woman 45 years of age, commenced to menstruate at 16 years. The periods continued regularly until the eighteenth year when she had her first baby. From the eighteenth to the thirty-ninth year she did not menstruate at all and during this time she had 17 full-term pregnancies and a three months' miscarriage. At the age of 39 years menstruation returned and continued at regular monthly intervals until the age of 45 years. It is difficult to form an accurate estimate of the possibility of a woman becoming pregnant who has ceased to menstruate from the occurrence of the menopause. We have seen that even when the periods are still present at an advanced age the percentage of women in whom pregnancy occurs is relatively small and the chances against its occurrence are very large. A certain number of cases, however, are on record where, after the complete cessation of the periods, pregnancy has taken place. Their total number is, however, but a small one, especially if we eliminate all those in which there has been a return of the periods after the pregnancy. For example, in a case recorded by Priou the patient had her last child at the age of 48 years. She suckled the child and saw no catamenia afterwards. 24 years later, at the age of 72, she menstruated regularly for a period of six months, the menses then ceased for eight weeks, and she had a two months' miscarriage. Underhill and Lavasseur have met with cases in which the patients, at the ages of 49 and 50 years respectively, gave birth to children, in each instance after the periods had ceased for the space of two years. A still more striking case is that related by Depasse of a woman who ceased to menstrate at 50 years and had a baby at the age of 59 years, which she weaned on her sixtieth birthday. Hann has also met with a case in which three years after the menopause a patient became pregnant, but in this instance the periods returned regularly after the birth of the child and, as we have pointed out, such cases are not quite on the same footing as those in which the periods are never seen again.

MEDICAL EXCURSIONS FOR STUDENTS OF MEDICINE.

SOME three years ago M. Etienne Bazot organised a system of "Voyages Médicaux" which was intended to give medical men and others interested in science the opportunity of visiting French places which possessed a medical or other scientific interest, and if the "voyages" were properly appreciated of extending them to other countries. M. Bazot the future will not afford him that opportunity for a sound development both of knowledge and of manly character which the London hospitals have so notably provided hitherto.

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[3] THE LANCET, Dec. 31st, 1904, p. 1864.

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The Proposed National League for Physical Education and Improvement.

DURING the two and a half years which have elapsed since the publication of Major-General Sir FREDERICK MAURICE'S article in the *Contemporary Review* under the title of "National Health: A Soldier's Study," drawing attention to the deficient physique of youths presenting themselves for enlistment as recruits to the British army, few subjects have achieved a larger meed of attention than that of the supposed physical deterioration of our countrymen. In commenting on Sir FREDERICK MAURICE'S article[1] we ventured to doubt the soundness of his conclusions and to be sceptical of the existence of any progressive physical deterioration, in which we were confirmed by the report of the Inter-departmental Committee appointed to consider the question. The general conclusion of the committee was that "the impressions gained from the great majority of the witnesses examined do not support the belief that there is any general progressive physical deterioration." On the other hand, the investigations of the committee, while tending to allay anxiety in this direction, have shown that in matters of national health and physical well-being all is not well with us, and in its conclusions the committee offers some fifty suggestions for dealing with some of the more important evils, such as overcrowding, excessive infantile mortality, and the progressive urbanisation of the population. No better testimony to the value of these recommendations of the Inter-departmental Committee could be adduced than the number of movements which have been started recently by influential groups of philanthropic, scientific, and public-spirited men and women to arouse public interest with a view to insure legislative and municipal action to give effect to them.

In April of this year a meeting was held in London at the Examination Hall, Victoria Embankment, under the presidency of Sir WILLIAM H. BROADBENT, to promote the teaching of hygiene and temperance in elementary schools, to which we referred in a leading article.[2] A deputation subsequently waited upon Lord LONDONDERRY, the Lord President of the Council, to urge the importance of this matter. Again, in the *Times* of June 29th there was a note concerning the presentation of a memorial to Lord LONDONDERRY by the Anthropological Institute, and signed by others not belonging to the institute, praying that an anthropometric survey, a register of sickness, and an advisory committee to advise the Government on all legislative and administrative points concerning the public health might be established without delay, as recommended by the Inter-departmental Committee. It is difficult to over-estimate the benefits likely to accrue if these proposals are effectively carried out, and all medical practitioners will welcome the valuable information concerning anthropometric data and the increased knowledge of the incidence of disease and variation in type which are likely to ensue. The most recent movement has resulted in the formation of a league the actual title of which is not yet settled. The inaugural meeting was held at the Mansion House on June 28th under the presidency of the LORD MAYOR, but the movement has been in progress for some time and owes its inception largely to the energy and public spirit of the Bishop of RIPON, Sir LAUDER BRUNTON, and Sir HENRY CRAIK. The main objects of the league are to arouse public interest in matters relating to the physical condition of the people generally throughout the country; to correlate and to bring into association the various agencies at present at work to diffuse knowledge of the rules of health and of domestic hygiene; to endeavour to improve the physique of the rising generation; and to form organisations for these purposes where they do not exist. The movement is, moreover, national in character, non-sectarian, and non-political, and has the support of a large number of influential men. A draft scheme of the new league has been published in which it is suggested that there should be a central administrative organisation with local branches throughout the country. Each branch is to encourage all agencies in its own district which have for their object the promotion of physical well-being, to instruct mothers in the feeding and care of their children, to see that adequate opportunities are available for open-air games and physical exercises for both boys and girls, and, in fact, to foster all efforts to improve the general health and physique of the people.

The Inter-departmental Committee insisted on the importance of promoting measures to combat that perennial source of national disquietude, the excessive infantile death-rate, which is so great that in some of the most crowded districts of London it is as high as 223 per 1000—figures which are the more disquieting when we take into consideration the fact that at present stillbirths are not registered and therefore are not included in these figures That this appallingly high mortality is due in no small measure to ignorance on the part of the mothers of the elementary rules of infant feeding and nurture few can doubt who have experience of the homes of the poor or of out-patient departments at children's hospitals. The new league will achieve a work of truly national importance if it can bring about a general diffusion of these elementary rules by skilled, tactful, and specially educated district visitors or inspectors, as is now being done in a few of the more advanced municipalities. To insist on the importance of breast-feeding of infants wherever possible, to insure the purity of the milk-supply, and to instruct the mothers in the modification and use of cow's milk for purposes of infant feeding where necessary as a substitute for breast-milk are matters of vital importance. There is nothing new or original in these recommendations which have been urged again and again, but the time would now seem to be ripe for action, and with public interest awakened in the matter the league may be able to secure legislative measures to give effect to these urgently needed reforms. We have frequently insisted on the great importance of these matters and we may quote the following paragraph from the Annus Medicus glands and spleen. There were a large number of lymphoid cells, of large phagocytes, and at the same time a condition of hyperplasia of the blood-forming cells. There were also usually disseminated foci of necrosis and in patients dying from perforation peritonitis, diffuse degenerative changes, with marked congestion and œdema. Differential counts of the marrow cells in ten of the cases showed a marked relative increase in the non-granular or lymphoid variety of cell over the granular myelocytes. A different condition was found in the cases of acute pneumonia, of acute peritonitis, of cerebro-spinal meningitis, of puerperal septicæmia, and of retro-peritoneal abscess, in all of which there was a marked relative increase of the granular myelocytes over the non-granular cells. Moreover, no foci of necrosis were found and large phagocytic cells were rare or entirely absent. In the cases of chronic nephritis and of carcinoma of the gall-bladder there were no distinctive pathological changes and the conditions closely approximated to those in the two normal cases. Dr. Longcope discusses the significance of his observations and the probable manner in which the typhoid toxins produce these changes.

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[1] THE LANCET, Jan. 31st, 1903, p. 315.
[2] THE LANCET, April 8th, 1905, p. 939.

A CENTURY OF EMPIRE: ITS LESSONS AND RESPONSIBILITIES.

THE *Fortnightly Review* last month contained an article by Major-General Sir Thomas Fraser, K.C.B., on "A Century of Empire," to which we may call the attention of our readers because it deals in an able and a comprehensive manner with the subject treated. The author describes in a brief but realistic way the great growth of the British Empire that has taken place during the past century. He inculcates the necessity which exists for us as the leading race "to think imperially" and to realise a sense of unity or unification of purpose by being prepared to take a full personal share in the burthen of war if the scattered fragments composing that empire are to be maintained and held together in the future. Like all stories worth the telling, the moral of what General Fraser has to say lies on the surface. The principle that it is the duty of every citizen to qualify himself by an acquaintance with some form or other of army drill and military formations and with the use of the rifle in order to take his part if need be in the defence of his country seems to us to be sound and justifiable, and, what is more, we believe that if this principle were acted on it would for hygienic and disciplinary reasons lead to the physical and moral improvement of all concerned. In common with many other people it fell to our lot to study several of the numerous reports and articles which appeared during, and since the termination of, the war in South Africa and subsequently to read much in connexion with the momentous and dramatic series of events which have been taking place in the great struggle for supremacy in the Far East. The full force and effect, however, of what has been accomplished during the present war we have yet to learn. It is needless to say that these illustrations of modern warfare conducted on new principles and on a colossal scale have compelled attention to such questions as the organisation of our own forces for effectual national and imperial defence. Notwithstanding the reports and recommendations of Royal Commissions, the strenuous efforts of War Ministers, and the official and non-official suggestions of all sorts and conditions of men it cannot be said that a scheme has yet been devised which commands any general feeling of confidence and hearty assent. Such a measure must be not only so comprehensive in its nature and scope as to be capable of fulfilling the requirements of the empire but it must at the same time be of such a character also as to be suitable, practicable, and reasonably adaptable to the present time and circumstances. Is it beyond the power of our statesmen to design some rational scheme for compulsory national training in order to avoid compulsory service, which is a different thing? We cannot think so, difficult as the task is; neither do we think that our various colonies and dependencies would refuse to aid and to coöperate in giving effect to any bold and well-considered measure for imperial defence. Nor should the fact be lost sight of that the sanitary and medical requirements of armies of the present day have also to be taken into account in considering any big scheme of this kind, the settlement of which, whatever may be said or thought to the contrary, is one of the vital questions of the present time.

MYELOGENOUS LEUKÆMIA WITH MULTIPLE TUMOURS OF THE SMALL INTESTINE.

AT the meeting of the Société Médicale des Hôpitaux of Paris on June 23rd M. Maurice Letulle and M. Paul Halbron described the following remarkable case. A married woman, aged 25 years, was admitted into hospital on Jan. 25th, 1904, complaining of digestive troubles. She had a daughter, aged five years, who was in good health. The patient had not suffered from any previous illness except the ordinary maladies of childhood. She said that two months before admission she became ill with bronchitis and that digestive troubles followed. She vomited after meals and once had hæmatemesis. Then she noticed a large mass in the left flank. On admission she was pale and emaciated but not cachectic. There were strumous scars in the neck. In the left hypochondrium and left flank was a large and slightly tender tumour which descended almost as low as the pubes. It was slightly moveable and was evidently the spleen, though no notch could be felt. Examination of the blood showed that the patient was suffering from myelogenous leukæmia but she would not remain in hospital. She was readmitted in July in an extremely feeble and cachectic state. The abdomen was distended and gave the sensation of fluctuation. There was dyspnœa so great that paracentesis abdominis had to be performed immediately. About 17 pints of pale green slightly lactescent fluid were removed and the patient was greatly relieved. On the following day the fluid was again beginning to collect. The enlarged spleen could be felt and did not appear to be as big as it was in January. Thick, hard, and irregular masses were felt in the abdomen, which seemed like those due to tuberculous peritonitis. Death took place on this day. An examination of the blood made in the morning showed 2,150,400 red and 482,680 white corpuscles per cubic millimetre. A differential count of the latter gave the following percentages: polynuclear neutrophiles, 38·4; polynuclear eosinophiles, 3·6; polynuclear basophiles, 4·0; neutrophile myelocytes, 30·4; eosinophile myelocytes, 8·0; basophile myelocytes, 4·0; lymphocytes, 1·2; large mononuclears, 6·0; and transitional forms, 4·4. No nucleated red corpuscles were found. The deposit formed by centifugalisation of the ascitic fluid contained numerous polynuclears, a large number of myelocytes, mononuclears, endothelial cells, and many red corpuscles, of which a few were nucleated. At the necropsy a large quantity of hæmorrhagic fluid was found in the peritoneal cavity and the pelvis contained almost pure blood. Two kinds of lesions were observed on the coils of small intestine—(1) patches of arborescent vessels accompanied by recent false membrane; and (2) projections constituting veritable tumours of varying size. The largest were of the size of a mandarin orange. The tumours were smooth, soft, and elastic. The overlying peritoneum was normal. On the mesentery were similar masses. Tumours of a different kind were also present and the coils of intestine which bore them looked like shagreen. These tumours formed large dome-like papules. The mucous membrane of the was struck by the success of the visit of French medical men to our shores last year and of the return visit by British medical men to France during this year, and his organisation now proposes that a somewhat similar visit shall be paid to France by British students of medicine and "internes"—i.e., house physicians and house surgeons. The tours are not, of course, intended to be, as were the visits of the French and British medical men, purely complimentary, but have been drawn up after the manner of the well-known excursions to French watering-places conducted by Dr. Landouzy. Four tours have been arranged for, one lasting 20 days and costing 455 francs including everything, a les expensive one lasting 15 days and costing 375 francs, one lasting 12 days and costing 275 francs, and finally one lasting seven days and costing 180 francs. It is proposed that these tours should take place in August when the French students will be at liberty to receive their British *confrères* and it is hoped that next year a return visit will be paid to this country by French students. Any further information will be supplied by M. E. Bazot, Administrateur des Voyages Médicaux au Service Annexe de l'Œuvre, 1, Rue de l'Echelle, Paris. We are afraid, however, that the scheme has been laid before us too late for anything to be done this year, the medical schools having broken up for the vacation. We are all the more sorry that this should be so, for the idea seems to us to be a very good one and the programme arranged is certainly attractive. For instance, that for the 12-day tour at 275 francs includes a visit to Calais, Lille, Paris, Vichy, Royat, La Bourboule, Mont Dore, Néris-les-Bains, Boutges, and back by Paris to London. Concerts, receptions, theatres, and other entertainments have been arranged for and no one, we think, would regret going.

THE DIRTY DOOR HANDLE.

A DIRTY door handle is an obvious offence against sanitary principles. From a strictly bacteriological point of view all door handles, even those which present a clean and polished appearance, are probably dirty. Constant contact with the hand means contamination sooner or later and the kind and degree of contamination depend, of course, upon the conditions to which the hand has been exposed. It is conceivable that a dirty door handle would convey disease and there is thus ample reason why door handles should be kept as clean as possible. If this cannot be done the institution of the door handle should be abolished in favour of some method which dispenses with actual contact of the skin There is much to be said in favour of a foot lever for opening doors, as there is in the case of a foot lever instead of taps in the lavatory, but perhaps there might be difficulties in the application of this to railway carriages. Every railway passenger has experienced to his intense annoyance the unspeakable griminess of the door handle of a carriage, say, on the Underground Railway or any other railway the track of which lies through smoky tunnels. It avails little to polish these handles occasionally for they are so soon begrimed again. At one time there was no such thing as an inner handle communicating with the outer handle and so the passenger who wanted to get out had to soil his hands unless an obliging porter happened to be near. But the inside handle is clearly no remedy for the passenger who wants to enter a train. The undoubted evil of dirty door handles on the railway carriage is practically abolished on corridor trains in which, as on the tube railways, the duty of opening and closing the doors devolves entirely upon the conductor. It will probably be a long time, however, before the single compartment system is done away with, and as long as it exists so also will the ever-occurring nuisance of the dirty door handle. Some attempts apparently have been made to mitigate the evil, for we know of at least one railway company which, at any rate in some of its carriages, has adopted a short handle to turn which requires only a small effort owing to the operation of a lever inside the lock. Indeed, the lock may be easily released by a slight pressure of the thumb and the forefinger and only a slight soiling of the fingers is involved. Most railway carriage door handles, however, are large and clumsy, requiring a complete grip with the whole hand before any effect upon the lock can be obtained. In such a case the fouling of the hand is complete. Surely such a disagreeable system of opening the doors of railway carriages could be replaced by some much less objectionable method. Dirt is, of course, largely inseparable from the railway train but we think that this particular and offensive evidence of it might easily be minimised. At all events, no contrivance for the purpose could be better adapted to soil the hands of the passenger than the handles in use at the present time by most of our railway companies.

THE BONE MARROW IN TYPHOID FEVER.

THE characters of the leucopenia or hypoleucocytosis of typhoid fever have been carefully studied, notably by Naegeli and Thayer. The most characteristic changes in the leucocyte count of an uncomplicated case are a decrease in the number of polymorphonuclear leucocytes and a relative increase in the number of lymphocytes, especially of the hyaline or large lymphocyte variety, while the eosinophiles are diminished or absent. This leucopenia is as a rule well marked during the second week and persists into the period of convalescence. When complications arise, especially such as are due to secondary infection, varying degrees of leucocytosis occur with an increase in the number of polymorphonuclears, though often to a less degree than would be produced by a similar infection if occurring primarily. This point has recently been emphasised by Kast and Gutig, who after a study of 40 cases of typhoid fever complicated by secondary infections found that in 80 per cent. of them the leucocyte count ranged below 7000 per cubic millimetre. This was especially so in cases of perforation of a typhoid ulcer followed by general peritonitis. It is obvious that a study of the condition of the bone marrow in cases of typhoid fever is of great interest in this connexion but few observations are recorded bearing upon this matter. Fraenkel has drawn attention to focal necrosis of the bone marrow in some cases and Mallory has described changes in the bone marrow similar to those occurring in the spleen. The subject has been investigated in a laborious and painstaking research by Dr. Warfield T. Longcope, whose conclusions are recorded in an interesting paper published in the Proceedings of the Pathological Society of Philadelphia (Vol. VIII., No. 2, p. 49, 1905), to which is appended a useful bibliography. The condition of the bone marrow was investigated in 26 cases of typhoid fever, and for purposes of comparison in 15 cases of pneumonia, two of miliary tuberculosis, one of acute cerebro-spinal meningitis, one of retroperitoneal abscess, one of puerperal septicæmia, four of chronic nephritis, one of carcinoma of the gall-bladder, and also in two normal individuals (in the leg immediately after amputation for accident). Details are given of the methods used and of the conditions observed. Dr. Longcope divides the cells of the marrow into two groups, the first being the granular cells, and comprising the neutrophilic granular myelocyte and the eosinophilic granular myelocyte together with the ordinary polymorphonuclear leucocyte and the eosinophiles. The second group, that of the non-granular cells, includes the large and small lymphocytes. The 26 cases of typhoid fever showed definite and fairly constant changes which closely resembled those found in the mesenteric lymph *glands and spleen.* There were a large number of lymphoid cells, of large phagocytes, and at the same time a condition of hyperplasia of the blood-forming cells. There were also usually disseminated foci of necrosis and in patients dying from perforation peritonitis, diffuse degenerative changes, with marked congestion and œdema. *Differential counts* of the marrow cells in ten of the cases showed a marked relative increase in the non-granular or lymphoid variety of cell over the granular myelocytes. A different condition was found in the cases of acute pneumonia, of acute peritonitis, of cerebrospinal meningitis, of puerperal septicæmia, and of retroperitoneal abscess, in all of which there was a marked relative increase of the granular myelocytes over the non-granular cells. Moreover, no foci of necrosis were found and large phagocytic cells were rare or entirely absent. In the cases of chronic nephritis and of carcinoma of the gall-bladder there were no distinctive pathological changes and the conditions closely approximated to those in the two normal cases. Dr. Longcope discusses the significance of his observations and the probable manner in which the typhoid toxins produce these changes.

A CENTURY OF EMPIRE: ITS LESSONS AND RESPONSIBILITIES.

THE *Fortnightly Review* last month contained an article by Major-General Sir Thomas Fraser, K.C.B., on "A Century of Empire," to which we may call the attention of our readers because it deals in an able and a comprehensive manner with the subject treated. The author describes in a brief but realistic way the great growth of the British Empire that has taken place during the past century. He inculcates the necessity which exists for us as the leading race "to think imperially" and to realise a sense of unity or unification of purpose by being prepared to take a full personal share in the burthen of war if the scattered fragments composing that empire are to be maintained and held together in the future. Like all stories worth the telling, the moral of what General Fraser has to say lies on the surface. The principle that it is the duty of every citizen to qualify himself by an acquaintance with some form or other of army drill and military formations and with the use of the rifle in order to take his part if need be in the defence of his country seems to us to be sound and justifiable, and, what is more, we believe that if this principle were acted on it would for hygienic and disciplinary reasons lead to the physical and moral improvement of all concerned. In common with many other people it fell to our lot to study several of the numerous reports and articles which appeared during, and since the termination of, the war in South Africa and subsequently to read much in connexion with the momentous and dramatic series of events which have been taking place in the great struggle for supremacy in the Far East. The full force and effect, however, of what has been accomplished during the present war we have yet to learn. It is needless to say that these illustrations of modern warfare conducted on new principles and on a colossal scale have compelled attention to such questions as the organisation of our own forces for effectual national and imperial defence. Notwithstanding the reports and recommendations of Royal Commissions, the strenuous efforts of War Ministers, and the official and non-official suggestions of all sorts and conditions of men it cannot be said that a scheme has yet been devised which commands any general feeling of confidence and hearty assent. Such a measure must be not only so comprehensive in its nature and scope as to be capable of fulfilling the requirements of the empire but it must at the same time be of such a character also as to be suitable, practicable, and reasonably adaptable to the present time and circumstances. Is it beyond the power of our statesmen to design some rational scheme for compulsory national training in order to avoid compulsory service, which is a different thing? We cannot think so, difficult as the task is; neither do we think that our various colonies and dependencies would refuse to aid and to coöperate in giving effect to any bold and well-considered measure for imperial defence. Nor should the fact be lost sight of that the sanitary and medical requirements of armies of the present day have also to be taken into account in considering any big scheme of this kind, the settlement of which, whatever may be said or thought to the contrary, is one of the vital questions of the present time.

MYELOGENOUS LEUKÆMIA WITH MULTIPLE TUMOURS OF THE SMALL INTESTINE.

AT the meeting of the Société Médicale des Hôpitaux of Paris on June 23rd M. Maurice Letulle and M. Paul Halbron described the following remarkable case. A married woman, aged 25 years, was admitted into hospital on Jan. 25th, 1904, complaining of digestive troubles. She had a daughter, aged five years, who was in good health. The patient had not suffered from any previous illness except the ordinary maladies of childhood. She said that two months before admission she became ill with bronchitis and that digestive troubles followed. She vomited after meals and once had hæmatemesis. Then she noticed a large mass in the left flank. On admission she was pale and emaciated but not cachectic. There were strumous scars in the neck. In the left hypochondrium and left flank was a large and slightly tender tumour which descended almost as low as the pubes. It was slightly moveable and was evidently the spleen, though no notch could be felt. Examination of the blood showed that the patient was suffering from myelogenous leukæmia but she would not remain in hospital. She was readmitted in July in an extremely feeble and cachectic state. The abdomen was distended and gave the sensation of fluctuation. There was dyspnœa so great that paracentesis abdominis had to be performed immediately. About 17 pints of pale green slightly lactescent fluid were removed and the patient was greatly relieved. On the following day the fluid was again beginning to collect. The enlarged spleen could be felt and did not appear to be as big as it was in January. Thick, hard, and irregular masses were felt in the abdomen, which seemed like those due to tuberculous peritonitis. Death took place on this day. An examination of the blood made in the morning showed 2,150,400 red and 482,680 white corpuscles per cubic millimetre. A differential count of the latter gave the following percentages: polynuclear neutrophiles, 38·4; polynuclear eosinophiles, 3·6; polynuclear basophiles, 4·0; neutrophile myelocytes, 30·4; eosinophile myelocytes, 8·0; basophile myelocytes, 4·0; lymphocytes, 1·2; large mononuclears, 6·0; and transitional forms, 4·4. No nucleated red corpuscles were found. The deposit formed by centifugalisation of the ascitic fluid contained numerous polynuclears, a large number of myelocytes, mononuclears, endothelial cells, and many red corpuscles, of which a few were nucleated. At the necropsy a large quantity of hæmorrhagic fluid was found in the peritoneal cavity and the pelvis contained almost pure blood. Two kinds of lesions were observed on the coils of small intestine—(1) patches of arborescent vessels accompanied by recent false membrane; and (2) projections constituting veritable tumours of varying size. The largest were of the size of a mandarin orange. The tumours were smooth, soft, and elastic. The overlying peritoneum was normal. On the mesentery were similar masses. Tumours of a different kind were also present and the coils of intestine which bore them looked like shagreen. These tumours formed large dome-like papules. The mucous membrane of the intestine was normal. The mesenteric glands were a little swollen. The spleen weighed 1620 grammes; it was firm, hard to the knife, and on section showed a homogeneous surface of the colour of normal muscle. The liver weighed 1675 grammes and had a normal appearance except that it looked a little pale and that in places there seemed to be small hæmorrhages. The bone marrow appeared to be normal. Microscopic examination showed that the subserous coat of the intestine was considerably hypertrophied, its thickness exceeding a centimetre. It was traversed by numerous vessels of new formation. Around these were developed connective-tissue fibres, in the meshes of which were polynuclear cells, principally neutrophiles, myelocytes, and lymphocytes. There were also giant cells which invaded the muscular coat. On the peritoneal surface were dense, non-vascular, false membranes, full of lymphocytes and polynuclear cells. The tumours were composed of the same tissue as that which produced the diffuse hypertrophy of the submucous coat. In the meshes of the connective tissue were some liquid, numerous neutro-, baso-, and acidophile myelocytes, and a large number of polynuclear cells. The spleen was much altered; the lymphatic follicles had almost completely disappeared; the fibrous trabeculæ were thickened; in the pulp were lymphocytes, mononuclear and non-granular cells, polynuclear cells, myelocytes, and a few nucleated red corpuscles. In the bone marrow were giant cells in a state of activity, various forms of myelocytes, among which were many basophiles and eosinophiles, and some nucleated red corpuscles. The mesenteric glands were almost entirely transformed into myeloid tissue. Clinically two periods can be distinguished in this case of leukæmia which proved fatal in eight months. At the beginning gastro-intestinal symptoms, severe abdominal pain, and repeated vomiting were dominant; then the general health failed and ascites developed. When after paracentesis the masses were felt in the abdomen both the history and the signs seemed to render the diagnosis of tuberculous peritonitis probable. The condition of the spleen was typical of myelogenous leukæmia but this was not the case with the intestinal lesions. The whole of the small intestine was thickened by the formation of a new coat which in places formed small bosses and in others veritable tumours (myelomata). The clinical importance of the intestinal symptoms in myelogenous leukæmia has been pointed out by Rendu and by Jossuet. But no case appears to have been recorded in which abdominal masses were felt during life. M. Letulle and M. Halbron conclude that both clinically and anatomically the evidence shows that an intestinal form of myelogenous leukæmia may be distinguished.

AN ANNOTATION BY JOHN HUNTER.

MARGINALIA by famous men have always an interest for intelligent readers, even when their writers have apparently been actuated by a fit of temper or even fury. John Hunter was a good hater who often nursed a grievance and he was wont to scourge his adversaries and those who had offended him with no mean vigour when occasion offered. Thus we find him scribbling on the margin of one of the original manuscript Hunterian Museum catalogues sentences which even after the lapse of more than a century retain all their pristine acrimony. The writer of the catalogue is speaking, in a note or appendix, of the famous dispute on the absorbent nature of the lymphatics. "In the Life of Dr. Hunter," he says, "written by Dr. Simmons [John Foart Simmons] we find a desire of robbing him of the discovery of the lymphatics being absorbents, and to prove that he was not the discoverer a passage is quoted from Noguez' works." The mention of this writer provokes John Hunter to the following characteristic outburst. It was scribbled, apparently in great haste, on a stray scrap of paper and has been bound into the catalogue and piously furnished with a transcript in full by Hunter's disciple, the College Conservator, William Clift. "Noguez' work," says John Hunter, "is what they call an improvement upon Keil, but I may venture to say that those who are only able to publish the works of others are themselves not fit to publish any thing in that way; for they can never be a judge of what should be added, nor what should be taken away; for if they were perfectly master of the subject, then they certainly could make a better book themselves upon the subject. It is much easier for a man of real knowledge to make a new work than to mend an old one. It is clear that they can only in real knowledge be cobblers; and indeed there are few works that deserve a new edition, when they require additions, excepting by their original author." There is much to commend Hunter's view.

THE TRAINING OF WORKHOUSE INFIRMARY NURSES IN YORKSHIRE.

THOSE who have watched the development of the art of nursing during the last quarter of a century, and who must of necessity have been struck by the improvement that has taken place in the attainments of nurses in the various hospitals throughout the kingdom, cannot have failed also to note the desire on the part of the public to be supplied with properly trained nurses in cases of illness and the gradual improvement in the status and training of nurses in workhouses and union infirmaries. Some time ago a conference took place between certain of the unions of the West Riding of Yorkshire with the idea of arranging some scheme of training and of examination on a common basis, but no definite conclusions were arrived at. During the last ten years the guardians of the Leeds union have provided a systematic course of training for probationer nurses and the results have been eminently satisfactory. The union infirmary, which is undergoing substantial reconstruction and will be considerably enlarged, is certified at present for 650 cases, exclusive of 120 imbeciles. The number of acute cases and of surgical cases is considerable. During the year 1904 there were 2474 patients admitted. In such an institution which has as its head an experienced resident medical superintendent in the person of Dr. J. Allan, who is assisted by two juniors, the training can, as might be expected, be thorough and efficient, though even in this case it would be desirable if an arrangement could be made for the nurses, during some time of their training, to spend some months at a large general hospital to extend their surgical training. The staff consists of a matron at a salary of £100, an assistant matron, a sister whose duties are mainly in the nursing home, a night superintendent, and ward sisters at salaries of from £32 to £35, together with assistant nurses and probationers who are undergoing a course of training. These constitute in all a staff of 60, exclusive of those in charge of the imbecile department. The probationers attend on two months' trial. If found suitable physically and it is thought that they will turn out good nurses they then "sign on" for three years' training and during this time they are paid at the rates of £10, £14, and £18. They are instructed in systematic classes and tutorial classes first by the matron and then by the resident medical superintendent. At the end of their three years' training they are examined by an independent external examiner by means of a written examination and by a thorough *vivâ voce* examination, and on his report, coupled with that of the resident medical superintendent and the matron, the certificate of efficiency is given or withheld. Since 1895 about 100 nurses have obtained certificates and the examiner has had no difficulty in the maintenance of a satisfactory standard. During the last few years the guardians of the Hunslet union have instituted a course of training on much the same lines as those above noted. Mr. J. Buck, the visiting medical officer, worked for some years under Dr. Allan and has taken up the work of lecturing to the nurses and instructing them in tutorial classes. The handsome and beautifully equipped workhouse and infirmary of the various parishes within this union, which represent a population of about 83,000, were opened some 18 months ago. The present accommodation is for 450 but the administrative block is adapted for double that number and the site covers an area of 18½ acres. The infirmary is a separate building, connected with the main building by a covered corridor, and consists of a central block which includes the nurses' quarters and of pavilions for males and females, which together give accommodation for 146 patients. There are also a small maternity block for five cases and a separate block for imbeciles with accommodation for 36. The staff consists of a matron at a salary of £45, three charge nurses, and at present eight probationers. The charge nurses are paid £30 and the probationers at the rates of £12, £16, and £20 for their three years of training. At both institutions the accommodation for the nurses is excellent; good bedrooms, sitting rooms, and recreation rooms are provided, and the guardians have shown themselves willing to fall in with any suggestions from the medical officers and from the external examiner who is the same for each union.

SLEEP IN CASES OF CEREBRAL TUMOUR.

THE symptom of sleep in cerebral tumours has not received much attention. One reason is that it has not been carefully distinguished from allied states, such as coma and torpor. In the *Archives Générales de Médecine* of June 20th Professor Raymond has published a valuable lecture on the subject. As points of distinction between sleep and coma he mentions that in the latter the pulse is large and strong and has the characters of the cerebral pulse, that the respiration is deep and often stertorous, and, the most important distinction, that the most powerful stimulation does not awaken the patient. But these differences are diminished when the coma is only slight—when there is a state of obnubilation or somnolence of greater or less intensity. Incomplete coma, like sleep, may last only a few hours and strong stimulation may awaken the patient, but there is not a true awakening as in the case of sleep, the patient comes out of the state of torpor only for an instant and does not quickly regain all his faculties. Professor Raymond relates the two following cases of cerebral tumour in which sleep was a prominent symptom. A domestic servant, aged 22 years, was admitted into the Salpêtrière Hospital at the beginning of January, 1905. In July, 1904, she was attacked with irresistible sleep and was taken to the Hôtel Dieu where "hysterical sleep" was diagnosed. She slept for three whole days and then *awoke spontaneously*. The limbs were stiff, there were frequent attacks of vertigo, and she continually staggered. In August there was slight improvement but in September the staggering increased, she complained of dizziness, and talked in her sleep. In October she improved again and in November she attempted to return to work but felt giddy and somnolent all day. There was at times incontinence of urine and fæces. In December she suddenly passed into a sleepy condition which lasted 24 hours. On awaking she was prostrated, suffered from headache, and answered questions with difficulty. This condition persisted at the time of admission to the Salpêtrière Hospital. On the following days she was in a state of hebetude. She took her food and slept well and seemed to understand partly what was said to her. At times urine and fæces were passed. The head was thrown back, the face was grimacing, the expression was stupid, and articulation was so defective that she could scarcely be understood. She complained of constant occipital pain, which was increased when the head was bowed. The gait was hesitating but not definitely ataxic or cerebellar. There were slight rigidity of the limbs, which was greater in the lower ones, and increased tendon reflexes. There were no stigmata of hysteria. Her mental condition was torpid and she acted like an automaton. On shaking her energetically she was aroused for a few moments and answered questions better and with improved articulation but in a few minutes she relapsed into her habitual somnolent state. On Jan. 26th she became comatose and the temperature rose to 105·8° F. She died on the following morning. The necropsy showed a sarcoma growing from the left side of the pons and two secondary nodules in the left subthalamic region. Professor Raymond points out that though the diagnosis of hysteria made before the patient was admitted into the Salpêtrière Hospital was natural he found no stigmata of hysteria. The sleep resembled neither coma nor narcolepsy. For, on the one hand, the patient could be aroused, and, on the other, the sleep was not profound but a condition of somnolence or continuous prostration. In the absence of any intoxication he was led to suspect cerebral tumour. In the second case a woman, aged 42 years, was admitted into hospital. She enjoyed good health until a fortnight previously, when she passed into a state of continuous and progressive somnolence. She was in a condition bordering on coma, soon became completely comatose, and died on the following day before a thorough examination could be made. The necropsy showed two sarcomatous tumours in the right cerebral hemisphere—the larger in the posterior part of the lateral ventricle and the smaller, which was apparently secondary, in the occipital lobe. Only a few cases in which sleep, as distinguished from the allied states of coma, somnolence, or torpor, has been observed as a symptom of cerebral tumour have been previously recorded. Janet has described the case of a French girl, aged 14 years, of a very neurotic family who went to America.[1] In June, 1891, she complained of fatigue and torpor. After 48 hours she became delirious and then fell into a profound sleep which lasted for a fortnight without interruption. No reply to questions could be obtained from her but from time to time she swallowed a little milk. She improved and was sent back to France. But two days after her arrival she again passed into a condition of sleep though less profound than before. When spoken to she answered and complained of headache and begged not to be disturbed. She vomited several times. She could walk but knocked against objects. There were right hemiparesis and hypo-æsthesia with intention tremor of the arm and leg and left facial spasm. Intelligence was retained but memory for recent events was lost. When left alone she relapsed into sleep, from which she could be awakened by shaking. She died on August 29th. The necropsy showed a "parasitic cyst" three centimetres in diameter at the apex of the sphenoid lobe. Soca has recorded a case of sarcoma of the pituitary body in a girl, aged 18 years, who slept for seven months.[2] The sleep was apparently natural and she sometimes awoke spontaneously. Every day she was awakened to take food. Professor Raymond points out that sleep is usually an early symptom, or the first symptom, in those cases of cerebral tumour in which it occurs and that often other symptoms are so vague as to render the diagnosis difficult. Sometimes periods of sleep are separated by longer or shorter intervals and later the sleep becomes continuous. In other cases sleep is continuous from the beginning to the end. The nature of the sleep varies: sometimes it resembles natural sleep and the patients readily awake and entirely recover consciousness; others are in a state of torpor from which they can be roused only for an instant by energetic shaking and even then there is intellectual obnubilation. Still other patients cannot be awakened even for an instant and their state borders on true coma. Further, the patient may pass through all these conditions.

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[1] Archives Générales de Médecine, October, 1891.

[2] Nouvelle Iconographie de la Salpêtrière, 1900, p. 101.

VACATION COURSES IN BACTERIOLOGY AND PATHOLOGY AT KING'S COLLEGE, LONDON.

A course in clinical and practical bacteriology, suited to the requirements of medical practitioners and senior students —e.g., for the M.B. examination—will be held daily at King's College, London, from 10.30 A.M. to 1 P.M., commencing on Wednesday, July 26th, and ending on Saturday, August 5th. The course will consist of lectures, demonstrations and practical work; in the last-named the members of the class will make for themselves permanent preparations of the chief pathogenic micro-organisms and will carry out the principal manipulations employed in bacteriological investigations. The fee will be £3 3*s.* inclusive of materials and the like. Names should be sent as soon as possible to the Secretary or to Professor R. T. Hewlett. A course in clinical pathology will also be held on six afternoons from July 27th to August 4th, from 2 to 4.30 P.M. The course will consist of demonstrations and of practical work. The inclusive fee is £2 2*s.* If both courses are taken the inclusive fee will be £4 4*s.*

FATAL POISONING WITH SODIUM CHLORIDE.

In *American Medicine* of April 22nd Dr. C. M. Combs has reported an unfortunate accident which resulted in fatal poisoning by sodium chloride, a substance usually considered non-poisonous. No similar case appears to have been recorded previously. Vaginal oöphorectomy was performed on a woman, aged 35 years. Her general condition was good, the operation was short and simple, and no apprehension was felt as to her recovery. To prevent thirst and renal congestion 500 cubic centimetres of normal saline solution were ordered to be injected under each breast. By mistake a stock bottle containing an almost saturated solution of sodium chloride was used instead of the diluted 0·9 per cent. solution. The injection was given while the operator was making the final toilet of the peritoneum. Four hours later, when the patient was seen, she was unconscious. The mistake was ascertained when the stock bottle was found empty. The woman had received 1920 grains of sodium chloride. She remained comatose for six hours. Then she was maniacal and talked until death which took place 24 hours after the operation. At first the pulse was 190 and bounding; later it was too rapid to be distinguishable, and the respirations rose to 70. There were insatiable thirst, a slowly ascending temperature attaining a maximum of 104° F., and constant nausea. The vomit contained five grains of sodium chloride to the drachm. During the 24 hours 300 cubic centimetres of urine were excreted which contained 11 grammes of sodium chloride—a normal amount considered absolutely but large relatively to the quantity of urine. There was neither albumin nor sugar. The red blood corpuscles were shrivelled and crenated from exosmosis. Dr. Combs thinks that the rapidity of the pulse and respiration was due to an effort of nature to compensate for the diminished oxygeniferous powers of the corpuscles. The treatment consisted in keeping the patient in a continuous hot pack and allowing and even urging her to drink large quantities of water. The combined excretions (urine, sweat, fæces, vomit, and tears) appeared to remove nearly half of the salt.

The commissioner of public health for Brisbane reports that for the week ending June 3rd 1 case of plague occurred in Brisbane and 1 death from plague at Ipswich, near Brisbane, on May 31st. During the previous week ending May 27th no case of plague occurred in the district. As regards the Mauritius, a telegram from the Governor received at the Colonial Office on July 7th states that for the week-ending July 6th there was 1 case of plague and 1 death from the disease. As regards the Cape Colony, the medical officer of health of the colony reports that for the week ending June 17th 1 case of plague was discovered, being that of a native male found dead at East London on June 15th. Plague-infected rodents were found at Port Elizabeth, East London, and King William's Town. At Hong-Kong, a telegram from the Governor received at the Colonial Office on July 10th states that for the week ending July 8th there were 21 cases of plague and 21 deaths from the disease.

His Royal Highness the Duke of Connaught, president of the hospital, who will probably be accompanied by the Duchess of Connaught and Princess Patricia, will perform the ceremony of opening the nurses' home at the City of London Hospital for Diseases of the Chest, Victoria Park, E., on Wednesday, July 26th, at 4 P.M.

The residue of the estate of the late Mrs. Hames, wife of Mr. G. H. Hames, F.R.C.S., of 113, Sloane-street, London, has been bequeathed to King Edward's Hospital Fund for London, subject to her husband's life interest. The residue will probably exceed £50,000.

The Archbishop of Westminster will deliver a sermon before the Royal Institute of Public Health on Sunday, July 23rd, at the new Westminster Cathedral. Medical practitioners are invited to be present in academic costume.

General Laurie's Bill to amend the Medical Act of 1886 in such a way as to admit of a more complete reciprocity between Canada and the mother country has passed the second reading without comments.

A short vacation course of 22 lectures and demonstrations will begin at the Post-Graduate College, West London Hospital, on August 10th, information concerning which can be obtained from the dean.

The total amount received at the Mansion House for the Metropolitan Hospital Sunday Fund up to Wednesday evening exceeded £50,000.

Looking Back.

FROM

THE LANCET, *SATURDAY*, July 14, 1827.

We have not deemed it a duty to bring the professional conduct of private practitioners before the public eye, unless there have been connected with it circumstances of peculiar atrocity, calculated either to scandalise the profession, or prove detrimental to the public welfare; and even in such cases we have hitherto refrained from publishing the names of the parties, unless they have appeared to answer for their misdeeds in some of our courts of law, or public offices of police. But we are not quite sure, that we are acting with equal propriety in exercising a similar delicacy on the present occasion, because the circumstance to which we have to call the attention of the profession, is one so truly disgraceful, so characterised by a base and cold-blooded disregard of human life and human happiness, for the sake of contemptible and paltry lucre, that any lenity displayed in exposing it, almost amounts to a participation of the crime. A correspondent, on whose veracity the most perfect reliance may be placed, informs us, that in one of the western counties, a person calling himself a *surgeon*, has recently *inoculated* with the *virus of small pox some* *hundreds of persons at five shillings a head*, thus attempting to perpetuate one of the most blind and besotted of prejudices against the immortal labours of JENNER, and to keep alive and extend the ravages of one of the most horrible diseases that ever afflicted the human race. To the individual in question we do not address one word, as he must be devoid of sense, as well as of feeling; but surely prudence demands that the public should be protected against the remorseless proceedings of such a relentless monster; and, in the absence of an EFFICIENT College of Surgeons, we are not aware that any measure other than an Act of Parliament, rendering inoculation for the small pox, without previous vaccination, punishable by fine and imprisonment, can prove an effectual safeguard.

This subject demands the earliest attention of Parliament.[1]

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE FELLOWS' DINNER.

THE second annual Fellows' dinner was held at the College in Lincoln's Inn-fields on July 6th, after the meeting of Fellows for the election of members of Council. Nearly 100 Fellows were present, Mr. JOHN TWEEDY, the President, being in the chair. Many present and past members of the Council were present, among the senior Fellows being Mr. Thomas Bryant, Sir Thomas Smith, Colonel J. G. Pilcher, I.M.S., and Mr. T. W. Nunn.

The PRESIDENT proposed the toast of "The King" and after this had been duly honoured it was followed by the toast of "The Queen, the Prince and Princess of Wales, and the other members of the Royal Family." In proposing this toast the President mentioned that the Queen had paid a private visit to the museum in February last and that she had inspected all the museum and had expressed herself as very pleased with all she had seen and said that she hoped to revisit it on some future occasion.

The PRESIDENT then asked them to drink to "The Fellowship of the Royal College of Surgeons of England." He said that the toast list was purposely short, as it was wished to make the gathering somewhat of the nature of a conversazione and it was hoped that at the close of the dinner the Fellows would adjourn to the next room and spend their time in conversing with one another. At the Fellows' dinner last year he had mentioned that two of the original Fellows were still surviving, but even while he was yet speaking the spirit of John Birkett was passing to its rest and only a fortnight later died the other, Sir John Simon. Then Luther Holden became the senior Fellow and he died a few months later. Each of these Fellows in turn was the senior Fellow and each represented one of the three great branches of science with which the College is connected. Holden represented anatomy, especially in its relation to surgery; Birkett represented surgery; and Simon represented the science of hygiene. Throughout the world the Fellowship of the College was acknowledged to be the highest test of surgical knowledge. At present the Fellows were increasing in numbers by some 50 a year, but he thought that in the future the number of Fellows would become much greater. In conclusion, the President called upon those present to drink to the Fellowship of the Royal College of Surgeons of England and he asked Mr. Bryant and Colonel Pilcher to reply.

Mr. BRYANT said that he was glad to have the opportunity of replying to the toast, as he wished to present to the College a loving cup. For some years there had been held dinners of the Fellows but those dinners had not been held in the College. When the Council had decided to have an annual Fellows' dinner in the College buildings it was thought desirable to discontinue the other dinners. There was, however, in the hands of the secretaries a sum of some £80 and at first there had been some difficulty in deciding what to do with it. The permanent committee, which consisted of Mr. F. W. Braine, Mr. C. C. Braine, Mr. Lowndes, and himself, had at length decided to purchase a loving cup and to present it to the College. He had, therefore, the great pleasure of presenting the cup to the President on behalf of the College.

The PRESIDENT accepted the gift in the name of the College and the cup having been filled with wine was sent round, the President handing it first to Mr. Bryant, with the following words: "This cup contains a wine of France with whose great school of surgery we are linked by centuries of historical association and by considerations of mutual obligation and respect. The wine is fortified with a spirit, the spirit of good fellowship, and it is sweetened with pleasant memories. I will now add the cordial—a hearty welcome and good wishes to you and everyone here present."

Colonel PILCHER also responded to the toast of "The Fellowship." He mentioned how high a position was held by the Fellowship of the College throughout India and the colonies, as well as in the British Isles.

Sir THOMAS SMITH proposed "The Health of the President," who was, he said, the cause of the institution of these dinners and no worthier representative of the College had ever filled the presidential chair.

The PRESIDENT, in acknowledging the toast, insisted that the greater part of the work had fallen on the shoulders of the honorary secretaries, Mr. C. T. Dent and Mr. G. H. Makins. He hoped that the Fellows would move into the adjoining room and view the specimens which had been added to the museum of the College during the preceding 12 months. This was done and for an hour an informal conversazione was held.

MEDICINE, ITS PRACTICE AND ITS PUBLIC RELATIONS.

CHAPTER XX.[1]

SOME CONCLUDING SPECULATIONS.

The Sequel to the One-portal System.—The Corporations as the Examining Authority.—A British Academy of Medicine.—An Imperial Naval, Military, and Colonial Service.—A Ministry of Public Health.—The late Lord Salisbury on Moderation.

I MAY repeat in this last chapter what has been said already concerning the purpose of these articles. The desire has been rather to describe the existing condition of the medical profession than to suggest remedies for anything wanting in that condition. A vagueness of project in medical reformers has in the past much retarded such efforts as have been made to place the profession of medicine upon a better footing; and this has been brought about by disagreement as to what the actual evils are and what their actual dimensions, rather than by hesitation as to the necessary remedies. It is not to be wondered at when medical men have been themselves, as a body, so doubtful of their aims that the public have been equally so; but the want of sympathy manifested by the public has prevented fair play being given to schemes for the improvement of the status of the medical profession under which the public would have been the chief beneficiaries.

The various defects in the professional life of a medical man, especially in the public relations of that life, have been detailed at some length, in the course of which remedies have frequently become apparent, but no systematic scheme of reform has been advocated because, on good grounds or not, I am inclined to regard such schemes as visionary. The education of the medical student may become a definite and symmetrical thing, the quack may have his soaring wings clipped, the State may find a way to provide both medical assistance for the poor and sanitary supervision of rural neighbourhoods without relying largely on unpaid work—these things, not only may, but will, happen in course of time. But I cannot conceive that any Bill proposing to amend the Medical Acts at one swoop in a wholesale manner will receive serious discussion in the House of Commons. Medical reform will arrive piece-meal and the career of the medical man will be made smooth much in the way that an old city street is reconstructed to meet modern demands. There are here no wholesale demolition and no elaborate scheme of rebuilding. Some structures, which have become useless, are replaced by other structures better fitted for modern functions; a private house becomes a shop; a warehouse becomes a railway station; a narrow gut by the gradual placing back of one or other side of the street is transformed into a channel of symmetrical width with the rest of the thoroughfare; a few new public buildings make their appearance; and so on—what can be used remains in use, obsolete buildings which can be satisfactorily converted to other purposes are so converted, and what is of no good perishes; but all the old associations are not violently destroyed by the crowbar and pickaxe. Similarly the medical profession, in its domestic as well as in its public relations, can be adequately reformed by the gradual removal of abuses, by the introduction of improvements that are sorely wanted, and by alteration of the functions of institutions whose efforts no longer meet the demands made upon them. There is no need for violent and wholesale reorganisation of everything, but there is every need for a common understanding among medical men as to what are the things that in the public interest most call for reform, for common endeavour to get such reform carried out, and for the enlightened sympathy of the public in the work.

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[1] Excerpt from a leading article.

NOTE.—In a letter published in THE LANCET of August 4th, 1827, "Veritas" states: "I regret to say there are some practitioners in the environs of this great metropolis, who are doing daily, *under coverture*, what this person has the greater manliness and honesty to do *openly*, and probably under the persuasion that he is acting right."

[1] Chapters I., II., III., IV., V., VI., VII., VIII., IX., X., XI., XII., XIII., XIV., XV., XVI. XVII., XVIII., and XIX. were published in THE LANCET of Feb. 18th (p. 447) and 25th (p. 517), March 4th (p. 593), 18th (p. 736), and 25th (p. 817), April 1st (p. 877), 15th (p. 1017), 22nd (p. 1089), and 29th (p. 1151), May 6th (p. 1218), 13th (p. 1287), 20th (p. 1375), and 27th (p. 1449), and June 3rd (p. 1533), 10th (p. 1584), 17th (p. 1657), and 24th (p. 1741), and July 1st (p. 43) and 8th (p. 87), 1905, respectively.

It is also necessary for practical reasons that the medical profession should formulate all demands for the betterment of existing circumstances with moderation and should recognise freely such improvements as have taken place. To do otherwise induces inactivity in those of the medical profession who would work for the betterment of their order, while influential people outside the medical profession take leave to regard medical men as unjust grumblers, for whom it is no good to try to do more as it is not allowed that anything has been done at all. I feel that anyone who has read these chapters in THE LANCET might be inclined to sum them up roughly as a mass of grumbles—grumbles about money, grumbles about status, grumbles about education, and so on—but the scantiness of the suggestions that have been ventured for the alteration of the circumstances complained of should show that I have not endorsed the view that the medical profession is in a very unfortunate plight. The medical profession has steadily progressed in learning during the past 50 years—this cannot be gainsaid—while as a whole the progress has been no less marked in moral and social standing. The princes of medicine have enjoyed always the esteem and consideration of the public, but this has not necessarily been the case with the medical profession as a whole. But there are more medical men to-day who are thoroughly well-educated cultured gentlemen than there were ten years ago, and every decade for the last half a century has witnessed a steady levelling up commensurate with the rise in the knowledge and culture of the public. The Latinity upon which the Fellows of the Royal College of Physicians of London were wont to pride themselves may have lost some of its finish, but this fact is surely counterbalanced by the disappearance of the apothecary vendor of tooth brushes and perfumery. What if other professions have arisen whose followers are also men of education and scientific learning? Nothing can force into the background the position enjoyed by the really well-equipped medical man, and too much importance must not be attached to the fact that the public appears generally ready to underpay the medical man. The misapprehension of professional aims under which this occurs will disappear and a steady effort should be made to bring this about as soon as possible.

Leaders have been lacking to the cause of medical reform who were ready with practical measures to meet existing conditions. There have always seemed to be two classes within the profession, a class who, through apathy or selfishness, "care for none of these things" and a class who are so acutely alive to certain of the grievances under which the medical profession lies as to be unable to see any compensating advantages or to hope for any amelioration of their plight. Such division of aims and interests has been particularly harmful in the past but recently there have been many signs that a better state of things is approaching, for I disregard those who affect to see in all hospital staffs and public vaccinators the deliberate enemies of the general practitioner. At the same time the absolute necessity that medical men should themselves agree upon what is wanted before raising their voices in any demand is becoming recognised, and as much may be said for the advisability that only such measures of reform should be demanded as are demonstrably for the public good. Moderation in what is sought under the name of medical reform does not imply any half-heartedness in the belief that such reform is required or any abstention from further demands in the future. Certainly, let us look forward to the time when all grievances whatsoever will be removed and all hindrances to a perfect understanding between the public and the medical profession will be swept away. This time will be a time when other professions besides the profession of medicine will be carried on upon ideal terms; when some such perfect unanimity between classes prevails as is usually depicted in the literature of the Utopias. Between this ideal future epoch (when, by the way, the public will need of medical men rather their advice as to prevention than as to cure) and the present day there is room for the free play of evolution, and because for the moment little is asked for it does not follow that there is but little that calls for accomplishment.

Take the one-portal system for example, the arguments for and against which were weighed in the preceding chapter. It has been over and over again insisted that the institution of a one-and-only entrance into the medical profession would be a valuable reform. But at the present moment any movement towards such a reform would be resisted in all probability by the medical corporations, certain of whose functions would thus be superseded. The time will come when the corporations will be recognised by everybody to have finished their work as educational bodies. Already the competition of the provincial universities is pressing them hardly, and whereas the universities are young and will grow in strength and multiply in number there seems no particular motive force upon which the corporations can rely to strengthen their position. As Professor Churton Collins has recently pointed out, a revolution, the nature and extent of which have been very imperfectly apprehended,[2] has during the last 15 or 20 years been profoundly affecting society in this country, especially in that stratum from which medical students are chiefly drawn—the middle or lower middle class. The tastes, the studies, and the aspirations which but a few years ago were peculiar to a small minority are now shared by the multitude. To go back a little further, 50 years ago there were in England and Wales only two Universities discharging the real functions of a university—the two mediæval foundations of Oxford and Cambridge. These two Universities then received annually about 2000 undergraduates. To this total a handful of students at Durham must be added, the foundation of the University of London not being taken into account, for an examining board, however high its standards and however extensive its imperial aspirations, cannot ever be a university. Mark the difference to-day. Each of the thirteenth century Universities welcomes 3000 students as undergraduates—Oxford had 3538 in 1904; the Victoria University has been divided so that Manchester, Liverpool, and Leeds now contain universities of their own; Sheffield will soon be joined to this list; there is a University of Birmingham and one of Wales with three constituent colleges at Aberystwyth, Bangor, and Cardiff; while the University of London has become a genuine university with teaching functions. Scotland, which has always been the quickest of the three divisions of the United Kingdom to see the great value of popular university education, will be forced by competition to do even better than its own good deeds; Ireland presents a problem to those interested in higher education which cannot wait much longer for its solution. At a rough estimate it is probable that where 50 years ago there were 2000 university students working upon the narrowly specialised lines laid down by tradition, there are now some 20,000 students whose education is conducted towards perfecting them for the various higher walks of life.

The significance of all this cannot escape the many learned and able men who are in authority over the medical corporations. They must see that among the most important faculties in the new universities are the faculties of natural science and medicine, and they must be aware that as time goes on, and as a university education comes to form part of the national life of the class whence medical students are drawn, every medical student will go to a university as naturally as he goes to his bath, he will proceed to take a medical degree as inevitably as he has his hair cut, and he will be in no more need of a qualification from a medical corporation than of an Indulgence from a Pope. The corporations will then be seen to have discharged their educational functions, but it is, to say the least, doubtful if that day has yet arrived, while it is pretty certain that the heads of the corporations are not likely to respond cheerfully to an invitation to commit suicide. The one-portal system will have its chance of securing Parliamentary support when its introduction will not damage existing institutions and when those institutions have found under altered conditions an altered scope for their activities. For the corporations will have their functions, even though the unanimous resort of all young men *in statu pupillari* to a university may make the possession of the hall-mark of a corporation unnecessary. There is the great examining function. We have seen how important the careful examining of medical students is, and the disastrous part that is played by the element of chance in the results can only be minimised by the selection of good and competent examiners. The corporations might well provide under a one-portal system all the examiners in medicine, surgery, and obstetrics who would be required by the General Medical Council or the Privy Council. The present position of the Royal College of Surgeons of England and the Royal College of Physicians of London is mainly that of an examining body—I take these Colleges as examples because the holders of the diplomas of their Conjoint Board are so numerous and because the examinations of that Board are so admirably devised and conducted. The Colleges receive a great deal of money from students and spend a great deal of money in examining students. Beyond the joint support of a laboratory, where the excellent work of the Cancer Research Fund is being carried out, and the maintenance and preservation of the Hunterian Museum by the Royal College of Surgeons of England they do not really do much more work that is of living importance and this work could be done if their diploma-granting function ceased. A Member of the Royal College of Surgeons of England is as likely as anyone else on the Medical Register to be sweated by a medical aid association, to be blackmailed by a hysterical patient, or to be browbeaten by a coroner. His corporation does not attempt to take his part in any such professional troubles, but contents itself with accepting his fees and in return examining him and giving him an assay mark. If the corporations became the examining machinery for all medical students under a one-portal system it seems to me they would be doing the same kind of practical work that they are doing now, only in still more important circumstances. In such a scheme the universities would provide the students, and the General Medical Council or the Privy Council, in looking for independent examiners, would naturally turn to the corporations. The examiners would be university graduates belonging, as the examiners now do, to the class that has aspired from the beginning to leadership in the profession. They would be the teachers in the big schools and the honorary staffs of the big hospitals, and they would qualify as examiners by taking the high honour diploma of one of the Colleges. The Royal Colleges would come to consist of the Fellows carrying on the examination work of the country and of those graduates of universities who, intending to belong to the front rank of their science, have qualified themselves to accept examinerships. The income of the Colleges would be less but so would their expenses, and, in my view, their position would be in no way lowered from that which at present they enjoy. They would represent the fine flower of the medical profession—all that is best, most ambitious, and most learned of that profession—and they would be at once recognised as the centres of medical thought. It would be an honour to belong to them.

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[2] The University Review, May, 1905, "The Education of the Citizen."

I do not want to be understood as prophesying exactly what will happen—no claim to such perspicuity is made—nor do I suggest that any great changes will come about immediately. My guesses at the future are so far rough that they concern principally the English Colleges. I am only attempting to show that, although at the present time the Royal Colleges are almost certain to object to any one-portal system as taking away from them their most valuable privilege (the President of the Royal College of Surgeons in Ireland has just taken exactly this line), there is no reason why, as time goes on, and particularly as the numbers of their pass-men drop off, they should not come to regard the one-portal system as actually constituting their safety. There can be no doubt that the competition for the diplomas of the Royal Colleges, especially in England, has already abated, and this shrinkage cannot go on without being felt. A return of the medical students to London in great numbers will make no difference, for it will only be brought about by an arrangement of the curriculum that will offer the London student a fair chance of obtaining a doctorate: an accession of medical students to London will not increase the demand for the diplomas of the Conjoint Board. All the Colleges have past histories of which they may be proud. They have done, and are doing, good work—everyone allows this who knows anything about them, and the line of general abuse that is followed by some ardent reformers will never be followed by the well informed. If their numbers go down—and some believe that the competition of the provincial universities may bring down their numbers very quickly indeed—they may be depended upon not to let themselves die without an effort. If their rank and file drop away they must increase the power and numbers of their honour-men and take any opportunity that offers itself for their important employment. The Fellows of the Royal College of Surgeons of England are just now largely increasing in numbers and with improved medical education this increase may continue, but it may not. At the present moment a man who aspires to a surgical post in many of the more important hospitals in England must possess the Fellowship of the Royal College of Surgeons of England. There are many more large hospitals in England than in Ireland and Scotland put together, and all the young men who hope for the principal surgical appointments must be able to style themselves F.R.C.S. Eng., Scottish and Irish candidates for these posts in England being very generally required to obtain the English Fellowship. The number of ambitious young men has much increased of late, and consequently the number of men who acquire the English Fellowship has increased, but it is not in the least certain that this increase can be counted on for much longer. The moment that the M.Ch. of the universities is recognised, as it is perfectly sure to be, as an honour degree, the hospitals will begin saying in their advertisements that "candidates for the honorary staffs must be Fellows of the Royal College of Surgeons of England *or* Masters in Surgery at one of the recognised universities," when the main *raison d'être* of the Fellowship, under existing conditions, will at once disappear. Confronted with these facts the corporations in all three divisions of the United Kingdom will, I think, be perfectly willing to help on a scheme for the institution of a one-portal system; their desire will be to find a way by which their position would be confirmed as a great and important one under the new *régime*. I believe that if the examining function were given to them everyone would be pleased in time. The function would not be taken away from the universities, for all the examiners would be graduates of universities, M.D.'s as well as F.R.C.P.'s, M.Ch.'s as well as F.R.C.S.'s. The corporations would thus come to consist of the most learned and representative men—young and old—in the medical profession, and, indeed, in an automatic way, would become a sort of Academy of Medicine. Why should they not? Why should not the Royal Colleges in each dominion of the kingdom be the Academy of Medicine for the country?

Now we are in the realms of imagination, doubtless, and yet this piece of evolution seems to me to follow logically and easily upon the delegation to the corporations of the examining function, while it responds undoubtedly to an admitted want. The waste of time, money, and endeavour that is implied in the multiplication of medical societies in London alone is enormous, and this fact is now being recognised by a strong movement towards amalgamation. The scheme that is under the consideration of the Royal Medical and Chirurgical Society, the Medical Society of London, and other associations is certainly a good one. It may be planned to serve the needs of the scientific world for many years to come, but we can none the less conceive it as only preparatory to the formation of a real British Academy of Medicine rising under the joint endeavour of the Royal Colleges and corporations. The Colleges would be the most natural centres in which a learned body—or groups of learned bodies—could hold meetings; nowhere better or more aptly could libraries and museums be housed, and the walls of the Colleges would form the natural background for the portraits of eminent members of the British Academy of Medicine. This would be particularly the case when the examining functions of the Colleges had made the honour diplomas of the Colleges a necessity for all those members of the medical profession who take an academic view of their professional life. This is frankly an anticipation of the future, an attempt to guess to what use, when the street is remodelled, certain splendid old structures might be put so that full value could be given to their dignified past and full use could be got out of them for a utilitarian—and equally dignified—future. A guess it is certainly, but not a wild guess if the propositions are allowed :—(1) that education at a university will soon become the invariable procedure of a medical student; (2) that consequently the corporations will lose their diploma-giving privileges; and (3) that they will be found to possess sufficient vitality to live under the altered conditions.

Imagination may be allowed to range for a moment over the developments that will take place in other divisions of medical practice. Surely sooner or later there will be no need to compare the merits of the Army Medical Service, the Indian Medical Service, and the Naval Medical Service to the detriment of one or the other, but each will form a branch of an Imperial Sanitary Service the functions of which in time of peace will be mainly preventive and the efforts of which in time of war or epidemic will be supplemented by its civilian *confrères*. Of such an Imperial Service a properly organised Colonial Medical Service would form an integral part and every quarter of the world would show a station in which the principles of sanitary science were strictly observed and from which in time of need expert assistance could be received by the community.

Similarly, there will surely be no need in a few years' time to compare the Poor-law service of England with that of Ireland, or the sanitary service of Scotland with that of England. As the public becomes better educated, as it recognises how much depends upon the observance of the laws of public health, we may expect a general consensus of opinion as to the advisability of a Ministry of Public Health the officers of which properly selected for special knowledge in preventive medicine, properly paid, and free from any hampering conditions, may safeguard the health of the country and watch over the interests of the sick poor. The sanitary service of the country ought not to be separated from the Poor-law service. They are one and the same thing, the care of the health of the sick poor implies the supervision of their sanitary environment. And the two services combined into one should be under a Ministry of Public Health, which would also relieve the Local Government Board of its responsibilities in respect of the introduction of disease from abroad and, indeed, all relations with foreign powers as to public health.

As a conclusion of this series of chapters in which an attempt has been made to give a synoptical view of the sociology of medicine, I should like to quote a few lines from one of the late Lord Salisbury's essays, in which he describes the position of the holder of moderate views. He says in an essay on the position of Poland :—

> There are few positions more embarrassing than that of men who hold moderate opinions in regard to questions upon which excitement is running high. They are obnoxious to the partisans whom they have left behind, and to the partisans of whose extravagance they fall short, and are regarded by each side as combining the demerits of an antagonist and a deserter. Each party equally despises the luke-warm zeal and time-serving temper which can only take up half a cause. The pursuer of the golden mean must be content with the intrinsic value of his immediate course, he will win no sympathy and must submit to be cast out as crotchety by every enthusiastic mind.

I feel that many who have the cause of the medical profession at heart will consider my conclusions in respect of reform to be inadequate. I shall be only too glad to learn that any more drastic measures are practicable; my moderation has not come from half-heartedness, but from a belief that the cause of reform is badly served by a perpetual bellowing for what never will be obtained. I have tried to urge the doing only of what can be readily done. But though I have been thus limited in what I have suggested as being immediately necessary for the removal of many of the disabilities of the medical profession, so as to make that profession more valuable to the public, I set no bounds to the possibilities of medicine as a profession in the future. The fact that after much complaining, after the recapitulation of a series of abuses, only a few suggestions for reform follow must not be taken to mean that a perfect condition of things will so be reached. On the contrary, I would have it understood—for I believe it—that the future which medicine has before it is an infinitely great one. The present disorderly state of the profession in the United Kingdom can be set aright in many particulars without any great difficulty; the men who practise under the improved conditions will be able to show a public, growing daily better and better instructed, how valuable to the community properly ordered and properly appreciated medical service may be. From this point advance should be by geometrical progression.

THE END.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 9005 births and 3484 deaths were registered during the week ending July 8th. The annual rate of mortality in these towns, which had been 13·4, 12·9, and 12·7 per 1000 in the three preceding weeks, further declined to 11·6 per 1000 last week. In London the death-rate was 11·2 per 1000, while it averaged 11·8 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 3·9 in Bournemouth, 4·5 in Northampton, 5·0 in Wallasey, 5·8 in Tottenham, 5·9 in East Ham, 6·7 in Cardiff, and 6·8 in Hornsey; the highest rates were 16·0 in Newcastle-on-Tyne, 16·4 in Sunderland, 17·4 in Liverpool and in Bootle, 17·7 in Merthyr Tydfil, 18·3 in Warrington, and 18·5 in Tynemouth. The 3484 deaths in these towns last week included 388 which were referred to the principal infectious diseases, against 355, 348, and 371 in the three preceding weeks; of these 388 deaths, 133 resulted from diarrhœa, 122 from measles, 71 from whooping-cough, 27 from scarlet fever, 23 from diphtheria, and 12 from "fever" (principally enteric), but not any from small-pox. In Hornsey, Brighton, Southampton, Huddersfield, York, Swansea, and 11 other smaller towns no death from any of the principal infectious diseases was registered, while they caused the highest death-rates in Wolverhampton, West Bromwich, St. Helens, Warrington, Salford, Barrow-in-Furness, Sunderland, and Rhondda. The greatest proportional mortality from measles occurred in Willesden, Bristol, Wolverhampton, West Bromwich, Warrington, Barrow-in-Furness, and Sunderland; from whooping-cough in West Ham; and from diarrhœa in Liverpool, St. Helens, Warrington, Rhondda, and Merthyr Tydfil. The mortality from scarlet fever, from diphtheria, and from "fever" showed no marked excess in any of the large towns. No fatal case of small-pox was registered either in London or in any of the 75 other large towns. The number of small-pox patients remaining under treatment in the Metropolitan Asylums Hospitals, which had been seven, six, and four at the end of the three preceding weeks, had risen again to five at the end of last week; two new cases were admitted during the week, against three, one, and one in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital at the end of the week was 2499, against 2356, 2427, and 2473 at the end of the three preceding weeks; 354 new cases were admitted during the week, against 292, 325, and 334 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 189, 144, and 140 in the three preceding weeks, further fell to 90 last week, and were 45 below the number in the corresponding period of last year. The causes of 36, or 1·0 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Bristol, Nottingham, Salford, Bradford, Leeds, Newcastle-on-Tyne, and in 49 other smaller towns; the largest proportions of uncertified deaths were registered in Hanley, Birmingham, Liverpool, Bury, Hull, and Rhondda.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 15·7, 16·1, and 16·5 per 1000 in the three preceding weeks, declined again to 14·7 per 1000 during the week ending July 8th, but was 3·1 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 7·6 in Perth and 8·9 in Leith to 15·7 in Glasgow and 17·1 in Paisley. The 449 deaths in these towns included 26 which were referred to whooping-cough, 14 to measles, 13 to diarrhœa, three to diphtheria, and one to scarlet fever, but not any to small-pox or to "fever." In all 57 deaths resulted from these principal infectious diseases last week, against 74, 60, and 65 in the three preceding weeks. These 57 deaths were equal to an annual rate of 1·7 per 1000, which was 0·4 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 29, 18, and 31 in the three preceding weeks, declined again last week to 26, of which 14 occurred in Glasgow, eight in Edinburgh, and three in Paisley. The deaths from measles, which had been 26, 18, and 17 in the three preceding weeks, further declined to 14 last week, and included nine in Glasgow and four in Edinburgh. The fatal cases of diarrhœa, which had been 15, 15, and 14 in the three preceding weeks, further fell last week to 13, of which six were registered in Glasgow, three in Edinburgh, and three in Aberdeen. The deaths from diphtheria, which had been one, four, and one in the three preceding weeks, rose again to three last week. The deaths referred to diseases of the respiratory organs in these towns, which had been 63, 74, and 68 in the three preceding weeks, further declined last week to 65, and were 23 below the number in the corresponding period of last year. The causes of 22, or more than 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 17·2, 17·9, and 14·9 per 1000 in the three preceding weeks, rose again to 16·9 per 1000 during the week ending July 8th. During the past four weeks the death-rate has averaged 16·7 per 1000, the rates during the same period being 12·1 in London and 15·5 in Edinburgh. The 123 deaths of persons belonging to Dublin registered during the week under notice were 15 in excess of the number in the preceding week and included eight which were referred to the principal infectious diseases, against three, six, and seven in the three preceding weeks; of these, six resulted from diarrhœa and one each from measles and from scarlet fever, but not any from small-pox, diphtheria, whooping-cough, or "fever." These eight deaths were equal to an annual rate of 1·1 per 1000, the death-rates last week from the principal infectious diseases being also 1·1 per 1000 both in London and in Edinburgh. The fatal cases of diarrhœa, which had been two in each of the two preceding weeks, increased last week to six. The 123 deaths in Dublin last week included 30 of children under one year of age and 30 of persons aged 60 years and upwards; the deaths of infants considerably exceeded the number recorded in the preceding week, while those of elderly persons showed a slight excess. One inquest case and one death from violence were registered; and 52, or more than two-fifths, of the deaths occurred in public institutions. The causes of eight, or nearly 7 per cent., of the deaths registered in Dublin last week were not certified.

VITAL STATISTICS OF LONDON DURING JUNE, 1905.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious disease it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·8 per 1000 of the population, estimated at 4,684,794 persons in the middle of the year. In the three preceding months the rates had been 6·0, 5·6, and 6·2 per 1000 respectively. The lowest rates last month were recorded in Kensington, Chelsea, Hampstead, Holborn, Greenwich, and Woolwich; while the highest rates occurred in Hammersmith, Fulham, Shoreditch, Bethnal Green, Stepney, and Poplar. Small-pox was slightly less prevalent than it had been in the preceding month; of the eight cases notified during June two belonged to St. Pancras, two to Bethnal Green, and one each to the City of Westminster, Stoke Newington, Shoreditch, and Greenwich. The Metropolitan Asylums hospitals contained four small-pox patients at the end of last month, against 20, 16, and nine at the end of the three preceding months; the weekly admissions averaged two, against four, four, and two in the three preceding months. The prevalence of scarlet fever was slightly greater than in the preceding month; among the various metropolitan boroughs this disease was proportionally most prevalent in Fulham, Shoreditch, Bethnal Green, Poplar, and Stepney. The number of scarlet fever patients in the Metropolitan Asylums hospitals, which had been 1997, 2152, and 2236 at the end of the three preceding months, had further risen to 2444 at the end of last month; the weekly admissions averaged 301, against 272, 266, and 302 in the three preceding months. Diphtheria was considerably more prevalent during June than in either of the two preceding months; the greatest proportional prevalence of this disease occurred in Hammersmith, Fulham, Stoke Newington, Bethnal Green, Poplar, and Lambeth. The Metropolitan Asylums hospitals contained 715 diphtheria patients at the end of June, against 788, 719, and 684 at the end of the three preceding months; the weekly admissions averaged 111, against 98, 83, and 89 in the three preceding months. The prevalence of enteric fever showed but very little variation from that recorded in the preceding month; among the various metropolitan boroughs this disease was proportionally most prevalent in Kensington, Hammersmith, the City of Westminster, Hackney, Finsbury, and Bethnal Green. The number of enteric fever patients remaining under treatment in the Metropolitan Asylums hospitals at the end of last month was 78, against 68, 65, and 80 at the end of the three preceding months; the weekly admissions averaged 10, against 11, 11, and 14 in the three preceding months. Erysipelas was proportionally most prevalent in Paddington, St. Marylebone, Finsbury, the City of London, Shoreditch, and Deptford. The 28 cases of puerperal fever notified during the month included four in Camberwell, and three each in Hammersmith, Islington, Stepney, and Wandsworth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in public institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ending July 1st the deaths of 4349 persons belonging to London were registered, equal to an annual rate of 12·1 per 1000; in the three preceding months the rates had been 15·5, 15·1, and 14·0 per 1000. The rates last month ranged from 7·0 in Hampstead, 8·4 in Lewisham, 8·7 in the City of London, 9·2 in Deptford, 9·4 in Wandsworth, and 10·0 in Woolwich, to 14·2 in St. Marylebone, 14·3 in Finsbury, 14·4 in Poplar and in Southwark, 15·7 in Shoreditch, and 15·9 in Holborn. The 4349 deaths from all causes in London last month included 443 which were referred to the principal infectious diseases; of these, five resulted from small-pox, 155 from measles, 36 from scarlet fever, 36 from diphtheria, 117 from whooping-cough, 11 from enteric fever, one from ill-defined pyrexia, and 82 from diarrhœa, but not any from typhus fever. No death from any of these diseases was recorded in the City of London; among the metropolitan boroughs they caused the lowest death-rates in Chelsea, Hampstead, City of Westminster, Lambeth, Deptford, Greenwich, and Woolwich; and the highest rates in Paddington, Fulham, Stoke Newington, Hackney, Holborn, Bethnal Green, Poplar, and Battersea. Of the five fatal cases of small-pox three belonged to Lewisham, one to Hackney, and one to Shoreditch. The 155 deaths from measles were 81 below the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Paddington, Fulham, St. Marylebone, Stoke Newington, Hackney, Poplar, and Battersea. The 36 fatal cases of scarlet fever were nine fewer than the average for the corresponding periods of the ten preceding years; the greatest proportional mortality from this disease occurred in Kensington, Islington, Finsbury, Wandsworth, and Camberwell. The 36 deaths from diphtheria showed a decline of 65 from the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JUNE, 1905.

(*Specially compiled for* THE LANCET.)

Cities and Boroughs.	Estimated population in the middle of 1905.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,684,794	8	1397	536	—	94	1	28	376	—	2440	6·8	5	155	36	36	117	—	11	1	82	443	1·2	4349	12·1	91
West Districts.																										
Paddington	147,935	—	28	11	—	1	—	—	17	—	57	5·0	—	13	—	—	6	—	—	—	1	20	1·8	138	12·2	138
Kensington	180,083	—	17	13	—	5	—	—	4	—	39	2·8	—	6	3	—	5	—	1	—	4	19	1·4	169	12·2	93
Hammersmith	119,037	—	36	24	—	8	—	3	12	—	83	9·1	—	3	—	3	5	—	1	—	1	13	1·4	109	11·9	132
Fulham	157,210	—	80	32	—	4	—	—	9	—	125	10·4	—	9	1	—	4	—	1	—	9	24	2·0	157	13·0	99
Chelsea	74,496	—	9	2	—	—	—	—	3	—	14	2·5	—	1	—	—	2	—	—	—	—	3	0·5	61	10·7	99
City of Westminster	175,606	1	39	9	—	5	—	2	18	—	74	5·5	—	3	1	—	2	—	—	—	4	10	0·7	159	11·8	92
North Districts.																										
St. Marylebone	129,453	—	22	12	—	1	—	2	20	—	57	5·7	—	12	—	—	—	—	—	—	1	13	1·3	141	14·2	93
Hampstead	88,142	—	15	4	—	1	—	—	—	—	20	3·0	—	—	—	1	—	—	—	—	—	1	0·1	47	7·0	51
St. Pancras	236,183	2	37	29	—	4	—	2	12	—	86	4·8	—	9	3	1	5	—	—	—	—	18	1·0	240	13·3	61
Islington	342,994	—	116	20	—	7	—	3	18	—	164	6·2	—	3	5	3	15	—	—	—	3	29	1·1	341	13·0	102
Stoke Newington	52,828	1	13	12	—	—	—	—	1	—	27	6·7	—	3	—	1	4	—	—	—	1	9	2·2	47	11·6	73
Hackney	228,479	—	61	34	—	18	1	—	18	—	132	7·5	1	17	1	1	10	—	—	—	8	38	2·2	198	11·3	92
Central Districts.																										
Holborn	56,481	—	7	3	—	1	—	—	3	—	14	3·2	—	2	—	1	3	—	—	—	2	8	1·8	69	15·9	100
Finsbury	98,207	—	30	7	—	5	—	1	12	—	55	7·3	—	1	3	2	2	—	—	—	1	9	1·2	108	14·3	76
City of London	22,425	—	5	—	—	—	—	—	6	—	11	6·4	—	—	—	—	—	—	—	—	—	—	—	15	8·7	111
East Districts.																										
Shoreditch	116,565	1	71	15	—	3	—	2	16	—	108	12·1	1	4	1	1	3	—	1	—	3	14	1·6	140	15·7	103
Bethnal Green	130,401	2	62	22	—	7	—	—	13	—	106	10·6	—	7	1	1	2	—	1	1	5	18	1·8	141	14·1	98
Stepney	305,466	—	125	35	—	6	—	3	34	—	203	8·7	—	10	2	3	5	—	2	—	10	32	1·4	324	13·8	102
Poplar	170,280	—	88	34	—	2	—	—	19	—	143	10·9	—	11	1	4	8	—	—	—	8	32	2·4	188	14·4	108
South Districts.																										
Southwark	203,528	—	60	27	—	2	—	—	19	—	108	6·8	—	4	—	5	4	—	—	—	5	18	1·1	230	14·4	106
Bermondsey	129,006	—	43	16	—	2	—	1	6	—	68	6·9	—	3	1	1	3	—	—	—	2	10	1·0	138	13·9	110
Lambeth	313,045	—	78	76	—	3	—	1	27	—	185	7·7	—	2	1	2	3	—	2	—	6	16	0·7	264	11·0	83
Battersea	177,532	—	57	16	—	2	—	—	9	—	84	6·2	—	18	1	2	8	—	1	—	—	30	2·2	169	12·4	98
Wandsworth	265,392	—	91	29	—	1	—	3	28	—	152	7·5	—	1	5	2	7	—	—	—	1	16	0·8	192	9·4	75
Camberwell	271,240	—	79	9	—	4	—	4	22	—	118	5·7	—	9	5	1	2	—	1	—	2	20	1·0	212	10·2	69
Deptford	114,495	—	41	14	—	1	—	—	16	—	72	8·2	—	—	1	—	2	—	—	—	1	4	0·5	81	9·2	67
Greenwich	103,493	1	22	7	—	1	—	—	4	—	35	4·4	—	2	—	1	—	—	—	—	2	5	0·6	82	10·3	88
Lewisham	144,420	—	36	15	—	—	—	1	5	—	57	5·1	3	—	—	—	6	—	—	—	1	10	0·9	93	8·4	59
Woolwich	125,372	—	29	9	—	—	—	—	4	—	42	4·4	—	2	—	—	1	—	—	—	1	4	0·4	96	10·0	62
Port of London	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

Hammersmith, Stoke Newington, Finsbury, Poplar, and Southwark. The 117 deaths from whooping-cough were 28 below the average number in the corresponding periods of the ten preceding years; this disease showed the greatest proportional mortality in Stoke Newington, Hackney, Holborn, Poplar, and Battersea. The 12 fatal cases of "fever" were only one-half of the corrected average number; two of the deaths belonged to Bethnal Green, two to Stepney, and two to Lambeth. The 82 deaths from diarrhœa were 30 below the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Fulham, Hackney, Holborn, Bethnal Green, Stepney, and Poplar. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was more than 33 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 91 per 1000. The lowest rates of infant mortality were recorded in Hampstead, St. Pancras, Camberwell, Deptford, Lewisham, and Woolwich; and the highest rates in Paddington, Hammersmith, the City of London, Poplar, Southwark, and Bermondsey.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon C. M. Beadnell to the *New Zealand* on completing. Staff Surgeon F. W. Parker to the *Sapphire*, additional, for the *Sapphire II.* Surgeons: A. R. Schofield to the *New Zealand*; C. B. Fairbank to the Gibraltar Hospital and for dockyard and naval extension works.

ROYAL ARMY MEDICAL CORPS.

Captain S. Mason resigns his commission (dated July 12th, 1905). Lieutenant H. St. M. Carter, from the Seconded List, to be Lieutenant (dated July 2nd, 1905).

Lieutenant-Colonel E. Butt is appointed to the recruiting staff in Ireland, vice Colonel J. G. MacNeece, who takes up duty as Principal Medical Officer at Malta on promotion. Major C. R. Kilkelly, C.M.G., is appointed Governor of Osborne House, Isle of Wight, the convalescent home for officers of the Army and Navy.

MILITIA.

Infantry: 3rd Battalion the Dorsetshire Regiment: Surgeon-Lieutenant-Colonel D. Curme retires under the conditions of paragraph 55, Militia Regulations, with permission to retain his rank and to wear the prescribed uniform (dated May 27th, 1905).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major J. P. Massingham to be Surgeon-Lieutenant-Colonel (dated June 27th, 1905).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 2nd Hampshire: Surgeon-Lieutenant P. N. Vellacott resigns his commission (dated July 12th, 1905). 1st Monmouthshire: The undermentioned officer resigns his commission: Surgeon-Lieutenant J. Hurley (dated July 12th, 1905).

Royal Engineers (Volunteers): 1st Devonshire and Somersetshire: Surgeon-Lieutenant E. G. Stocker to be Surgeon-Captain (dated July 12th, 1905).

Rifle: 1st (Renfrewshire) Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Lieutenant C. W. Marshall to be Surgeon-Captain (dated July 12th, 1905).

THE MOTOR VOLUNTEER CORPS.

Charles Buttar to be Surgeon-Lieutenant (dated June 19th, 1905).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

East Surrey Bearer Company: Major J. J. de Z. Marshall is granted the honorary rank of Lieutenant-Colonel (dated June 12th, 1905).

ROYAL ARMY MEDICAL CORPS: EXAMINATION OF MAJORS FOR PROMOTION.

A July Army Order states: For 1906 the special subject for the examination of majors for promotion to lieutenant-colonel, referred to in para. 5 (*a*) and (*b*), App. VIII.B. of the King's Regulations, will be as follows: *Subject* 5 (a)—*Medical history of the more important campaigns.* The medical history of the South African War as described in "Report on the Medical Arrangements in the South African War," by Surgeon-General Sir W. D. Wilson, 1904, Parts I., II., III., and IV., VIII. and XVI.; and appendices referred to therein. *Subject* 5 (b)—A general knowledge of the army medical services of other powers. The medical organisation of the Japanese army as described in the "Handbook of Medical Organisation of Foreign Armies, 1902," or the medical organisation of a foreign army, selected by the candidate, described within similar limits.

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on July 11th, Sir J. N. Dick, K.C.B., R.N., being in the chair, the sum of £80 was distributed among the several applicants.

NATIONAL DEFENCE.

We would call our readers' attention to the debate in the House of Lords on July 10th on the motion of the Earl of Wemyss regarding home defence and especially to the forcible and decisive speech delivered by Earl Roberts on that occasion. Field-Marshal Lord Roberts has the experience and qualifications to entitle him, if any man has, to speak with authority on such subjects as Imperial defence and the needs of the army. He emphatically declared that the lessons of the war in South Africa had been forgotten; that our armed forces were now as unfitted and unprepared for war as they were then; and that the public was indifferent to the army and regardless of the fact that Britain was no longer a kingdom but an empire. We may add that there are, we fear, many persons in this country who are endowed with so little patriotic feeling and sense of national responsibility that they would be roused, but at the same time benefited, by reading an article in the *National Review* for June last entitled "Some Candid Impressions of England by a German Resident." While we do not by any means agree with the German resident in all that he says, we have, nevertheless, with similar candour to his, to confess that his contribution contains too much truth to be pleasant. Commenting on the speech of Earl Roberts, Lord Raglan, President of the National Service League, in a letter to us, says: "Let us remember that no Government can be expected officially to support a noble appeal for national duty such as that made by Lord Roberts unless the people themselves show that they are ready to respond. And there is no surer way of helping the great soldier who has rendered such signal services to the country than by joining the National Service League and thus forming that body of public opinion to which a patriot statesman can appeal."

OUR VOLUNTEER FORCES AND THE PHYSICAL STANDARD.

Things are not going well with the new army reform proposals. The War Office has, under a circular issued last month and amended under date July 11th, called for reports to be sent in by Oct. 1st as to the physical standard of the Volunteers. The War Office instructions to the medical officers of this force are to the effect that they are to make a strict examination into the physique of the men. The circular in question has apparently been issued because the Government professes to have decided that the Volunteers are not in reality wanted for home defence and that, taken as a whole, they are unfit or useless for oversea warfare. The immediate object in view is to ascertain the number of Volunteers on the strength fit for service abroad. This has opened up a very big and contentious question which will be certain to provoke a good deal of discussion. In the meantime the carrying out of the War Office instructions is a matter of some difficulty and entails much expenditure of time and labour if the medical inspections are to be carried out properly. Civilian practitioners, who are Volunteer medical officers for war purposes, naturally object to neglect their civilian practice in order to inspect several hundred men for nothing. Mr. Arnold-Forster will, no doubt, be able to throw some further light upon the intentions of the Government in regard to the Volunteers in the promised debate thereon, but he stated in the House on July 12th that it was not proposed to grant any special allowance to defray the cost of medical examination, although the matter was receiving consideration.

THE RUSSIAN RED CROSS SOCIETY.

The executive committee of the Russian Red Cros

Society has asked the Mayor of Moscow to send a representative to the committee formed in the society with the object of changing the statutes of the Russian Red Cross Society in order that its operations in peace time may be on the same lines as now—in time of war—so as to keep touch with all social bodies permanently.

THE WAR IN THE FAR EAST.

If one of the most elementary principles in war consists in learning all that can be possibly found out about the intentions of the enemy while studiously concealing all knowledge of your own from him, then the Japanese have shown themselves past masters in that art. What has been going on behind the impenetrable veil of their apparent inactivity of late we do not know, but there has been a relatively long lull in the military operations in Manchuria. This lull is very suggestive of the belief that some comprehensive and sweeping movement against the Russians on the part of the Japanese armies is being projected and will soon take place.

A telegram from Godsiadan (Manchuria) announces the death of General Timofieff, inspector of hospitals, who was wounded by a bayonet during the battle of Mukden.

Correspondence.

"Audi alteram partem."

SOME COMPLICATIONS OCCURRING IN PULMONARY TUBERCULOSIS, WITH REFERENCE TO PROGNOSIS AND TREATMENT.

To the Editors of THE LANCET.

SIRS,—There has been much discussion in the medical journals during the past few months as to whether sanatorium treatment is, or is not, worth while. This has led me to try, by careful study of the records of cases treated at Woodburn Sanatorium, Edinburgh, during four years (1899 to 1903), and by consideration of their after-history, to ascertain the causes of failure and the reasons for success. It is evident that the question can never be settled by giving definite statistics of so many "cured" per cent., for the numbers (if correct at the moment) would require readjustment in six months' time. All patients for years after their period of sanatorium treatment must be classed as "partially restored," but at the same time none of them are stationary in that class. The term "holding their own" too often means "losing ground." They are either gradually passing into the class of "failure, chronic invalidism, and fatal result," or they are slowly and surely progressing towards "perfect health," the term of "perfect health" meaning that the invading bacilli are dead or eliminated and that the patient is free from the danger of a possible relapse. To be sure that this is so implies more than to know that all signs of active disease have disappeared from the lungs. It implies more, even, than to know that the digestive organs are perfectly performing their functions and that the nervous and muscular systems have fully recovered their normal tone. These conditions always precede perfect cure, they are of value as indicating that cure is in good progress, but they do not, individually or collectively, give a guarantee that danger of a relapse is non-existent.

In considering the class of cases in which the treatment is a failure one must remember that in many instances it is found that the actual amount of invasion of the lungs at the time of admission gives small hope of any possibility of cure; in others, the general nutrition of the body is so reduced by continuous toxic poisoning, with consequent widespread degeneration, that it becomes impossible to restore nutrition and the specific resistance to the disease. As a result of these conditions various untoward symptoms have arisen, often simply the exaggeration of the ordinary symptoms of any ordinary case; or else complications have set in which are due to the involvement of other organs by spread of the infection from the primary disease in the lungs. In such cases the cure may not be impossible, but it will probably be long delayed. It is a recognised fact that an early case of pulmonary tuberculosis with no complications is comparatively easy to "cure." When there is merely slight consolidation in one or both lungs, with any of the classical attendant symptoms of cough, anorexia, emaciation, weak circulation, &c., probably the functional disturbance will be overcome by open-air methods in the course of a few months. In such a case the organic lesion remains for longer time, but it is inactive and is undergoing a slow process of elimination.

The symptoms which cause difficulty and delay in the restoration of the patient to complete health are all of them probably due to *the results of slow* and continuous toxic poisoning. By the action of this poison the tissues, particularly the muscles, are deprived of part of their nitrogenous constituents, becoming more or less devitalised and unable to perform their normal functions. A vicious circle is set up and the complications, which were only functional to begin with, become organic, with definite histological changes and alteration of structure. Dyspepsia, for instance, is nearly always present at the beginning of a tuberculous illness; when functional it vanishes after a few days of rest, fresh air, and easily digestible food; when it persists, *forming a serious obstacle to the assimilation of food* and the nourishment of the body, it should no longer be considered as functional but as an organic complication. It *then exists as chronic dyspepsia, which is evidenced by a* flabby, coated tongue and by a more or less dilated stomach. It is often associated with obstinate constipation. Poisoning of the nervous system is manifested by insomnia or by various hysterical symptoms which disappear as the general strength of the body is restored. Poisoning, with consequent wasting, of the muscular system is always marked and is widespread in its effects. It accounts partly for the languor and lassitude which are often the initial symptoms of the disease observed by the patient himself. It affects the muscular walls of the stomach and intestines, causing weak and irregular contraction, which in its turn gives rise to intractable dyspepsia and constipation. More important than all, it affects the muscular tissue of the heart and thus, if unchecked in its progress, it strikes sooner or later at the very life of the patient.

The knowledge that so many untoward symptoms are traceable to wasting of the nitrogenous constituents of the tissues gives the physician a sure basis whereon to rest a *successful treatment*, and a *therapeutic agent* of great value is ready to hand for its accomplishment in the administration of raw meat. Open-air treatment, *per se*, cannot be considered as an unfailing cure for pulmonary tuberculosis, but that it is much more effective when combined with raw meat treatment may be easily verified by trial. To obtain the desired effect the treatment must be carried out thoroughly. It cannot give good results if it is tried for a few days or weeks and then dropped. Success comes to those who can steadily maintain the treatment until the end is attained and the cure is completed. The old adage that "as we sow, so shall we reap," is true in this as in every other phase of life. Therefore we find that active tuberculous disease cannot be eradicated unless it be vigorously combated. Further, we find that in ratio as the application of the treatment is lax so will the recovery be slow, and in proportion as the application is thorough so will the improvement it brings be rendered more certain.

In the hope that these few observations will give fresh encouragement to some who think that the permanent results of sanatorium treatment have not fulfilled the promise of early days,—I am, Sirs, yours faithfully,

ISABELLA MEARS, L.R.C.P. Irel.,
Medical Superintendent, Woodburn Sanatorium,
Edinburgh.

July 3rd, 1905.

MEDICAL BARRISTERS.

To the Editors of THE LANCET.

SIRS,—In your last number you record the fact of five registered medical men being "called to the Bar" on July 5th. As it would be of great professional interest to secure a complete list of all "medical barristers" I have already succeeded in compiling the names of some six score. It is, of course, very much more common for medical men to become lawyers than *vice versâ*, but there are several examples of the latter procedure. Further I have not yet met with the name of a "medical solicitor." Should any of your readers be able to add to my list from the records either of the living or of the dead I should be extremely grateful.

I am, Sirs, yours faithfully,
STANLEY B. ATKINSON,
Honorary Secretary, Medico-Legal Society.
22, Albemarle-street, W., July 10th, 1905.

LEISHMAN-DONOVAN DISEASE.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of June 3rd, p. 1484, there appears an article by Captain Leonard Rogers, I.M.S., on the Conditions affecting the Development of Flagellated Organisms from Leishman Bodies and their Bearing on the Probable Mode of Infection. The writer details the results of experiments on the behaviour of the Leishman-Donovan bodies in various media such as sterile and distilled water, degrees of tonicity in salt solutions, and under anaerobic conditions and those of hyper-oxygenation. These results are negative and, as he says, prove nothing. One observation he made, however, may turn out to be of importance in pointing to the channel of infection in man. He himself and others also have shown that blood diluted with water, to which sodium citrate has been added to prevent coagulation, shows after incubation in the cold that there is an increase in the number of, and alteration in the form of, these bodies, provided, of course, that they were present in the original blood. Captain Rogers now shows that by acidulating this citrated blood better and more luxurious growth is obtained and a larger number of flagellate forms appear than in citrated blood of neutral or alkaline reaction kept under similar conditions.

Now this is an interesting, and is very likely to prove to be an important, fact, but when this writer proceeds to build up on this and some subsidiary facts, to be mentioned hereafter, that on this account the disease is probably transmitted by a blood-sucking insect, I think it is perhaps rather difficult to follow him. Speaking of the rapid development of the organism in acid media, he says: "This striking fact strongly indicates the acid medium to be the optimum for the flagellation of the parasite and also points to the acid-containing contents of the stomachs of some blood-sucking insects as the place in which the parasite undergoes the extra-corporeal stage of its existence."

It is true that there is a strong precedent already established for supposing tropical diseases like this to be spread by the agency of blood-sucking insects. In the case of disease caused by malarial organisms, by piroplasma, by trypanosomes, by proteosoma and halteridia, blood-sucking flies or bugs have proved to be connected causally. It is natural, therefore, I say, that this agency should be suspected in the case of kala-azar and tropical splenomegaly, and this, indeed, may well turn out to be the case, but what I submit is that at present there is little warrant for believing this to be the case and other paths of transmission appear at least equally probable. Captain Rogers and other observers of proved capacity have directed their attention to such a possibility and the bed bug has from the beginning been suspected. The experiments directed to this end have, so far as I know, been negative and in the paper under review Captain Rogers fails to find any suggestive forms in the bodies of bugs fed on sufferers from kala-azar. In one experiment he mixed the blood from the splenic puncture containing the "bodies" with the stomach contents of recently-fed bugs but he found no development of the organisms, and all the conclusions which he is able to draw are the indefinite ones that "the experiments at least show that the conditions are not inimical to the continued life of the parasite, but that is all that can be said at the present time."

The diseases above enumerated, where transmission by insects is proved, are much more of the nature of primary diseases of the blood than Leishman-Donovan disease is. In all these conditions the parasites are found regularly and constantly in the blood and peripheral vessels but this is not so in kala-azar and its congeners. The Leishman-Donovan body swarms in the deep viscera, in the bone marrow, and is also found in some visceral blood-vessels and very markedly in the surfaces of ulcer of the intestinal tract and of the skin, but it is not found in the blood except occasionally as a late terminal infection and then apparently in the white corpuscles, a phenomenon rather suggesting phagocytosis than parasitism. If it is to be carried in its extra-corporeal stages by blood-sucking insects the infection must exist in the peripheral blood, either in an ultra-microscopic form, in which case it finds a probable parallel in yellow fever, or the parasite must appear in the blood-stream under certain unknown conditions in the life of the host (like filaria nocturna). There is no reason, however, to have recourse to either of these propositions without more proof. In this connexion I may say that although the parasite is readily found in the ulcers of the skin, yet I believe that neither bugs, fleas, nor mosquitos ever bite ulcerated surfaces or even inflamed parts. If the parasite infects the otherwise healthy subcutaneous tissues it might find its way into an insect during biting, but the presence of the body has not been demonstrated in healthy subcutaneous tissue. It has been proved, however, that the parasite develops in water and better in acidulated water, and from this, taken in conjunction with the fact that practically in all cases of tropical splenomegaly a discharge of parasites takes place in abundance from the ulcerated large intestines, it is not a very bold step to assume, or at least to suggest, that the intestinal tract is the natural source of infection. The flagella which form are organs of locomotion and not of penetration and suggest a plentiful fluid medium rather than the more viscid stomach contents of insects. Most flagellate bodies which exist as such in the blood lose their motility when taken into the stomach of an intermediate host; at any rate, I have proved this to my own satisfaction in the case of trypanosomes in the blood of the fresh-water tortoise and their subsequent behaviour in the stomach of the leech.

Drawing analogies between diseases of different types is unsafe but it is noteworthy that cholera, enteric fever, and dysentery, all associated with ulceration or denudation of the intestine caused by their respective specific germs, are all (at any rate the first two) transmitted by fæcal infection of water and so back by a direct path to the alimentary canal of man. If the growth of the bodies in acid fluids suggests the acid stomach contents of bugs, why should it not equally suggest the acid stomach contents of man or of many other animals as the natural goal for the further growth of the organism? Splenic enlargement is one of the most marked characteristics of the disease but that organ is in as close physiological connexion with the alimentary system as it is with the blood-forming system. Witness the almost constant infection of the spleen by the Eberth bacillus in cases of enteric fever.

One other point Captain Rogers adduces in favour of his bug transmitting theory, and that is by his observations in Assam on kala-azar, which tend to show that that disease is a house infection and, furthermore, that it was transmitted to some Europeans by their relations with native women suffering from the disease. But transmission by fæcal soiling of clothes, floors, or the dust of compounds or of the water-supply would be almost equally favoured by such intercourse, and these persons ran the risk of taking certain other diseases which result from propinquity and are certainly not transmitted by insect agency.

To sum up the evidence *pro* and *con.* for transmission by blood or water agency:—1. Leishman-Donovan disease is not a blood disease properly speaking, for the organism is not found under ordinary conditions in the peripheral stream. It is a tissue infection. 2. The parasites concerned have never, to my knowledge, been found in the bodies of bugs, mosquitoes, or other blood-sucking insects, though much attention has been directed to this point. 3. There is practically in all cases a large discharge of infective material constantly taking place from the ulcerated intestine and in many cases also from the surfaces of ulcers on the skin or in the mouth, by all of which paths (knowing the habits of the native of India) water infection is peculiarly favoured. 4. Bugs are ubiquitous in India. The disease, however, is commonest in the swampy water-logged countries such as Bengal, Assam, and Madras, and practically unknown in the drier countries of Bombay, the high plateau of Central India, and in the Punjab.

In conclusion, then, I submit that what scanty evidence there is goes rather to point to the transmission of disease associated with the names of Leishman and Donovan by water carriage than by the instrumentality of insects.

I am, Sirs, yours faithfully,
PERCIVAL MACKIE, F.R.C.S. Eng.,
Lieutenant, I.M.S.
Goona, Central India, June 22nd, 1905.

THE MEANING OF "CASUALTY" PATIENTS.

To the Editors of The Lancet.

Sirs,—In Table I. of the excellent "Hospital Sunday Fund" Supplement to your issue of June 17th there are some (apparent) anomalies in the last column. Thus Guy's, with only *two-thirds* of the number of out-patients, shows *four times* as many "accidents and emergencies" as the London. Again, the London Temperance Hospital, with the same number of out-patients as Poplar, has only *one-half* the number of "accidents," &c. And the Royal Free, with a smaller number of out-patients than the Metropolitan, shows nearly *three times* as many "accidents," &c. If this column is meant to show cases treated in the casualty rooms the above figures are of great interest as raising a doubt whether, in some institutions, "casualty" cases are *confined* to "accidents and emergencies" alone.

I am, Sirs, yours faithfully,

July 7th, 1905. G. F. S.

THE CHICAGO STOCKYARDS.

PROSECUTION OF THE BEEF TRUST BY THE UNITED STATES GOVERNMENT.

(From our Special Sanitary Commissioner.)

It would seem, judging by the scant news which the telegraph agencies provide, that the Government of the United States of America is really determined to fight the Beef Trust. This is not only intensely interesting and important from the economic point of view but it also affects the public health. Cheap, clean, wholesome food is a primary necessity. An inquiry was made by the National Department of Commerce and Labour and for more than two years various small prosecutions were instituted in the civil courts. The last thing has been the inquiry held by the Federal Grand Jury. The sittings of this jury lasted three months and more than 100 witnesses were heard. The result is that 18 of the leading Chicago stockyard and packing firms will be indicted on various charges, including "combination in restraint of trade, conspiring to monopolise trade, and illegally granting and receiving rebates." As most of the transactions have been done through the telephone it is difficult to get evidence. Yet it is a matter of common belief that what has been described as "a voice on the telephone" fixes the price of nearly 90 per cent. of the cattle sold for slaughtering and also regulates the price of fruit and other articles of diet. By abolishing competitive buying the price of the animals purchased by the slaughterers is kept down. By abolishing competition in the sale of meat its price is maintained at an unnecessarily high figure. If this sort of combination is allowed to continue the Beef Trust, which is now also dealing in corn, or some other similar combine, will control the price of every loaf of bread. On one side the farmer and the cattle breeder will be at its mercy and on the other side the public will be forced to pay for food any price which the trust chooses to charge.

It is not necessary to insist on the dangers to public health likely to arise from such a monopoly. It is obvious from the descriptions given of the Chicago stockyards that the Beef Trust is not to be relied upon in matters of sanitation.[1] Mr. Ogden Armour is reported to have made some sort of reply to these criticisms but this reply has never reached The Lancet Offices. The Chicago correspondent of the *Daily Mail* stated at the time when The Lancet reports reached America that Mr. Armour had said that "The Lancet article displayed woeful ignorance of packing-houses and did not offer any practical suggestion for the improvement of their condition." As Mr. Armour is likely to have read the articles in The Lancet it is very improbable that he ever made any such remark. Of course, The Lancet does not profess to be an authority on the technique of the packing-house business except in so far as the interests of public health are concerned. For the sake of the health of the 50,000 to 60,000 workpeople employed in the Chicago stockyards, for the cause of humanity in dealing with the cattle about to be killed, on behalf of cleanliness, and for the securing, and the preservation of, the purity of the meat about to be exported to all parts of the world, many improvements were suggested. At the commencement of the series of articles in question this fundamental proposal is made:—

> In Great Britain and all over Europe the feeling gains ground that private slaughter-houses should be abolished and model public abattoirs instituted in their stead, either by the State or by the municipality.

Then it is pointed out that had this been done at Chicago, even at the low rate of charges made at the Berlin municipal abattoir, the city of Chicago would now be in receipt of an annual income of about £1,000,000. But the article continues in the following words:—

> It will scarcely be believed, but it is nevertheless a fact, that at Chicago not only is there no municipal abattoir but there are no private abattoirs in the technical sense of the term. It is true that millions of animals are slaughtered annually but they are not slaughtered in slaughter-houses. For many hours I wandered about the stockyards and I saw many animals killed but nowhere could I discover the smallest trace of a slaughter-house. The animals were killed not in abattoirs but in mills or factories—huge, hideous, box-shaped buildings five and six storeys high.

Then reproductions of photographs were published showing some of these factories and showing also that there is plenty of vacant ground in the immediate neighbourhood where the public authorities could build proper public slaughter-houses. So the first and fundamental improvement suggested was that, for the killing of animals, slaughter-houses should be constructed. These should be public slaughter-houses built according to the sanitary and humane principles established by a federal law and controlled by federal inspectors. There should be a proper bacteriological laboratory and quarantine station, as at Berlin, with convenient and safe arrangements for the railway traffic, the landing of cattle, and disinfection of cattle vans, as at the Prussian State railway station of the Berlin municipal slaughter-house. Then there should be a destructor for the carcasses of diseased animals as at the Hamburg municipal slaughter-house, model stables as at Anderlicht near Brussels, and model rules for the conveyance of meat to the retail shops as at Brussels. These are a few of the improvements that were suggested, not as fanciful hygienic ideals, but as reforms which have been realised in practice and in each case it was stated where they might be seen in working order.

It would seem that Mr. Armour is either very badly served or very badly informed, for to pretend in the face of this that no improvements were suggested is preposterous. But worse than this, here in London, shortly after the appearance of the articles in The Lancet, at the chemical exhibition recently held at Covent Garden Theatre the agents of Mr. Armour exhibited the proof of the correctness of the statements made. They displayed at their stall a gigantic photograph of the Chicago stockyards and thus every visitor to the exhibition was able to see for himself that there are no slaughter-houses at the Chicago stockyards. Every visitor could see that such buildings as exist at the Chicago stockyards would be condemned in any country in the world where any law exists defining what a slaughter-house should be. The audacity of displaying such a photograph in London, where there are at least a few persons who know something about the subject, is a proof either of the most profound ignorance or of cynical indifference to the opinion of all who are capable of judging in such a matter.

Consequently if, as there is good reason to believe, the Government of the United States of America has come to the conclusion that the Beef Trust is a danger to the country from the economic point of view this is a good opportunity to urge that it also imperils the public from the health point of view. The Supreme Court of the United States has approved the decision of lower courts condemning one of the leading firms of packers, Messrs. Swift and Co., for conspiring illegally to fix prices; still this abuse continues. It seems as if convictions at law have little or no effect. Perhaps a Public Health Law abolishing private slaughter-houses would be more efficacious. In any case, the Government is as justified in defending the public health as the public purse and this seems the propitious moment for pressing forward both questions.

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[1] The Lancet, Jan. 7th, 14th, 21st, and 28th, 1905.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

University of Birmingham.

AT a meeting of the Council of the University of Birmingham held on July 5th, the Vice-Chancellor presiding, Professor R. Saundby, M.Sc., M.D., LL.D., F.R.C.P., was appointed the representative of the University on the General Council of Medical Education and Registration of the United Kingdom. Professor Saundby was also appointed a delegate to represent the medical faculty of the University at the International Congress of Medicine to be held in Lisbon in 1906. Sir Archibald Geikie, LL.D., F.R.S., has accepted the invitation of the Council to deliver the Huxley lecture in 1906. Dr. C. E. Purslow has been appointed Ingleby lecturer for the year 1906. Dr. A. Stanley Barnes has been appointed examiner for the Russell Memorial prize for the current year.

The New University Buildings.

The new University buildings are rapidly rising and an official visit was recently paid to them by the members of the court of governors and of the city council. They comprise a large central hall and three blocks devoted to engineering, metallurgy, and mining. The hall, in which degree congregations, other university functions, and examinations will be held, is possessed of considerable architectural charm; it has a length of 170 feet and a height of 77 feet. It is expected to be ready for use in about 18 months' time. In the construction of the three blocks the end which has been constantly kept in view has been to combine an adequate amount of practice with a sound scientific training. It is maintained that in consequence the period of apprenticeship may be reduced. The buildings include a power station which will supply the University with all the electricity required for lighting and for power purposes; a boiler house containing locomotive boilers, gas engines, and marine steam engines; an iron foundry and forge, with smith's hearths, anvils, tools, cupola, patterns, and moulds for casting; a pattern-making shop and a drawing office measuring 100 feet by 50 feet which is described by experts as the finest in Europe. The metallurgical department includes foundries for smelting steel and brass; a room for melting ores by electricity and furnaces for dealing with the ores of gold, silver, copper and lead; a chlorination barrel for the treatment of complex gold ores; and a cyaniding plant for demonstrating South African and similar metallurgical practice. A machine shop is provided for cutting up metals for analysis and for crushing ores preparatory to assay work as well as an experiment room in which there are shortly to be constructed wind furnaces and gas muffles. Special rooms are provided for the measurement of high temperatures, for the microscopical examination of metals, and for electro-metallurgy, including electro-plating. The work in the metallurgical department is of a nature that may require the attention of students by night as well as day. In connexion with the mining department an experimental coal mine has been constructed. It is 12 feet below the surface and the workings extend in all directions for something like three quarters of an acre, the "roads" on different levels being on a scale roughly about one-third of the actual dimensions. In it practical instruction will be given in underground surveying and levelling and in connecting surface and underground surveys. Mine ventilation, timbering, and the different systems of haulage will all be studied on the spot. The scheme of instruction will include both coal mining and metalliferous mining in view of the fact that many students come from India and the colonies. Some idea of the size of the buildings and of the nature of their equipment will be gathered from the fact that their estimated cost is £450,000.

The New Dental Hospital.

The new Dental Hospital was opened a week ago by Sir Oliver Lodge (principal of the University). He was accompanied by the Lord Mayor and Lady Mayoress, a distinguished company of medical men, members of the city council, and representatives of dental hospitals in London, Manchester, Liverpool, and Newcastle-on-Tyne. The cost of the building is estimated at £8500 and the equipment at a further £1500. Towards this, £8500 have been promised. The new building has a pleasing frontage of red brick with stone dressing. It consists of four storeys and special attention has been paid to the provision of the greatest possible amount of light. It is built on a site which slopes in such a way that an excellent north and north-east light is secured which cannot be interfered with by any other buildings. On the ground floor there are a general waiting hall and accommodation for the staff, also class room, students' room, and museum. On the first floor there are rooms for operations, with and without anæsthetics, also a lecture hall. There are separate recovery rooms for male and female patients. On the second floor there are filling and saving rooms, specially lighted and well equipped with operating chairs. There is accommodation for 50 chairs. The top floor possesses an up-to-date mechanical department and workroom for making artificial teeth and crowns. In a word, everything which is found in the best private dental surgeries is provided at the new hospital.

Is Birmingham to have a Natural History Museum?

In view of the fact that the council is at present deliberating how to allocate certain land in the neighbourhood of the municipal buildings the above question has been again asked and considerable correspondence has taken place in the press. Dr. Bridge, professor of zoology, addressed a long letter to the *Daily Post* urging the pressing need for such an institution. He emphasised the ethical no less than the educational value of nature study, he spoke of the means which it afforded for cultivating habits of observation and inference, and evidently knowing that members of city councils are apt to take a too utilitarian view of such matters he did not neglect to point out that designers and artisans might find much that would be suggestive to them in their work from a contemplation of animal and plant forms. It is greatly to be desired that the present movement may be successful. It is well known that there are many very valuable private collections in the city and it may be permissible to hope that in the course of time they will find their way to such a museum.

The Charity Organisation Conference.

Representatives of charity organisation and relief societies throughout the country held a few days ago a conference in Birmingham. The subjects discussed included the care of the feeble-minded, emigration, apprenticeship, health visitors under the town council, and coöperation with the clergy and ministers of religion. The general feeling of the conference was that much of the unskilled labour of to-day was due to the abolition of the apprenticeship system. The discussion on health visitors was opened by the medical officer of health who gave a most favourable report on their work. He asserted that hundreds of houses were kept in a cleaner and more wholesome condition as a result of the work of these visitors and that many hundreds of mothers were making an effort to feed their infants in a better manner and with more wholesome food. Beginning with four health visitors there are now 13 in Birmingham.

Re afforestation in the Midlands.

Considerable progress is being made by the Midland Re-afforestation Association in its admirable endeavour to restore the natural beauty to lands devastated by mining operations. 5000 trees were planted on pit mounds near Wednesbury last year and 42 acres of pit-bank near the isolation hospital at Moxley have been handed over to the association. The Walsall branch of the association lately visited several sites where tree planting on pit mounds had taken place in the past. Reeds Wood Park, now a beautiful sylvan retreat containing thousands of large well-grown trees with open spaces from which crops of hay are taken annually, was once a desolate series of spoil banks. Horsefield Gorse Wood, now a thicket of conifers and other trees, mingled with wild roses and brambles, was planted some 25 years ago on levelled pit-banks of which not the slightest indication now remains.

Health of Birmingham and District.

The case of small-pox to which I referred in my last letter, and which was only discovered after the patient had suffered from the disease for some time, has been accountable for eight other cases and there are now 14 patients under treatment at the isolation hospital. Fortunately, the disease is of a mild type. An epidemic of measles has broken out at Wolverhampton and some hundreds of children are affected. 11 schools have been closed and the authorities are now discussing the question of closing all the schools. The epidemic at Dudley seems to be declining, but not before it has claimed 74 deaths.

July 11th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Council of the Royal College of Surgeons of England.

AT a meeting of the Manchester and District Association of the Fellows of the Royal College of Surgeons of England held on July 8th the following propositions were passed:—

> That it is desirable that Manchester be represented on the Council of the Royal College of Surgeons. That Mr. G. A. Wright be requested to stand as a candidate for the next election.

Mr. Wright consented to stand and a subcommittee was formed to further his election.

Small-pox at Todmorden.

In THE LANCET of July 1st it was stated that a Todmorden tradesman threatened an action because his daughter had been taken to hospital as a small-pox patient when, as he contended, she had only got chicken-pox. Unfortunately for him and his family his contention was not valid, for now he himself, his wife, and another daughter have developed small-pox and have all been removed to the hospital.

The Langho Inebriate Reformatory.

Complaints have been made from time to time of the great cost of the Langho Reformatory and the small number comparatively among whom the cost is distributed. It is stated that now, however, more careful classification is being adopted, and the work of reforming the inebriates is said to be "full of hope. The heaviest task has been to maintain peace between the women, their tempers at times being quite uncontrollable and almost amounting to madness." At the annual meeting of the friends of the Fallowfield Retreat the relative cost was stated to be much below that at Langho, and nothing so outrageous in the behaviour of the women was mentioned.

A Holiday in an Isolation Hospital.

At Wigton an unusual arrangement is being made for the holidays of the workhouse children. They are to spend them at the rural district council's isolation hospital, which is situated in a wooded glen. This does not seem an ideal scheme till we are reassured by the statement that "it has not yet been used for the purpose for which it was built."

Health of the Port of Manchester.

The eighth annual report of Dr. A. M. N. Pringle, medical officer of health to the Manchester port sanitary authority, tells of more work done than in any previous year since the authority was established and of the absence of serious sickness. The actual number of cases, 159, is the highest, but "it is merely the inevitable resultant of the expansion of the trade of the port." The number of vessels steadily increases year by year and the number of seamen fairly equally with the number of vessels. "As each seaman may be considered as a potential case of sickness," it follows that the actual number of cases of sickness or injury must be on the increase. And "as the total amount of sickness increases the tendency to increase in any particular form of disease should also be in evidence. It thus arises that the danger of the importation of forms of infectious disease is steadily advancing." However, there have only been eight cases of enteric fever and one case of "supposed" scarlet fever. There were 29 accidents, including seven cases of drowning. 2621 vessels were inspected. During the month of June 224 vessels of all kinds were inspected in the port, 119 being found to have defective and insanitary conditions. Of these the large majority—109—were British and the rest were foreign.

July 12th.

BRISTOL ROYAL INFIRMARY.—The carnival which was held at the Zoological Gardens, Clifton, during the last week in June with the object of raising £15,000 to wipe off the existing debt on the Bristol Royal Infirmary has been most successful. It yielded a profit of £7500 and Sir George White, Bart., has given a similar sum, so that the infirmary is now free from debt.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Institute of Tropical Research: Generosity of Sir Alfred Jones, K.C.M.G.

Sir Alfred L. Jones (the chairman of the Liverpool School of Tropical Medicine) entertained Lord Mountmorres and a number of gentlemen at a dinner at the Palatine Club on July 3rd to inaugurate a new movement for the encouragement of tropical research in Liverpool, under the title of "The Liverpool Institute of Tropical Research." Tropical cultivation of plants, trees, and crops, together with stock raising, come within the purview of the institute. Under animal products will be embraced scientific information regarding meat, preserved food, honey, fish, &c. The vegetable foodstuffs department will include rice, maize, millet, and other tropical cereals. The draft constitution of the institute shows that the general direction of affairs will be vested in an executive committee composed of men of distinction connected with Liverpool, its university, and its trade. In all that concerns the scientific work of the institute the director, Lord Mountmorres, will be advised by a professional board, composed of the men of science who will direct the work of the various sections into which the institute is to be divided. The departments will be seven, as follows: Statistics and geography, economic botany, economic zoology, economic chemistry, economic geology, technics, and ethnology and native languages. Sir Alfred Jones expressed the opinion that the movement would succeed like the Tropical School of Medicine. He promised to contribute £1000 a year for four years and said he was sure that further assistance would be forthcoming. It was the dawn of a great movement, one which the Germans and the Belgians had set working long ago. The commercial community now possessed in Liverpool a modern university which was willing to help in every way to build up the prosperity of the city and he was delighted to see present so many of the University professors. They had already been fortunate enough to obtain the services of Lord Mountmorres who would be appointed the director of the institute. His lordship had already drawn up a practical scheme and given a little time he had no doubt the scheme would bear fruit in a manner that few now realised. Our tropical possessions were scarcely probed into. It would be the endeavour of the new school of research to inquire in every way into the natural resources of our tropical possessions. In Lord Mountmorres they had an observer who had made himself familiar with those possessions, who had furnished reports of the greatest value, and he felt sure that with such a man at its head the institute would have a brilliant future. Lord Mountmorres, in his reply, pointed out how a want of scientific knowledge had kept back our progress in the rubber industries. Reference had been made to the importance of applying science to the everyday needs of the community. Applied science had a place in the universities and it was the duty of the universities to come forward and to demonstrate their utility. In Liverpool the prominence of a knowledge of the tropics was evident and he felt certain that the movement would have the support of the community. Liverpool should have a bureau of information. It was not right that we should be continually referring questions relating to drugs, timbers, and rubbers to the Continent, Liverpool should itself possess all it required in that direction. Professor Herdman said that he believed most thoroughly in the possibilities of the tropics. He had had a fair experience of their possibilities in his pearl fisheries expedition. The white man was wanted everywhere. Another point which struck him was the competition to which the Britisher was subjected by the German and the Frenchman. Lord Mountmorres proposed the health of the host, which was suitably responded to by Sir Alfred Jones, who said that his watchword was "Study what you have got." As an initial step the institute has just sent a gentleman to Paris to obtain for Liverpool a mass of information not locally accessible. The institute will work in many departments in coöperation with other bodies on an international basis, a free exchange of scientific information being thereby effected.

The University of Liverpool.

The city council on July 5th agreed to the recommendation of the finance committee to renew the grant of £10,000 to the University of Liverpool during the current year. The representatives of the city council on the council of the University have reported very favourably on the work carried on at that institution and are convinced that the aim of the University is "not only to serve the highest interests of the students, but to advance directly the commercial and industrial prosperity of the city; and that the University is using the best methods to obtain those results."—Professor Herdman conducted a small party of members of the Biological Society through the new buildings in Brownlow-street on July 1st, wherein the natural history department is to be housed. The primary object of the inspection of the numerous rooms was to see the accommodation provided for the Biological Society. The general arrangements of the spacious rooms, which occupy the central block between the Hartley botanical laboratory and the electro technic department, were much admired. The comprehensive museum, lecture theatre, ample laboratories, aquarium, and work places for advanced students all evoked commendation. Lord Onslow is to open the building on Nov. 4th.—The ceremony of conferring the degrees gained at the University during the past year took place at St. George's Hall on July 8th. There was a large and fashionable gathering of ladies and gentlemen and the galleries were occupied by students who showed their traditional resourcefulness in contributing to the liveliness of the proceedings. The candidates entered the hall in processional order and were followed by graduates, members of the governing and teaching bodies, distinguished guests, and civic representatives, with the addition of Sir Joseph Wilson Swan who subsequently gave an address in connexion with the opening of the new electro-technic laboratory at the University. The Earl of Derby, K.G., in his capacity as Chancellor of the University, presided, and "in virtue of the powers vested in him" conferred the degrees in due form. Following upon the ceremony at St. George's Hall, Sir Joseph Swan, accompanied by the Earl of Derby and Vice-Chancellor Dale and a numerous company, drove to the new electro-technic laboratory in Brownlow-street and having been presented with a golden key by the architects formally opened the main door. The visitors made a tour of inspection and subsequently assembled in the lecture theatre to hear a short address from Sir Joseph Swan. Professor Marchant, who is in charge of the laboratories, proposed a vote of thanks to Sir Joseph Swan and said that it was particularly fitting that Sir Joseph Swan should open a laboratory intended to train people in a knowledge of all the developments of electricity because he was the first to make the incandescent electric lamp a practical success. The new laboratories are an outcome of the endowment of a chair of electro-technics by Mr. David Jardine in 1903. Mr. Jardine's gift amounted to £10,000, and for the purposes of building the University fund advanced £12,000 whilst the Lancashire county council contributed £1000.

Mill-lane Hospital, Liscard.

Dr. J. Oldershaw, the vice-chairman of the Wallasey health committee, opened a new pavilion at the Mill-lane infectious diseases hospital on June 30th. The new pavilion has accommodation for 20 beds, bringing the total number of beds up to 64. The hospital was opened in 1887 with one pavilion containing eight beds. In 1894 a second pavilion with 12 beds was added and five years ago the area of the site of the hospital was increased to over six acres. If required further additions can be made, bringing up the total to 124 beds. Dr. Oldershaw pointed out the care that had been taken in construction in order that there might be no crevices to afford lodgment for infection-bearing material.

Accident to Dr. Joseph Henry of Rochdale.

Dr. Joseph Henry, medical officer of health of Rochdale, met with a serious accident on June 27th Whilst driving a dog-cart in the neighbourhood of Sudden, near Rochdale, the horse took fright at some passing object and bolted. The efforts of Dr. Henry and his coachman were unavailing in stopping the animal in its headlong course. The trap collided with a lamp-post and Dr. Henry and the coachman were thrown out. Dr. Henry sustained a simple fracture of the right tibia, besides bruises on the face and other parts of the body. The coachman escaped with only a few bruises. Dr. Henry is happily progressing favourably.

H.R.H. Princess Christian and the Liverpool School of Tropical Medicine.

Her Royal Highness Princess Christian received the following members of the Liverpool School of Tropical Medicine at Schomberg House on July 1st: Sir Alfred Jones (chairman), Major Ronald Ross (professor of tropical medicine), and Professor Rubert W. Boyce (the dean of the school). The Princess, who is honorary president of the school, presented the Mary Kingsley medal, on behalf of the Tropical School, to Dr. Laveran of the Pasteur Institute, Sir Patrick Manson, and Colonel D. Bruce, R.A.M.C.

July 11th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

Opening of a New Semi-convalescent Hospital at Cookridge.

THE opening of the new Robert Arthington Semi-convalescent Hospital at Cookridge marks an important step in the history of the General Infirmary at Leeds, the work of which it will greatly facilitate. The policy of which the opening of this hospital is the latest expression was experimentally entered upon some 19 years ago. It was found that the ordinary convalescent homes to which many patients were sent from the infirmary could not, as was to be expected, provide for those who required a considerable amount of nursing or for those who, having been operated on, required skilled dressing combined with the benefits of pure air. The authorities of the Cookridge Convalescent Home kindly placed one of their wards at the disposal of the infirmary and this was provided with a sister in charge and a staff of nurses. The results were so satisfactory that a citizen of Leeds, Mr. John North, very generously gave a sum of £5000 towards the building of the semi-convalescent hospital, known as the "Ida" Hospital and so named in memory of one of his daughters, which was built close to the Cookridge Hospital and which, during the last 17 years, has been of the utmost utility. It provides accommodation for 50 patients and is under the immediate charge of a resident medical officer, a sister in charge who acts as matron, and a staff of nurses from the infirmary. It is situated about five miles from the centre of the city, on the high ground which separates Airedale from Wharfedale. The supplementing of this by the hospital which has just been opened was rendered possible by the gift of £12,000 by the late Mr. Robert Arthington who gave the money to the infirmary authorities to build a hospital for women and children. A site was purchased adjacent to that on which the Ida Hospital stands and in this way the new hospital was able to be arranged practically as an extension of the old one, with which it is connected by a covered way. The kitchen and certain parts of the administrative department are common to both. Both hospitals are constructed on the same general plan of a central block, with two widely diverging wings, inclosing in each case a wide angle, opening in a southerly direction. There are extensive verandahs and for some years quite a number of the patients at the Ida Hospital have slept out of doors. There are also small wards, day rooms, and an isolation department in case of the occurrence of any infectious disease. The patients who are sent to these hospitals remain under the care of the honorary officer under whose care they were when in the infirmary. Hitherto the duty of visiting the hospital has devolved on the assistant staff, but provision has now been made for a more systematic and regular performance of this duty by the appointment of a special officer. The "assistant surgeon in charge of the Ida and Robert Arthington Hospitals," who must be a Fellow of the Royal College of Surgeons of England, is appointed for a period of ten years, and is during that time a member of the faculty (or honorary staff) which in Leeds carries with it a seat on the board. He visits the hospitals twice a week. As the first holder of this post the election committee has recently appointed Mr. J. F. Dobson, M.S. Lond., F.R.C.S. Eng. The following extract from the annual report will be read with interest by those who are concerned in hospital finance:—

> The chief reason which has induced the board to decide upon the development of semi convalescent hospitals has been economy. As medical and surgical science progress, a great hospital such as the Leeds Infirmary inevitably becomes more expensive, so much so that it is wasteful to allow patients in a convalescent stage to occupy the room provided in it. At the same time these patients may be too ill to be taken home and too ill to recover without constant nursing and medical and surgical attendance. The semi-convalescent hospitals are devised to meet this class and it is found that patients after reaching a certain stage of convalescence derive more benefit by being treated there than

at the infirmary, whilst the expense of their maintenance falls from 27*s.* to 15*s.* 5*d.* per week. It is believed that sufficient of this class will be found to fill the Robert Arthington extension and that the hospital will thus obtain an increase of its accommodation of 50 beds at less than two-thirds of the cost of a similar addition to the infirmary itself.

July 11th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Quater-Centenary Celebration of the Royal College of Surgeons of Edinburgh.

OWING to the large number of those who have accepted the invitation to the evening reception of the quater-centenary celebration of the Royal College of Surgeons of Edinburgh which will be held on July 20th, it is now intimated that the gathering will be held in the Royal Scottish Museum, Chambers-street, instead of in the Royal College of Surgeons, as originally intended, and stated on the cards of invitation.

The Dangers of Shell-fish.

Dr. A. K. Chalmers, medical officer of health of Glasgow, in a report to the health committee says that during past summers it has been necessary to refer to cases of enteric fever occurring in association with the consumption of shell-fish by excursionists to coast resorts. In contrast with these occurrences there has been little local evidence tending to incriminate the trade customs of the local shell-fish gatherers. It was recorded, for example, in connexion with the Lochgilphead cases of enteric fever two years ago, that the regular gatherers at that place rejected such shell-fish as were regarded by them as "sick," because they lay on the surface; while, on the other hand, the visitors collected and ate these without hesitation, being unacquainted with the fact that the healthy mollusc of the species then implicated was to be found below the surface of the sand. There thus arises the apparent anomaly that while visitors sickened after consuming shell-fish gathered on the spot, no cases were traceable among the consumers of those despatched to Glasgow in course of trade. Recently, together with Dr. J. C. McVail, medical officer of Dumbartonshire, and Dr. R. MacNeil Buchanan, the city bacteriologist, he visited the Gareloch, where gatherers were employed sending shell-fish to the Glasgow market. The sewage of the neighbourhood discharges on the foreshore towards the northern side of the loch, while that portion between the houses and the burn separating the parishes of Row and Roseneath is a little further distant from the sewers. The distribution of the mussel over the foreshore is irregular, the deposits lying closer at some places than others, but the gatherers were quite alive to the business risk of disease becoming associated with the consumption of their gatherings and purposely abstained from lifting mussels from that section of the shore on which sewers, or the bulk of them at least, were discharging. Herein, therefore, lies the note which may serve as one of warning to excursionists, for while the regular gatherers thus restrict their operations they were told of irregular gatherings—sometimes for bait but chiefly by visitors—of mussels from the area of obvious sewage pollution. Information in sufficient detail was not forthcoming to enable Dr. Chalmers to say what distance from a sewage pipe discharging below high-water level would in all circumstances constitute risk of infection from shell-fish gathered in the neighbourhood, but the direction of tides and local currents would obviously influence the question. In general, however, it may be recommended to the occasional visitor who has no opportunity of studying the habits of the marine fauna, that it would be well that shell-fish should only be gathered after inquiry has been made as to those habits from the local gatherers. Dr. Chalmers suggests the desirability of an inquiry into the conditions present over the whole area of shell-fish layings in the Clyde basin with a view to marking off such as come within the "danger zone" of sewage pollution. Dr. Buchanan reports that of six mussels taken at random from the neighbourhood of a sewage pipe all contained bacterial evidence of sewage contamination. Of a like number taken from a spot beyond this three were similarly affected, as were also four out of six taken from a spot still further removed but probably subject to the influence of local currents. The committee has requested Dr. Chalmers to communicate with the clerks to the local authorities of Argyllshire, Ayrshire, Renfrewshire, &c., requesting them to have boards placed on the shores warning visitors of the dangers attendant on the consumption of the class of shell-fish referred to in the report.

Infantile Mortality.

One of the most notable works carried out by the health committee of Glasgow is that associated with the question of infantile mortality. It has recommended that the medical officer of health should be empowered to give a fee of 1*s.* to the first person who gives him notification of a birth in certain districts of the city. At present births must be registered within three weeks, and as a rule it is done at the end rather than at the beginning of this period. The first three weeks of a child's life are probably the most important. It is intended that at the earliest possible moment after notification a visit should be made by one of the female inspectors who could be of great service in giving advice. It is a startling fact that while during the past 30 years the death-rate in the city has been greatly reduced the infantile mortality is as high as, if not higher than, it has ever been.

Insanitary Houses in Peterhead.

At a recent meeting of the public health committee of the Peterhead town council a letter was submitted from the secretary to the Local Government Board inquiring what steps were being taken in connexion with the remarks of the medical officer of health and sanitary inspector in their respective reports for 1904 with regard to the houses condemned as unfit for human habitation, the insanitary condition of a number of the houses lying between the Seagate, Brook-lane, Longate, and Broad-street, and the disposal of house refuse, particularly in the Ronheads district. The several subjects having been fully considered it was resolved to remit to the sanitary inspector again to examine the area referred to and to report in detail, with a view to the committee taking such action as it might deem advisable, in accordance with the powers contained in Section 154 of the Burgh Police (Scotland) Act, 1892, and in the meantime to put in force the powers contained in the Police and Public Health Acts against all persons committing nuisances of the description indicated; and, further, the town clerk was instructed to issue handbills to be posted throughout the burgh calling the attention of the public to the matter and to bring the subject before the inspector of police.

Epidemic of Measles at Fort George.

A situation of gravity in military circles has been created by the outbreak of a serious epidemic of measles among the soldiers stationed at Fort George. At the present moment the barracks and military camping ground there are occupied by a large number of men, there being 600 of the 3rd Battalion Cameron Highlanders, 700 of the Black Watch (1st Battalion Royal Highlanders), and about 100 Seaforth Highlanders. The outbreak of measles began about the middle of June and a military officer who visited the place at the end of June states that when he was there there were four or five large marquees filled with men who were suffering from the disease. The whole place—barracks and camping ground—has been isolated and the men have been placed in quarantine, no one being permitted to enter or to leave the limits of the area The epidemic first broke out among the Cameron Highlanders, who were camped near the fort, but the disease has spread to the garrison companies.

Contagious Diseases in Aberdeenshire.

At a meeting of the executive committee of the Aberdeen county council on July 7th, Mr. M. Gordon of Newton, convener, in the chair—it was reported that since May 1st there had been six outbreaks of parasitic mange and no fewer than 29 outbreaks of anthrax, the latter embracing practically all parts of the county. In view of the danger of cutting up animals which die from anthrax and thus allowing the tainted blood to escape and to propagate the disease, Mr. Smythe of Echt suggested the desirability of asking the Board of Agriculture for powers to compel owners of stock, in the event of sudden death, to inform the inspector for the local authority rather than to call in the services of a private veterinary surgeon. It was ultimately decided, however, that the county clerk should prepare and circulate a leaflet drawing the attention of stock owners to the fact that in the event of sudden or suspicious death among their stock they were entitled to have the gratis advice of the inspector of the local authority on their notifying the latter the occurrence. It was agreed also to recommend the unty council to ask the Board of Agriculture for powers to nend the Aberdeenshire (Parasitic Mange) Order of 1903 the following effect:—

(1) That all affected animals be detained at the place at which the ıbreak occurred until they are cured, with a provision for change the place of detention where necessary; and (2) that the movement other animals out of premises where the disease exists shall only be lowed subject to the animals being washed over with a proper disfectant before movement.

July 11th.

IRELAND.

(*FROM OUR OWN CORRESPONDENT.*)

The Belfast Workhouse Children.

AT a meeting of the Belfast board of guardians held on uly 4th a motion was carried to the effect that the nembers were in favour of the removal of the workhouse hildren from the workhouse grounds. Unless this were one, so placing the school buildings at the disposal of he guardians, a new children's infirmary would have to be provided. What is contemplated is the establishment of schools, as is the custom in England and notably in London, for the training of workhouse children.

The Belfast County Court-house.

The summer assizes open at the court-house, Belfast, this week and the high sheriff of Belfast (Dr. Henry O'Neill) finds that, from a sanitary point of view, the building is in an "infinitely worse" condition than it was in March last when the grand jury, common juries, and the Bar passed special resolutions drawing the attention of the judges to the matter. The work, long delayed, has been entered upon but it should have been taken in hand long ago and completed without a rush in time for the assizes. The Antrim county council has decided to expend a sum of £13,650 to provide for increased accommodation in the court-house, as agreed upon by county Antrim and the city of Belfast, both of which use the building for holding their respective assizes.

Lightning Catastrophe near Lurgan.

On the evening of July 9th the north of Ireland was isited by a severe thunderstorm and a flash of lightning ruck the pole of a tent belonging to the Irish Christian Vorkers' Union at Annaghanoon, near Donacloney, in the eighbourhood of Lurgan. As a result two men in the udience were killed and some 35 persons were injured. en of these received burns, some of which resembled the arks which would be inflicted by an ordinary fire spark, hile others were larger but none of very great extent, and eyond the shock occasioned to the nervous system no erious injury has been sustained by any of these patients. ne of the female patients who for a time was despaired of recovering and it is remarkable that in her case, though he was so severely prostrated, no marks of burns appeared on e body. At the time of the occurrence the audience in e tent were standing and singing a hymn.

July 10th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Possible Case of Paget's Disease (Ostitis Deformans) cured by Antisyphilitic Treatment.

AT a recent meeting of the Hospitals Medical Society I. Jacquet showed a patient who gave a history of having ad 30 (*sic*) chancres of the penis in the course of one year. le then, following on an injury, developed a deformity of he tibia which exhibited the "sabre-blade" shape. The rogress of this disease was arrested by mercurial treatment. I. Jacquet asked his colleagues whether this was really a ase of osteitis deformans or whether it was simply a case f syphilis, the diagnosis being based on the history and the esult of the treatment. For his own part he inclined to he latter opinion.

Two Cases of Addison's Disease Successfully Treated by Adrenalin.

At the meeting of the Therapeutical Society held on June 28th M. C. Gulbenk stated that cases of Addison's disease in which much improvement had been brought about by the administration of adrenalin were not uncommon in medical literature. He had himself treated with adrenalin patients under his care who were suffering from this disease. Two of these patients were practically cured, the asthenia disappeared, as did the pains and the vomiting, while the general health markedly improved. M. Gulbenk then proceeded to endeavour to account for the constant failures mentioned by many observers. Some pathologists regard Addison's disease as a lesion of the great sympathetic nerve, others as a destruction or functional arrest of the suprarenal bodies. It is therefore probable that Addison's disease is merely a group of symptoms produced by these two lesions coincidently. A sort of vicious circle takes place; the destruction of the gland brings about degeneration of the nerve, and a nerve lesion brings about degeneration of the gland, so that the clinical features of Addison's disease are due to both these factors together. Such is the opinion of Lancereaux. If the glandular lesion is the predominant factor adrenalin acts well; if, on the contrary, the nerve lesion is predominant adrenalin is of little use. On the whole, the administration of adrenalin is a valuable aid in the treatment of Addison's disease, especially in those cases in which the suprarenal body itself cannot be administered, although this last substance when given raw has a much more powerful therapeutic effect than has adrenalin.

The International Congress on Infant Feeding.

The first session of the Congrès International des Gouttes de Lait will be held in Paris on Oct. 20th and 21st. The presidents are Dr. Variot, physician to the Children's Hospital, and Dr. Dufour, the founder of the "*goutte de lait*." Among the committee are Dr. Richardière and Dr. Boissard, physicians to the Paris hospitals, and sundry foreign medical men who have founded "*gouttes de lait*" in Spain, Belgium, Russia, and Switzerland. The secretaries are Dr. Roger, physician to the hospitals, Dr. Péan, and Dr. Grasset. The object of the association is well known—namely, to diminish the mortality among non-breast-fed children by supplying good and pure milk and by instructing ignorant mothers. Anyone wishing to take part in the congress should send his name, together with 20 francs, to Dr. Roger, 39, Rue de Berry, Paris, before Oct. 15th.

Some Figures of Diabetes.

M. Navarre recently laid before the Lyons Medical Society some interesting figures concerning the frequency of diabetes among railway engine-drivers and firemen. The figures gave the following results per 1000. Of engine-drivers and firemen 12·65 were diabetic; of guards and brakesmen, 13·10; and of other railway servants, 1·7. M. Navarre attributes the diabetes which is so constantly found among travelling servants to the continual shaking which they undergo. M. Lepine considered that in addition to the purely physical shocks, mental anxiety plays a large part in the production of the disease. He cited the case of an engine driver who developed diabetes within 24 hours of the train which he was driving having just avoided a collision.

Pneumotomy for Dilatation of the Bronchi.

At the meeting of the Surgical Society held on June 28th M. Tuffier read, on behalf of M. Antipas, the report of a case in which the latter had performed pneumotomy. The patient was a child, aged four years, who for three months had suffered from pulmonary infection with signs of septic infection and a cavity at the base of the lung. On incising the lung, the tissue of which was much thickened, a small cavity was found which was full of pus. This was drained and the symptoms of septicæmia were markedly less on the following day. Broncho-pneumonia, however, supervened and the patient died. Pneumotomy only seems to have made any progress since the invention of apparatus to obviate the retraction of the lung which occurs when the pleura is incised. Such apparatus has been invented by both Saurbruch and Brower. The results of pneumotomy for bronchiectasis are not very encouraging, but in recent infections of the lung it is useful. Thoracoplasty is perhaps better and is certainly a less severe operation. M. Antipas related the case of a youth, aged 17 years, in whom he resected three ribs on the side which tended to contract and in whom all febrile symptoms disappeared after the operation.

Venom in the Eggs of the Viper.

M. Phisalix has already shown that when the toad awakes from its winter sleep the eggs in the ovary absorb a certain quantity of the poison which is circulating in the blood and this poison plays an important part in the phenomena of heredity. At a recent meeting of the Academy of Sciences he read a paper showing that the same process takes place in the viper. The yellowish "*bouillie*" obtained from the ovules of the viper by crushing them and removing the limiting membrane is very toxic and kills animals into which it is inoculated with all the symptoms of viperine intoxication. It has all the properties of the actual venom, it will not dialyse, and is destroyed on exposure to a high temperature. The presence in eggs of poisons so characteristic as those of the toad and the viper gives reason for thinking that together with the mechanical phenomena of development there are also chemical phenomena the rôle of which must be essential in the formation of the organs and for the mechanism of heredity.

Sodium Citrate in the Therapeutics of Infancy.

At the meeting of the Society of Pædiatrics held on June 20th M. Variot referred to the extremely satisfactory results which he had obtained in infantile gastro-enteritis by the use of sodium citrate.[1] While not denying the eupeptic action which has been ascribed to this drug he considers that its chief value is its power of acting as an anti-emetic in the digestive troubles of bottle-fed infants or in those who, although suckled, vomit for no definite reason.

July 10th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

A Tropical July.

WRITING on June 26th in the midst of a tremendous storm, during which the flashes of lightning and the thunder peals were so frequent as well-nigh to be past counting, I shared the consolatory anticipation of many a Florentine that this grand atmospheric performance was but the prelude to a period of cool steady weather, particularly as the finale of the said performance was what Italians call a "*nubifragio*"—the bursting of a waterspout, which flooded the streets, engorged the mountain streams to torrents, and roused Father Arno himself out of bed to run a race along his banks out of all keeping with his usually staid, not to say retiring, behaviour. We little knew what was in store for us! In a few hours the heat became all too perceptible, even aggressive, and before the week was half through not Florence only but all Italy was lying supine under a temperature to which the directors of the meteorological observatories throughout the kingdom have with difficulty recalled a parallel. Returns from these observatories continued to tell a similar tale. In Rome on July 4th the thermometer registered 40·1° C., whereas the highest figure for the last 30 years was 37·6° C. According to Professor Palazzo, of the Roman Meteorological Observatory, there is no exceptional cause to account for the phenomenon. "It is," he says, "the barometrical situation that determines great temperatures. All over Europe the barometrical markings have been abnormally high—exceeding 760. In Italy the differences of pressure are small; hence we have either very faint air-currents or perfect calm, and it is precisely the absence of wind and the serenity of the sky to which we owe our high temperature. The sun's rays are continuously scorching the earth; in the clear atmosphere there is not a cloud to intercept them; the air is absolutely pulseless. Even through the night, cloudless though it be, the sky is not very transparent and therefore the nocturnal cooling-down is hardly perceptible. No extraordinary agency lies behind the present high temperature in Italy; it is simply a concurrence of causes all tending to that result." The Padre Rodriguez of the Specola Vaticana and the Padre Guido Alfani of the Osservatorio Ximeniano in Florence have given the same opinion, all of them looking to barometric depression from the Atlantic to modify the situation. Meanwhile the number of cases of insolation reported from town and country is appalling, till the population hardly dares to venture abroad. The noonday stillness of the great industrial centres is something solemn, even sepulchral, and if, by necessity, an individual has to pass from one point of the city to another he may be seen (as described by Manzoni) hugging the shady side like a figure in *basso-rilievo* or, like the figure of the man in the opening of Dickens's "Little Dorritt," making a plunge into the blazing piazza and striking out for the nearest landing place. Serous apoplexy occurring in the night when the patient is in bed is frequently reported, chiefly from the great cities where American bars for the retail of iced beverages have multiplied enormously of late years and where the engorgement of the circulation with liquids induces the "condition precedent" to the apoplectic stroke. As I write reports from the provinces notify a slight diminution of the heat, though the returns of insolation stand at about the same figure. We have yet to receive full and adequately checked statistics of a phenomenon which will make the year now passing an *annus mirabilis* in meteorology.

July 8th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Decline of the Plague Mortality.

THE mortality from plague throughout India shows a rapid decline. For the week ending June 10th only 7486 deaths were reported as compared with 15,317 for the previous seven days. The Punjab had 5086 deaths, as against 9460; the United Provinces 955, as against 1785; Bengal 299, as against 661; Rajputana 349, as against 2449 (this extraordinary drop suggests some error in the returns); Bombay districts 345, as against 361; Burma 60, as against 85; Kashmir 56, as against 62; Bombay city 227, as against 346; and Calcutta 52, as against 84. The only place at the present moment where the disease seems to be spreading is Burma, where outlying districts from Rangoon have recently been attacked. Bassein has been declared an infected port. In the report for 1904 recently issued concerning the jails of the Punjab it is recorded that only one death from plague occurred, although the disease was raging in the province for three parts of the year.

The Prevalence of Kala-azar in Assam.

In a report recently published concerning the work of the dispensaries in Assam it is stated that the number of cases of kala-azar fell from 2534 in 1902 to 257 in 1904, but it is admitted that the diagnosis of the hospital assistants cannot be depended upon. Concerning this disease statistics are almost valueless, although it is probable that the mortality has not been so great in recent years as formerly.

Excessive Summer Heat.

During the past fortnight the summer heat in many parts of India has been excessive. In the Gangetic plain temperatures of from 100° to 114° F. have been frequent—the latter figure having been recorded in Allahabad and a temperature of 106° was registered in Calcutta. In the latter city the heat has been exceptionally oppressive and many deaths have been attributed to it. Large numbers of horses have been lost as well as draught cattle.

Cremation for the Parsi Dead.

There seems to be a move amongst a certain section of the Parsi community in Bombay to adopt the western method of cremation of the dead in place of the loathsome practice of exposing the dead to be devoured by vultures. The Hindu method of cremation by open wood fires is not supported. It is proposed to establish a Bombay cremation society on the lines of the Cremation Society of Bengal which was established in Calcutta in 1902. It is earnestly to be wished that the innovation may be taken up by the Parsi community, which, while so enlightened and far-seeing in some respects, is backward and exclusive in others.

Vital Statistics of Bengal.

A Government resolution on the report of the Sanitary Commissioner for Bengal for 1904 has just been issued. The birth-rate has been enormous—viz., 42·6 per 1000 for the whole province—and in Chota Nagpur division it reached nearly 50 per 1000. In the Hazaribagh districts the birth-rate exceeded 56 per 1000. On the other hand, the death-rate was high also—viz., 32·4 per 1000 for the whole province and over 35 per 1000 in many places. In Chota Nagpur division the death-rate was only 22·9 per 1000. The registration of births is hardly likely to be over estimated, but the registration of deaths is very probably under estimated. The infant mortality is put down at 187 per 1000 births but varies in different places, probably as much from defective registration as from the varying degrees of healthiness in districts. The heading of fever, under which so many deaths are recorded, covers a large number of diseases as well as of deaths of infants born feeble. Too much reliance should not be placed on Indian mortality statistics, especially with regard to the frequency of certain diseases, as the causes of death are in the vast majority of cases merely those given by the ignorant relatives. By Captain Rogers's researches in Dinajpur it was shown that out of 1000 deaths attributed to fever one-fifth were probably due to pneumonia, one-tenth to diarrhœa, one-ninth to pulmonary tuberculosis, one-sixteenth to dysentery, and one-fifth to other causes, leaving less than one-third as probably due to malaria. The Lieutenant-Governor has recently sanctioned a project for draining an area of 290 square miles and other schemes are in preparation with a view to lessen the prevalence of malaria. It is interesting to note that several of the municipalities of Bengal are becoming alive to the necessity of improved sanitation. There are 14 drainage schemes being prepared and others are under consideration. A great deal more might be done if progress in this direction was not left to municipal bodies but was taken in hand by a skilled sanitary board. At present such a body exists only to give advice—it has no power to command. Sanitary progress under such conditions must necessarily be slow.

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[1] THE LANCET, Nov. 26th, 1904, p. 1532.

June 23rd.

Obituary.

HERMANN NOTHNAGEL, M.D.,

FESSOR OF SPECIAL PATHOLOGY AND CLINICAL MEDICINE IN THE UNIVERSITY OF VIENNA.

UR Vienna correspondent has sent us the following brief preciation of the world-famous physician, Professor rmann Nothnagel. "Austrian medical science in parular, and that of the whole civilised world in general, have ffered a severe loss by the death of Professor Hermann Nothgel which occurred on July 6th from an attack of angina ctoris. He was in his sixty fifth year, having been born in ussia in 1841. He was educated at Berlin and Königsberg, nong his teachers being Traube, Virchow, and Leyden. In 366 he settled in Konigsberg as *privat-docent* and in 1870 e served as an army surgeon during the war, being medical fficer in charge of the hospital at Châlons-sur-Marne. He hen held various appointments at the Universities of Breslau. reiburg, and Jena, and in the year 1882 came the call to ienna. Here he served the University as professor of pecial pathology, therapeutics, and clinical medicine, besides eing director of the Medical Clinic. In his non-official apacity he built up a large practice, patients coming to him from all parts of the world, among them being various kings and two emperors. His contributions to medical literature were numerous and famous, amongst the best known being 'The Localisation of Diseases of the Brain' and 'Diseases of the Nervous System following Typhoid Fever.' Besides these he wrote a treatise on the Rhythmic Action of the Heart, a Text-book of Epilepsy, an exhaustive work upon Materia Medica, and edited the great work upon General Pathology and Therapeutics which was written by various authors under Nothnagel's personal supervision. His own contribution was the section on Diseases of the Intestines.

Nothnagel was the last of the great men who made the Vienna School of Medicine so famous, his chief predecessors being Hyrtl, Rokitansky, Billroth, and Skoda. For some years before his death he was aware that he was suffering from arterio-sclerosis and the last letter he ever wrote, composed only some two hours before his death, was addressed to his assistant at the clinic and contained exact notes of the course of his illness, of the rhythm and regularity of the pulse, and of his temperature. From these notes it is evident that he was fully conscious of the nearness of his end. As a teacher he was very successful and highly appreciated by the students. He was not only eloquent but his lectures were eminently practical, teaching his hearers not only to see but to observe and to draw conclusions from their observations.

"His body was buried on July 9th, an enormous crowd attending the rites. All the highest dignitaries of Vienna, representatives of the Government, of the University, of the medical societies and the colleges, took part and his remains were laid to rest amidst universal expressions of regret."

ALFRED BOWYER BARTON, M.D. St. And., F.R.C.S. Eng.

BY the death of Dr. Alfred Bowyer Barton, which occurred on July 4th at Brechin-place, London, S.W., in his 80th year, the medical profession loses one of its oldest members and one whose career led him into different paths from those usually pursued by the ordinary practitioner. He was born at Bungay in 1825 and in 1844 entered University College, London, as a student, among his friends and contemporaries being the late Sir Richard Quain, the late Mr. Cadge of Norwich, and the late Dr. James Wakley. In 1847 he entered the West India Mail Steamship Service and worked through the yellow fever epidemic in the West Indies of 1848. He next entered the Peninsular and Oriental Company's service as medical officer and worked in the East till 1855, when he went to the Crimea, where he was mainly employed in moving the sick and wounded from Balaclava to Scutari. After the close of the war he went to India during the Mutiny and was wrecked together with Havelock who was then on his way to the front. Dr. Barton's next scene of service was the China war of 1860, after which he settled at Shanghai. In 1861, together with Captain Blakiston and Colonel Sarel, he explored the Yangtse-Kiang, then an almost unknown river above Hankow. The party reached Pingshan on the Tibet border but were forced to return by the rebels. For their work each of them received the gold medal of the Royal Geographical Society. Dr. Barton then returned to England and took the M.D. degree of the University of St. Andrews and the Fellowship of the Royal College of Surgeons of England (by examination) and retired from active practice. Dr. Barton was a singularly powerful man, both physically and mentally. Until within a week before his death he was quite hale and vigorous. He leaves a widow, one daughter, and three sons.

GEORGE FREDERICK WALES, M.D. ABERD., F.R.C.S. EDIN.

To the profound regret of all who knew him, Dr. Wales, who previously to his retirement had a very large practice in the north of Ireland, died on June 27th. He was the son of John Wales, the descendant of an Essex family which settled in Ireland in the eighteenth century, and he received his early education at the Royal School, Dungannon. He studied medicine at Aberdeen, Edinburgh, and Belfast, and graduated Bachelor of Medicine of the University of Aberdeen in 1857. Ten years later he took the degree of Doctor of Medicine of that University, and in 1877 obtained the Fellowship of the Royal College of Surgeons of Edinburgh. At one time he was president of the Ulster Medical Society and was the author of several monographs on medical subjects. The early part of his medical career was marked by an incident which at once stamped him as a man of unflinching courage and tact. The steamship *Philadelphia* of the Inman line, of which he was medical officer, was on her maiden voyage wrecked off Cape Race and the coolness and address with which he dealt with the 600 panic-stricken passengers aboard were such as to earn for him the special thanks of the company for his services on that occasion. As resident surgeon at Downpatrick Infirmary he did some admirable work at that institution and as a member of the Belfast town council he was a prominent advocate of sanitary reform. At his instigation some valuable practical work was carried out. He was one of the original shareholders in the White Star Line and was closely associated with the founders of the company. Dr. Wales in 1859 married Miss Charlotte Greer of Dungannon. Three of his sons are now medical men and one is a clergyman of the Church of England.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION OF PRESIDENT.

Mr. John Tweedy was re-elected on Thursday afternoon last, July 13th, President of the Royal College of Surgeons of England, Mr. H. T. Butlin and Mr. Edmund Owen being elected Vice-Presidents.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At the primary examination held recently the following candidates passed in the subjects indicated :—

PART I.

Biology.—U. J. Bourke, London Hospital; and R. S. Minchin, St. Thomas's Hospital.

Chemistry.—H. S. Brown, University College, Nottingham; and R. J. W. McKane, Leeds.

Materia Medica and Pharmacy.—W. E. Dimond, Liverpool; E. R. Nezet, Edinburgh; P. D. Pickles, Leeds; and C. J. Wolfe, Edinburgh.

PART II.

Anatomy.—L. G. H. Furber, St. Bartholomew's Hospital; W. J. Gibson, London Hospital; T. Huddleston, Birmingham; C. J. M. Lawrence, Manchester; E. A. Mordaunt, Royal Free Hospital; G. F. Page, St. Bartholomew's Hospital; A. Perlman, Leeds; and P. A. Sullivan, Birmingham.

Physiology.—L. G. H. Furber, St. Bartholomew's Hospital; T. Huddleston, Birmingham; C. J. M. Lawrence, Manchester; P. J. Lush, London Hospital; E. A. Mordaunt, Royal Free Hospital; G. F. Page, St. Bartholomew's Hospital; and P. A. Sullivan, Birmingham.

UNIVERSITY OF BIRMINGHAM.—The following is a list of the successful candidates in the Faculty of Medicine :—

I. *Degrees of Bachelor of Medicine and Bachelor of Surgery.*—(a) Official: Frank Marsh. (b) Under Ordinary Regulations.—Edward Lancelot Bunting, Leonard Leigh Hadley, William Claude Horton, William Cuthbert Houghton, Henry Percy Pickerill, Thomas Holmes Ravenhill, Norman John Lancelot Rollason, and Frederick Wilkinson (scholarship).

II. *Fourth Examination* [illegible] *Ch.B.*—Class II.: Herbert Charles Horac[illegible] Lionel Chattock Hayes, Arthur Cecil Hi[illegible] [illegible]d Walter Rowland Southall Roberts.

III. *Third Examination for the Degrees of M.B., Ch.B.*—Class II.: Edward James Boome, Henry Neville Crowe, James Fenton (scholarship), Eric Thomas Gaunt, John Kennedy Gaunt, Philip James Mason, Nevill Coghill Penrose, Arthur John Smith, Rupert Wesley Thompson, and Francis Brett Young.

IV. *Second Examination for the Degrees of M.B., Ch.B.*—Class II.: John Adams, Charlotte Bailey, Mary Clarke (scholarship), George Henry Chavasse Mold, John Lichtenstein Ritchie, Herbert Henry Sampson, and Edward Vernon Whitby.

V. *First Examination for the Degrees of M.B., Ch.B.*—Class I.: Cranston Walker. Class II.: James Henry Bampton, Walter Charles Blackham, Norman Alexander Boswell, Charles William Hayward, Humphrey Francis Humphreys, Violet Maud McCready, Arthur Harry Newton, Kenneth Douglas Wilkinson, and Harry Wilks

VI. *Degree of Bachelor of Dental Surgery.*—Reginald Hudson Astbury.

VII. *Degree of Bachelor of Science in Public Health.*—(a) Official: Robert Arthur Lyster. (b) Under Ordinary Regulations.: Sidney Herbert Hawley and William Sisam.

TRINITY COLLEGE, DUBLIN.—At examinations held in Trinity term the following candidates were successful :—

FINAL EXAMINATION.

Section B.—Francis R. Coppinger, John D. Sands, Thomas H. Peyton, Richard A. Connell, John C. P. Beatty, Edward Gibbon, Gustav W. Thompson, Basil G. [illegible]son, Samuel G. S. Haughton, Thomas J[illegible] [illegible]hompson, Henry D. Drennan, Alfred C. [illegible] Ernest C. Phelan, Herbert J. Wright, Theodore C. [illegible] Dudley F. Torrens, Malcolm K. Acheson, Daniel M. Corbett, Thomas L. de Courcey, and Herbert R. R. Fowler.

PREVIOUS MEDICAL EXAMINATION.

Anatomy and Institutes of Medicine.—William S. Thacker, Johannes C. Pretorius, Wilfred J. Dunn, Frederick Stevenson, David J. Miller, Allman J. Powell, Charles H. O'Rorke, Edmond H. Sheehan, James C. C. Hogan, Henry de C. Dillon, Thomas P. Dowley, Denis J. Stokes, John A. L. Hahn, Albert V. J. Richardson, James Yourell, William Knapp, James D. K. Roche, Ernest N. Ryan, an William H. [illegible]

Physics and [illegible] Hughes, Arnold K. Henry Albert Stals [illegible] G. Leeman, William S. Boxwell, Cl[illegible], Peter H. Lemass, James Alston, Louis Trichard, William R. Watson, Charles H. Denham Hubert G. Holdbrook, Robert E. T. Tatlow, Adams A. M'Connell John C. Baker, Ernest Jameson, Frank Smartt, Alexander S. M Winder, Gervase Scroope, and Alfred H. Smith.

Botany and Zoology.—Arnold K. Henry, David L. M'Cullough Beatrice M. Hamilton, Thomas A. Hughes, Cecil P. Smyly Perceval G. Leeman, William P. H. Smiley, George Elliot, James H. Crane, William R. Watson, Edward P. Allman-Smith, Hilgard Muller, Adams A. M'Connell, Marius A. Diemont, John Gardiner Henry H. Ormsby, Euphon M. Maxwell, Eric J. Powell, John D Kernan, Victor G. Best, and William A. Taylor.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. T. Bergell has been recognised as *privat-docent* of Internal Medicine.—*Erlangen:* Dr. Lüthje o Tübingen has been appointed Extraordinary Professor o Preparatory Medicine and of the History of Medicine.—*Florence:* Dr. D. Crisafi has been recognised as *privat-docent* of Children's Diseases.—*Freiburg:* Dr. Emil Kuste has been recognised as *privat-docent* of Hygiene and Bacteriology.—*Königsberg:* Dr. T. Cohn has been recognised as *privat-docent* of Internal Medicine and Dr. R. Scheller as *privat-docent* of Hygiene.—*Odessa:* Dr. Golovin has been appointed to the chair of Ophthalmology.

A NEW WORKHOUSE INFIRMARY FOR PLYMOUTH—At the meeting of the Plymouth board of guardians held on July 7th it was decided to ask the Local Government Board to allow the guardians to proceed with the erection o the first section of a new infirmary which will cost about £10,000 and will provide accommodation for nearly 10 patients.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following prizes were awarded for the summer session, 1905:—Barker anatomical prize (£26 5*s.*), T. A. Burk; special prize (£21), J. B. Kelly. Carmichael scholarship (£15), R. M. Bronté. Gold and silver medals in operative surgery: gold, J. Prendiville; silver, R. Bury and L. Lucas (equal). Stoney memorial gold medal in anatomy, T. Sheehy. Practical histology: G. C. Sneyd, first prize (£2) and medal; and E. Harrison, second prize (£1) and certificate. Practical chemistry: Miss A. F. Nash, first prize (£2) and medal; and T. A. Peel, second prize (£1) and certificate. Public health and forensic medicine: C. J. B. Dunlop, first prize (£2) and medal; and W. E. M. Hitchins, second prize (£1) and certificate. Materia medica: C. J. B. Dunlop, first prize (£2) and medal; and V. J. Clifford, second prize (£1) and certificate. Biology: E. A. Gregg, first prize (£2) and medal; and E. Harrison, second prize (£1) and certificate. The next preliminary examination is fixed for Tuesday, Sept. 26th. The School of Surgery will resume work on Monday, Oct. 2nd.—Mr. Michael Ulick O'Sullivan, L.R.C.S. Edin., &c., having passed the necessary examination, has been admitted a Fellow of the College.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.—Mr. H. T. Butlin distributed the prizes to the successful students at the London (Royal Free Hospital) School of Medicine for Women on June 29th. Afterwards Mr. Butlin delivered a short address to the students in which he remarked that not long ago it had been predicted that women had neither the courage nor the strength to enable them to pass through the medical curriculum but it was now, of course, well known that women were quite able to do this. It was also foretold that women would be unable to pass the necessary examinations but now everyone knew that they not only passed examinations but took the highest honours attainable. A few months ago the success of the women students in the chemistry examination of the University of London was absolutely exceptional. It had also been prophesied that if women did pass the necessary qualifying examination for practising medicine they would not have the nerve to carry on practice but that had been proved to be false by the fact that so many medical women were now carrying on extensive practices. On looking into the figures of the University of London there was found a slight and steady increase of the number of women in the medical faculty. Out of 16 women candidates who presented themselves for the degree of Doctor of Science 14 succeeded and such a high percentage a very extraordinary occurrence. Incidentally Mr. in observed that there was not one single Doctor of ic; in fact, only 12 women had presented themselves examination for the degree of Bachelor of Music and of e 12 only three had taken that honour.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Select Committee on the Registration of Nurses.

IE Select Committee of the House of Commons which has been ring evidence for and against the registration of nurses since last r has now commenced the consideration of its report.

A Fortunate Bill.

t this late period of the session it is next to impossible to make gress with a private Member's Bill, for the reasons that all the time t the disposal of the Government and that such a Bill can only ceed by consent after midnight. The Bill which General LAURIE introduced year after year to amend the Medical Act of 1886 has at last moment found itself in the fortunate position of being arded with a kindly eye in all quarters and the result is that it passed its second reading and committee stages in the House of mmons this week without a word of comment or discussion. As re is now every prospect that the Bill will become law this sion the memorandum printed with the Bill may be quoted:—n order to facilitate the admission of colonially trained and registered dical men to practise in Great Britain and hold appointments in the perial service, the Act of 1886 provided for reciprocity between the other country and such of the self-governing colonies as might mply with certain conditions, but that Act expressly stipulates that hen any colony had a provincial and a federal organisation such ciprocal arrangements should be entered into with the federal vernment and not the provincial. In the case of Canada the British orth America Act of 1867, enacted by the Imperial Parliament, pressly provides that education shall be entirely under the control of e provincial and not the federal governments, so that it is impossible bring the Act of 1886 into force with Canada. It is impracticable to mend the British North America Act of 1867 and to transfer the ontrol of education to the federal authorities, and therefore it is the bject of this Bill to amend the Medical Act of 1886, without in any ay interfering with the principle, and to enable reciprocal arrangements to be entered into either with the federal or provincial governments." General LAURIE has the support of Sir WALTER FOSTER, Sir JOHN BATTY TUKE, Mr. ROTHSCHILD, Sir HOWARD VINCENT, Mr. MIDDLEMORE, and Sir MANCHERJEE BHOWNAGGREE.

The Education of Afflicted Children in Ireland.

A new Government Bill has been introduced to make better provision for the elementary education of afflicted children in Ireland.

Bills Abandoned.

Many Bills promoted by private Members have been dropped. Amongst those sacrificed are the following: Compulsory Vaccination (Mr. BROADHURST); Juvenile Smoking (Dr. MACNAMARA); London Hospitals, Exemption from Rates (Mr. HAYES FISHER); Lunacy Acts Amendment, London (Sir JOHN BATTY TUKE); Milk Depôts, London (Mr. LOUGH); Nurses and Private Nursing Homes Registration (Mr. CLAUDE HAY); Nurses Registration (Mr. MUNRO-FERGUSON); Pharmacy (Mr. LOUGH); Public Health (Dr. C. F. HUTCHINSON); Sale of Whisky (Sir HERBERT MAXWELL); and Vaccination (Mr. STANHOPE).

HOUSE OF COMMONS.

WEDNESDAY, JULY 5TH.

Plague in Madras.

Sir WALTER FOSTER asked the Secretary of State for India whether there had recently been outbreaks of plague in Madras which had been traced to intending emigrants housed in the emigrant depôts, and, if so, whether any steps had been taken to remove the emigrant depôts to some suitable position outside the city in order to protect the residents in Madras.—Mr. BRODRICK answered: Two or three cases of plague occurred in villages near the emigration depôts but I am not aware that any case has been traced to the depots. The Madras Government may be relied on to take all needful precautions. The latest returns of plague show that during the week ending June 10th there was only one fatal case of plague in Madras city.

Measles in Belfast.

Mr. JOSEPH DEVLIN asked the Chief Secretary for Ireland whether his attention had been called to the fact that on June 22nd, 1905, a [illegible] Belfast Summons Court carrying a child [illegible] consequence of which her removal from [illegible] —her the Notification of Diseases Act was in force in Belfast, and, if so, who was responsible for the case referred to not being reported to the proper authorities; and whether any inquiry would be ordered in the matter.—Mr. LONG replied: The incident referred to has not been reported to the Local Government Board. The Infectious Diseases (Notification) Act, 1889, is in force in Belfast but the definition of an infectious disease does not include measles. The local sanitary authority is empowered by Section 7 to extend the definition so as to include measles or any other infectious disease but it has not availed itself of this power in regard to measles.

Horses for Food.

Mr. CREMER asked the Under Secretary of State for Foreign Affairs whether he was now in a position to state the result of the inquiries which, in August last year and in this year, he promised should be made concerning the number of old and slaughtered horses or horses unfit for work that were periodically exported from this country to Belgium, Holland, and Germany; whether he could say for what purpose their carcasses were used; and whether their flesh was made into condiments of various kinds, returned to this country, and sold as articles of food.—Earl PERCY replied: In the Netherlands horses imported for the purposes of slaughter must be slaughtered in public slaughterhouses at Amsterdam, Rotterdam, de Leyde, or Neineguen. It is guaranteed that only sound meat is offered for public consumption. As regards Belgium, large numbers of horses, chiefly those which have been used in coal mines, are imported from Grimsby, Goole, Hull, and other ports on the east coast of England to Antwerp. When intended for human consumption they must be slaughtered at the public slaughterhouse and sold by butchers who only deal in horseflesh. Horseflesh does not appear to be made into meat extract in Belgium, but sausages for local consumption are manufactured. No horseflesh, except a few living animals, is exported to the United Kingdom. As to Germany, no export of horseflesh to the United Kingdom takes place from Hamburg, nor, it is believed, from other German ports, such flesh having no sale there and being easily recognised, more especially as all horseflesh is indelibly stamped on inspection with the word "Pferd." The larger part of the horses imported from the United Kingdom appear to have been, not for slaughter, but for riding and driving. About 130,000 horses a year are slaughtered in Germany, and as regards Hamburg a certain number are consumed by human beings, some being used at the Zoological Gardens and private menageries. The price varies from 2*d.* to 6*d.* per pound, sausages from 4*d.* to 6*d.* per pound. The following are the statistics respecting the export of horses of small value in 1904:—Value under £5: Belgium, 2475; Holland, 2333; Germany, 38; and France, 12. Value over £5 and under £10: Belgium, 14,492; Holland, 3893; Germany, 107; and France, 28. As regards France, reports from Dunkirk, Calais, Havre, and Cherbourg show that no horses unfit for further work are imported from the United Kingdom at any ports in those consular districts.

The Sale of Ether in Ireland.

Mr. JOSEPH DEVLIN asked the Chief Secretary for Ireland whether his attention had been called to the abuses arising from the unrestricted sale of ether in the county of Derry and to the inadequacy of the restrictions on the sale of laudanum in Ireland generally; whether he was aware that the want of more stringent regulations in regard to the sale of these drugs had been responsible recently for a murder in Derry county and the cause of a suicide in the city of Belfast; and whether, in view of the facts, he would take steps to mitigate the possibility of further abuses in connexion with the sale of these drugs.—Mr. LONG answered: Both ether and laudanum are scheduled as poisons under the Act of 1870. There is some reason to believe that ether is improperly sold in certain districts and the police will endeavour to bring offenders to justice, but I have no information that the provisions of the law as regards laudanum are evaded. The case in Derry is pending for trial and I abstain from making any statement in respect to it; and in the Belfast case the coroner's jury found that death was due to an accidental overdose of chloroform.—Mr. T. W. RUSSELL asked whether the Chief Secretary was aware that in Derry ether was sold in half-pint bottles cheaper than whisky.—Mr. LONG replied: I do not know that but I will inquire.

THURSDAY, JULY 6TH.

Cancer in Ireland.

Mr. SAMUEL YOUNG asked the Chief Secretary for Ireland how many operations for cancer had taken place in workhouses in Ireland; and how many of them had terminated in death during the eight years ending March 31st, 1905.—Mr. LONG replied: The records of the Local Government Board do not afford information on this subject.

The Central Midwives Board and Irish Midwives.

Mr. CHARLES CRAIG asked the Chief Secretary for Ireland whether he was aware that the Central Midwives Board of England had refused to place upon the roll of certified midwives nurses trained at the Belfast Maternity Hospital previously to March 31st, 1905, while it had placed on this roll nurses trained under similar conditions and up to the same date at the Dublin Maternity Hospitals, at the Cork Maternity Hospital, and at the maternity hospital at Limerick; what were the grounds for the action of the Central Midwives Board in the matter; and whether he would take steps to have the nurses in question placed in the same position as other nurses of similar training.—Mr. LONG answered: The Central Midwives Board is constituted under the Midwives Act, 1902, and the rules of the Board are subject to the approval of the Privy Council for England. The Irish Government has no functions in this matter, but I have been furnished by the Lord President of the Council with a statement on the question which has been prepared by the Central Midwives Board. I gather from this statement that the purpose for which certain hospitals in Ireland were recognised, and the Belfast Maternity Hospital was not so recognised owing to its failure to apply in time, ceased to exist on April 1st, when the temporary provision (Section 2) of the Act relating to existing midwives expired.

A Question of Alleged Pollution of Water.

Mr. PIKE PEASE asked the President of the Local Government Board whether the medical officer of health had reported to the Dartford rural district council that the pumping station at Darenth, Kent, sucked the adjacent surface springs to such an extent that they ebbed and flowed according to the pumping; that this water must be liable to pollution but that the water company denied this; and when the inquiry into the liability of this source of supply to pollution asked for by 20 resident householders on March 22nd, 1904, would take place.—Mr. GERALD BALFOUR said: I understand that the medical officer of health has made a report to the effect referred to. When the undertaking of the water company passed to the Metropolitan Water

Board the Local Government Board called the attention of the Water Board to this matter. The Water Board has made a series of tests, which have just been concluded, and I am now awaiting a report as to the result.

Experiments on Animals.

Mr. FIELD asked the Home Secretary whether, in view of the fact that the total number of vivisection experiments in 1905 exceeded those of 1904 by 13,478 experiments, he would cause inquiry to be made into this matter with a view to the abolition of vivisection.—Mr. AKERS-DOUGLAS said: I must point out to the honourable Member that this increase is almost entirely accounted for by the additional inoculations, hypodermic injections, and feeding experiments that have taken place. The total increase in all other kinds of experiments was only 45. These inoculations, which numbered 30,346 out of the total of 32,562 experiments performed in the year, in no case involved a serious operation, and a very large proportion of them were performed on behalf of public or local authorities. Constant attention is given to the matter but I am not prepared to take action in the direction suggested.

The Treatment of the Sick and the Wounded during War.

Dr. MACNAMARA asked the Secretary of State for War whether he would have prepared and would lay on the table a memorandum showing how far the recommendations of the Royal Commission of 1900 on the care and the treatment of the sick and the wounded during the South African campaign had been, or would be, carried out.—Mr. ARNOLD-FORSTER answered: I shall be happy to furnish the returns asked for by the honourable Member.

MONDAY, JULY 10TH.

The Recovery of Fees.

Sir CHARLES WELBY asked the President of the Local Government Board whether he was aware that in the case of an isolation hospital having no resident medical officer it was customary for the local practitioners to attend their own patients; and whether, in the event of any such practitioner being a member of the local authority to which such hospital belonged, it was the practice of the Local Government Board to take any steps to prevent the recovery by him of the usual fees paid by the local authoritity in such case.—Mr. GERALD BALFOUR said: I believe that not infrequently patients in isolation hospitals are attended by their own medical men. I am not aware of any case in which the Local Government Board has taken steps to prevent the recovery of fees in such circumstances, but I think it right to draw attention to the provision in Section 12 of the Municipal Corporations Act, 1882, which disqualifies a person for being a councillor of a borough if he has directly or indirectly by himself, or his partner, any share or interest in any contract or employment with, by, or on behalf of the council. There is a similar provision in the Local Government Board Act, 1894, as regards members of urban or rural district councils.

Conscientious Objection to Vaccination in Scotland.

Sir JOHN LENG asked the Lord Advocate whether the prosecution in Dundee of 21 parents who conscientiously objected to the vaccination of their children had been ordered by the Local Government Board for Scotland; whether such prosecutions took place in England; and why so many prosecutions of this kind were being conducted in one Scottish city.—The LORD ADVOCATE said: The Local Government Board does not directly order the prosecution of vaccination defaulters but is required by the Vaccination Act to see that its provisions are duly carried out. The Board communicates when necessary with parish councils calling attention to the provisions of the Act and among the parish councils lately so communicated with the parish council of Dundee was written to in the early part of the year. In regard to the latter part of the honourable Member's question, I have no information in regard to English prosecutions. The number of prosecutions, of course, depends on the number of defaulters.

BOOKS, ETC., RECEIVED.

ABERDEEN UNIVERSITY PRESS, LIMITED.

The Royal Medical and Chirurgical Society of London. Centenary, 1805–1905. Written at the Request of the President and Council. By Norman Moore, M.D., F.R.C.P., Honorary Librarian, and Stephen Paget, F.R.C.S., Honorary Secretary. Price not stated.

ADLARD AND SON, Bartholomew-close, E.C.

Observations on the Filarial Embryos found in the General Circulation of the Equidæ and Bovidæ, and their Probable Pathological Significance. By Alfred Lingard, M.B., M.S., D.P.H., M.R.C.S. Eng., Fellow of the Bombay University, Imperial Bacteriologist to the Government of India. Fasciculus I.—Bursati. Price 2s. 6*d*. net.

AMERICAN PEDIATRIC SOCIETY (Secretary, Dr. SAMUEL S. ADAMS, 1, Dupont-circle, Washington).

Transactions of the American Pediatric Society. Sixteenth Session. Held at Detroit, Mich., May 30th, 31st, and June 1st, 1904. Edited by Linnæus Edford La Fétra, M.D. Vol. XVI. Price not stated.

APPLETON, D., AND COMPANY, New York and London.

A Text book of Obstetrics. By Adam H. Wright, Professor of Obstetrics, University of Toronto, Obstetrician and Gynæcologist to the General Hospital, Toronto, Canada. Price 18s. net.

Modern Clinical Medicine. Infectious Diseases. Edited by J. C. Wilson, A.M., M.D., Professor of Medicine in the Jefferson Medical College. An authorised translation from "Die Deutsche Klinik," under the general editorial supervision of Julius L. Salinger, M.D. Price 25s. net.

BAILLIÈRE, J. B., ET FILS, 19, Rue Hautefeuille, Paris.

Les Actualités Médicales. Technique de l'Exploration du Tube Digestif. Par le Dr. René Gaultier, Ancien Interne Lauréat des Hôpitaux de Paris. Price Fr.1.50.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent G W.C.

Carcinoma of the Rectum: Its Diagnosis and Treatmen F. Swinford Edwards, F.R.C.S., Senior Surgeon to St. Hospital for Diseases of the Rectum and to St. Peter's H for Urinary Disease. Price 2s. 6*d*. net.

BARTH, JOHANN AMBROSIUS, Leipzig.

Die Lungenschwindsucht. Au [illegible] E menteller Hämatologischer [illegible] Berucksichtigung der sich in [illegible] ezug auf die Tuber . Von Privatdozen [illegible] ediz. Klinik am K [illegible] Geheimrat Pro Dr. von Leube.) Price M.4.

BEMROSE AND SONS, LIMITED, 4, Snow-hill, E.C., and Derby.

Garden Cities in Theory and Practice: Being an Amplificat a Paper on the Potentialities of Applied Science in a G City read before Section F. of the British Association. A. R. Sennett, M.I.C.E., M.I.M.E., M.I.E.E., M.R.I., Mem the Advisory Committee, Roads Improvement Associ Member of the Research Committee on Road Tractio Two volumes. Price 21s. net.

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FISCHER, GUSTAV, Jena.

Entwurf einer Relationspathologie. Von G. Ricker. Price M.

Antitoxische Prozesse. Von Dr. C. Levaditi. Price M.2.80.

GIORNALE MEDICO DEL REGIO ESERCITO, Roma.

Antropometria Militare. Risultati ottenuti dallo Spoglio dei Sanitarii dei Militari delle Classi 1859–63. Eseguito dall' Isp rato di Sanità Militare per Ordine del Ministero della Gu Incaricato della Direzione dei Lavori, Dr. Ridolfo Livi, Mag Medico. Parte II. Dati Demografici e Biologici. Price (Price of the complete work, 2 volumes, L.24.)

GRIFFIN, CHARLES, AND COMPANY, LIMITED, Exeter-street, St W.C.

An Introduction to Midwifery: A Handbook for Medical Stu and Midwives. By Archibald Donald, M.A., M.D., C.M. E M.R.C.P. Lond., Gynæcological Surgeon to the Manchester Infirmary. Sixth edition. Price 5s.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.

Bakteriologische Untersuchungen über Hände-Desinfektion ihre Endergebnisse für die Praxis. Von Dr. med. O. Sa a.o. Professor in [illegible]

Welt und Gehirn. [illegible]

Ueber Beziehung [illegible] anderen Wissens [illegible] in der Sektion f [illegible] national Congress of Arts and Science zu St Louis, 24. Septe 1904. Von Oscar Liebreich, Dr. med. und Professor der Pha kologie an der Universität Berlin. Price M.1.

ILIFFE AND SONS, LIMITED, 20, Tudor-street, E.C.

The Rational Treatment of Running Ears. By F. Faulder W F.R.C.S. Eng., Honorary Surgeon to the Coventry Hos First edition. Price 5s.

KARGER, S., Karlstrasse, 15, Berlin, N.W.

Die Krankheiten des Verdauungskanals (Oesophagus, M Darm). Ein Leitfaden für praktische Aerzte. Von Dr. Cohnheim, Spezialarzt für Magen- und Darmkrankheite Berlin. Price M.5.60.

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KIMPTON, HENRY, 13, Furnival-street, Holborn, E.C.

A Text-book of the Practice of Medicine. For Students Practitioners. By Hobart Amory Hare, M.D., B.Sc., Prof of Therapeutics in the Jefferson Medical College of Philade Physician to the Jefferson Medical College Hospital. 21s. net.

Essentials of the Diseases of the Ear. Arranged in the For Questions and Answers. Prepared especially for Student Medicine and Post-Graduate Students. By E. B. Gleason, M.D., Clini [illegible] of Otology Medico-Chirurgical Col Philadelphi [illegible] evised. Price 4s.

Indigestion. [illegible] Dieted. (With Sp [illegible] tipation.) By Th Remarks or [illegible] Dutton, M.D. Univ. Durh. Sixth edition, enlarged and rev Price 1s. 6*d*. net.

LEWIS, H. K., 136, Gower-street, W.C.

The Child's *Diet*. By J. Sadler Curgenven, M.R.C.S., L.R Price 1s. 6*d*. net.

METHUEN AND CO., 36, Essex-street, Strand, W.C.

Elementary Experimental Chemistry. By A. E. Den B.Sc. Lond., F.C.S., Head of the Chemical Department, Ham Technical College. Price 2s.

ew Sydenham Society, London (Agent, H. K. Lewis, 136, Gower-street, W.C.).

An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology. Compiled for the New Sydenham Society (A continuation of the "Atlas of Pathology"). Fasciculus XXII. Being XIV. of the Clinical Atlas. Leucoderma, Myxœdema, Miscellaneous, and Eruptions Caused by Drugs. Price to non-members, half a guinea.

ffice of the Superintendent of Government Printing, India, 8, Hastings-street, Calcutta.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series. No. 16.—The Specificity of Antivenomous Sera, with Special Reference to a Serum prepared with the Venom of Daboia Russelli. By Captain George Lamb, M.D., I.M.S. Price 6 annas, or 7*d.*

iegle, A., 2, Langham-place, W.

Electrical Methods in the Treatment of Affections of the Stomach and Intestines: A Practical Manual for Students and Practitioners. By George Herschell, M.D. Lond., Fellow of the Royal Medico-Chirurgical Society, Member of the British Electro-therapeutic Society, Senior Physician to the Queen's Jubilee Hospital. Price 3*s.* 6*d.* net.

teinheil, G., 2, Rue Casimir-Delavigne, Paris.

Bulletins et Mémoires de la Société Anatomique de Paris. Publiés par les soins de M. Xavier Bender, Secrétaire Général, et MM. Crouzon et Laignel-Lavastine, Secrétaires. LXXXe Année. Sixième Série, Tome VII. No. 3. Mars, 1905. Price not stated.

niversity of Chicago Press, Chicago.

A Laboratory Guide in Bacteriology. For the Use of Students, Teachers, and Practitioners. By Paul G. Heinemann, Sc.B., Fellow in Bacteriology, the University of Chicago. Price $1.50.

igot Frères, 23, Place de l'École de Médecine, Paris.

Les Epidémies et les Maladies Contagieuses au XXe Siècle. Conférences données à l'Institut des hautes études de l'Université nouvelle de Bruxelles. Par le Dr. Jules Félix. Price Fr.3.50.

entworth Publishing Company, Clun House, Surrey-street, W.C.

The Seaside and Inland A B C Holiday Guide to all Health and Pleasure Resorts and Places of Interest in the United Kingdom. Illustrated with photo views. Price 1*s.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Ackery, R. Faulknor, L.R.C.P. Lond., M.R.C.S. Eng., L.D.S., has been appointed Dental Surgeon to the North-West London Hospital.

Ball, John Bramley, L.D.S. R.C.S. Eng., has been appointed Dental House Surgeon to Guy's Hospital.

Burnet, R. W., M.D. Aberd., F.R.C.P. Lond., has been appointed Consulting Physician to the Great Northern Central Hospital.

Clark, Alfred, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Public Vaccinator for Ashburton, New Zealand.

Collins, J. C., M.B., Ch.B. Dub., has been appointed Medical Superintendent of the Northern Wairoa Hospital at Aratapu, New Zealand.

Douglas, A., M.B., Ch.M. Edin., has been appointed Port Health Officer at Oamaru, New Zealand.

Forty, Arthur Alan, L.D.S. R.C.S. Eng., has been appointed Dental House Surgeon to Guy's Hospital.

Hall, George Joseph Alphonsus, L.R.C.P. & S. Irel., has been appointed Public Vaccinator for Birmingham, New Zealand.

Hewkley, Frank, M.B. Durh., F.R.C.S. Eng., has been appointed Honorary Physician to the St. Pancras and Northern Dispensary.

Lindsay, Herbert Stott, M.R.C.S., L.R.C.P. Lond., has been appointed a Health Officer for the Port of Whitianga and Public Vaccinator for Mercury Bay, New Zealand.

Shand, Walter Moray, M.B., Ch.B. N.Z., M.R.C.S. Eng., has been appointed Public Vaccinator for Wellington, New Zealand.

Symes-Thompson, H. E., M.D., M.R.C.P. Lond., has been appointed Physician with charge of out-patients to the Great Northern Central Hospital.

Trenfield, George Henry, L.R.C.P. Lond., M.R.C.S., has been appointed Surgeon to the Midland Railway at Bristol.

Waterhouse, Rupert, M.D. Lond., M.R.C.S. Eng., has been appointed Pathologist and Curator of the Museum at the Royal United Hospital, Bath.

Wyer, Otho F., M.D. Glasg., has been appointed Consulting Physician to the Warneford General Hospital, Leamington.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Army Medical Service.—40 Commissions in the Royal Army Medical Corps.

Birmingham, University of.—Walter Myers Travelling Studentship. Value £150.

Chelsea Hospital for Women, Fulham-road, S.W.—Clinical Assistant.

Dorchester, Dorset County Hospital.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

Grocers' Company.—Two Scholarships for Original Research in Sanitary Science. Value £300 a year.

Hammersmith Infirmary and Workhouse, Ducane-road, Wormwood Scrubs, W.—Medical Superintendent and Medical Officer. Salary £300 per annum, with house, coals, light, and washing.

Hospital for Consumption and Diseases of the Chest, Brompton.—Resident Medical Officer. Salary £200 per annum, with board and residence.

Hospital for Sick Children, Great Ormond-street, London, W.C.—House-Physician, unmarried. Also Assistant Casualty Medical Officer, unmarried. Both appointments for six months. Salaries £20, with board and residence.

Hospital for Women, Soho-square, W.—Registrar. Honorarium 25 guineas.

Kent and Canterbury Hospital.—Honorary Physician.

Leicester, Borough of, Education Committee.—Medical Officer. Remuneration £400 per annum, rising to £450.

Liscard, Wallasey Dispensary and Victoria Central Hospital.—House Surgeon, unmarried. Salary £100, with apartments, board, and service.

Liverpool, Eye and Ear Infirmary.—House Surgeon. Salary £80 per annum, with residence and maintenance.

Manchester, Chorlton Union Workhouse Hospital, Withington.—Junior Resident Medical Officer. Salary £100 per annum, with rations, apartments, and attendance.

Manchester Northern (late Clinical) Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £80 per annum, with apartments and board.

Manchester, Victoria University.—Junior Demonstrator in Physiology. Salary £100, rising to £150 per annum.

Middlesex Hospital, W.—Emden Research Scholarship for Cancer Investigation, tenable for one year. Value £100.

Orkney, Papa Westray Parish Council.—Lady Medical Officer and Public Vaccinator. Salary £75, with fees, house, and garden.

Reading, Royal Berkshire Hospital.—Secretary and House Governor. Salary £200 per annum, with residence.

St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—Out-patient Clinical Assistants.

Sheffield, Children's Hospital (Out-patient Department).—House Surgeon. Salary £70 per annum, with board, lodging, and washing.

Southampton, Royal South Hants and Southampton Hospital.—Junior House Surgeon. Salary £60 per annum, with rooms, board, and washing.

Straits Settlement, Municipality of the Town of Singapore.—Assistant Municipal Health Officer, unmarried. Salary £400 per annum.

Ventnor, Royal National Hospital for Consumption.—Senior Resident Medical Officer, unmarried. Salary £200 per annum, with board and lodging.

Victoria Hospital for Children, Tite-street, Chelsea, S.W.—House Physician for six months. Honorarium of £25, with board and lodging.

Wakefield, West Riding Asylum.—Locum Tenens for six weeks. Terms £3 3s. per week, residence, board, &c.

Weston-super-Mare Hospital.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

The Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Stalybridge, in the county of Cheshire; and at Bracknell, in the county of Berks.

Births, Marriages, and Deaths.

BIRTHS.

Culmer.—On June 9th, at Nassau, Bahamas, the wife of J. J. Culmer, M.R.C.S., L.R.C.P., of a son.

Easterbrook.—On July 6th, at Arnprior, Gorebridge, Midlothian, the wife of Alex. M. Easterbrook, M.B., C.M., of a son.

Finch.—On July 9th, at Purston, Pontefract, the wife of W. Stanley Finch, M.R.C.S., of a daughter.

Hope.—On July 4th, at Grove-park, Liverpool, the wife of E. W. Hope, M.D., of a daughter.

MARRIAGES.

Bradley—Cadbury.—On July 6th, at the Friends' Meeting House, Birmingham, Neville Bradley, M.B., to Margaret, fourth daughter of the late Richard Cadbury, J.P.

Warren—Buchanan-Dunlop.—On July 6th, at Christ Church, Reading, Alfred Castle Warren, M.R.C.S., L.R.C.P., of 15, Campden Hill-square, Kensington, to Sabina (Ina), eldest daughter of Lieutenant-Colonel H. D. Buchanan-Dunlop, R.A. (retired), of Whitley Rise, Reading.

DEATH.

Cameron.—On July 5th, at Edinburgh, Robert W. D. Macmartin Cameron, M.D., D.Sc., late of Newton Stewart, N.B.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

POISONING BY FOOD AT ELY (LLANDAFF).

Dr. R. Prichard, medical officer of health of Llandaff and Dinas Powis rural district council, refers in his annual report to a mysterious case of poisoning. It appears that a number of persons partook of "faggots" and peas in the village of Ely, many of whom subsequently suffered acute, griping, abdominal pains, followed by vomiting and diarrhœa, and afterwards more or less prostration. The symptoms set in from three to ten hours after eating the food, except in the case of a girl aged 12 years, who had only two spoonfuls of peas and who had slight griping pains about 15 hours later. The food was purchased at a small shop on the Cowbridge-road. Some persons ate at the counter in the shop, others in their own homes. Ten persons, including some young children, ate "faggots" only; none of them suffered any ill effects. Ten others ate peas alone, while 17 others again partook of both "faggots" and peas; all of them suffered as above stated. The peas evidently contained the poisonous matter, as 27 individuals who took the peas either alone, with gravy, or with "faggots" were seriously indisposed after a few hours, while no one was affected who only ate "faggots." All recovered in the course of two or three days. The symptoms from which the patients suffered led Dr. Prichard to suspect possibly sulphate of copper, which is sometimes used in the greening of peas, but there was no trace of any metallic poison found in the samples of the "faggots," peas (cooked and uncooked), soda, &c., which were taken to, and analysed at, the Cardiff and County Public Health Laboratory.

THE COST OF LIVING IN WEST AFRICA.

To the Editors of THE LANCET.

SIRS,—In answer to Mr. St. George Queely's queries in regard to the cost of living in West Africa the following information in regard to the Gold Coast may be of use. I have not seen West Africa since 1901, but the modes of living will not have materially changed since then. As regards the distance of the goldfields from the coast this naturally varies with their position. I was ten days' march up-country, but some companies were located only a few miles away. Practically it amounts to this. Measure the distance of the camp from the Sekondi-Kumasi Railway. Allow one day for the railway journey and 15 miles a day for the hammock journey.

Provisions are all tinned. The native sheep and goats are too awful for words. Nowadays everything—bacon, flour, butter, even cigars—can be obtained tinned, but naturally the cost is somewhat great. £3 10*s.* is very moderate for a week's rations which should be ordered directly from England for choice. This does not include drinks, As to the kind of food requisite, I learnt by experience one or two things that perhaps you will allow me to mention here. 1. Get as large a variety as possible and put in plenty of tinned fruits. I never enjoyed tinned peaches till I swallowed a whole tin of them in the forest of Kujumakrum. 2. Do not forget a metal sparklet bottle and plenty of sparklet bullets. Limes are fairly plentiful in West Africa and a fizzy lime drink is a great boon out there. 3. Take a Berkefeld filter and use it always. The company I was on provided us with a carbon drip filter! We knocked the "filtering" apparatus out of it and used it to store boiled water. If your correspondent cares to communicate with me I should be delighted to give him any information that lies in my power.

I am, Sirs, yours faithfully,

July 8th, 1905. WEST AFRICAN.

MOTOR-CARS FOR MEDICAL MEN.

To the Editors of THE LANCET.

SIRS,—Will you be good enough to insert this in your paper? I am in want of a cheap motor-car, four-seated, so as to be able to combine pleasure with business and am told that the "Leader," at 225 guineas, is a good reliable car, and not unnecessarily complicated (as I shall not keep a chauffeur). Will any medical man having experience of this car be good enough to give me his opinion, especially as to hill-climbing, silence, and petrol consumption? I am, Sirs, yours faithfully,

July 11th, 1905. PLUG.

AN OLD MEDICAL ACCOUNT.

A CORRESPONDENT has sent us an old medical account which presents several points of interest. It gives details of all medicines supplied and the chief point which strikes the modern medical man is the enormous quantity of medicine which the patient received; whether he took it all is another matter. The account commences on Nov. 11th, 1825, and closes on Dec. 31st, 1826. No charge is openly made for attendance but the bill may well be said to afford an illustration of the gibe that an apothecary was a man who poured drugs of which he knew little into stomachs of which he knew less. The patient was apparently in fairly good health during the early months of the year but on March 1st he led off with a mixture 2*s.* 6*d.* and powders 2*s.* These lasted him about two days and he continued thus every two days until March 14th, when n active measures were undertaken. From this date to the end the year the unhappy patient received every day a draught draughts and pill, with the occasional addition of a blister. whole account, including dressings, &c., came to £105 12*s.*

A CASE OF ZONA OF THE FOREARM AND HAND.

To the Editors of THE LANCET.

SIRS,—With reference to the case published in THE LANCET July 8th by Mr. R. E. P. Squibbs, I saw a patient last week, a man, a 40 years, who had several small clusters of vesicles situated on posterior surface of the upper arm and forearm and also on the do surface of the first and second fingers, following the course of musculo-spiral and radial nerves. He complained of neuralgic pa which were most severe at night.

I am, Sirs, yours faithfully,

LAWRENCE F. HEMMANS, M.B., B.S. Durh., F.R.C.S. Edin

Lewisham, S.E., July 10th, 1905.

THE CULT OF THE ROSE.

WE have received a copy of the special Rose Number of the Garden Magazine, published by Messrs. W. H. Collingridge of Aldersga street, London, E.C. In addition to a coloured plate of the new sin rose Maharajah there are several illustrations of beautiful roses rose gardens and the letterpress will be found both interesting instructive to all who admire England's emblem.

THE HOLMAN LIBRARY AT EPSOM COLLEGE.

THE following subscriptions have been received since the list of Holman Testimonial Fund was closed: Mr. Hugh E. Vardon, £2 2 Miss Topham, £1 1*s.* The Holman Library at Epsom College, building which the fund has been devoted, is now completed will be opened on Founder's Day, July 29th. Subscribers wishi to be present are requested to apply to the Headmaster, Epso College, for tickets.

◆

C. J. H. is thanked for his communication. The newspaper paragra in question had already been brought to our attention.

COMMUNICATIONS not noticed in our present issue will receive attenti in our next.

Medical Diary for the ensuing Wee

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-squa (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Fr (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.).

TUESDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), S Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), We minster (2 P.M.), West London (2.30 P.M.), University Colle (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Thro (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golde square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Centr London Throat and Ear (2 P.M.).

WEDNESDAY (19th).—St. Bartholomew's (1.30 P.M.), University Colle (2 P.M.), Royal Free (2 P.M.) Middlesex (1.30 P.M.), Charing Cro (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's Colle (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M. National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samarita (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Norther Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M. London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-squa (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopæd (3 P.M.).

THURSDAY (20th).—St. Bartholomew's (1.30 P.M.), St. Thoma (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), S George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlese (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.).

FRIDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt Northern Central (2.30 P.M.), West London (2.30 P.M.), London

Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (22nd).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY (19th).—SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (11, Chandos-street, Cavendish-square, W.).—5.30 P.M. Annual General Meeting. Election of Office Bearers and Report of the Council.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (17th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. R. J. Reece: Immunity.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. S. E. Dore: Clinique. (Skin.) 5.15 P.M. Mr. C. Nourse: Atrophic Rhinitis.

TUESDAY (18th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Bidwell: Plaster-of-Paris Splints.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. Taylor: Clinique. (Medical.) 5.15 P.M. Dr. H. Campbell: Observations on Diet.

WEDNESDAY (19th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Dunn: Diseases of the Conjunctiva and their Treatment.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Pardoe: Clinique. (Surgical.) 5.15 P.M. Mr. A. Lane: Abdominal Surgery.

THURSDAY (20th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Practical Surgery.

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture:—Mr. Smart: The X Rays in the Diagnosis of Renal Calculus.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture:—Dr. H. Scharlieb: Some Post-anæsthetic Complications. (Post-Graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Mr. W. E. Miles: Neoplasms of the Rectum and Anus.

FRIDAY (21st).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Bidwell: Plaster-of-Paris Splints.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

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THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1905, which was completed with the issue of June 24th, and the Title-page to the Volume, were given in THE LANCET of July 1st.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 13th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
July 7	30·15	N.E.	...	115	77	55	55	63	Fine
" 8	30·12	N.E.	...	126	84	61	64	69	Fine
" 9	30·07	S.E.	0·55	127	82	60	64	71	Cloudy
" 10	30·03	W.	...	123	75	60	63	69	Fine
" 11	30·03	W.	...	124	80	64	65	70	Cloudy
" 12	30·06	W.	...	127	81	65	64	68	Cloudy
" 13	30·12	W.	...	118	75	63	66	70	Cloudy

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A Lecture

ON

HÆMOMANOMETRY IN MAN.

Being one of the Advanced Lectures in Physiology delivered at the University of London

By GEORGE OLIVER, M.D. LOND., F.R.C.P. LOND., &c.

GENTLEMEN,—During the past few years physiologists as well as clinicians have displayed much activity in devising methods of sphygmometric observation in man, which, in trustworthiness, may be regarded as approximating to the manometric procedure of the laboratory. And it may, indeed, be said that they have succeeded not only in attaining this most important end but in making the suggested methods easy of application and as free as possible from errors of technique; so that their employment does not necessitate the acquirement of that skill or personal quality which can only be derived from special training or from the possession of a certain aptitude in the observer.

It is needless to enlarge on the importance of the accurate observation of the blood pressure in man, especially in our inquiries into living pathology or (as preliminary or supplementary to the hæmometric record in animals) in building up our knowledge of therapeutics, or in applying that knowledge; for that will be obvious to all. But before dealing effectually with the practical aspects of hæmomanometry we find some problems of a purely elementary nature which await solution, for our knowledge of the physiology of blood pressure in normal man is still somewhat limited notwithstanding the good work which has been done towards its elucidation by such able investigators as Marey, Roy and Adami, Mosso, Leonard Hill, von Basch, Gärtner, Recklinghausen, Erlanger, Potain, Riva-Rocci, Gumprecht, Hensen, C. Martin, A. Martin, Stanton, Crile, O. E. Stephens, T. C. Janeway, Cook, Briggs, and others.

In physiology and medicine—founded as they are on experimental observation—advance depends mainly on the discovery of new methods. It was the introduction of the principle of the measurement of the arterial pressure by fluid compression applied to a limb which has made the study of hæmomanometry in man trustworthy and demonstrable to all observers. Almost simultaneously two experimenters (Leonard Hill and Riva-Rocci) conceived the idea of measuring blood pressure by compressing air in rubber bags encircling a limb—the effect of that compression on the arterial circulation being indicated either by the mercurial manometer (Riva-Rocci) or by an aneroid standardised by the manometer (Leonard Hill).[1] So far their procedures are identical; not so, however, their methods of reading the arterial pressure. Riva-Rocci, disregarding entirely the movements produced on the mercurial column by the arterial pulsation, takes as his indication of the arterial pressure the closure of the artery as shown by the cessation of pulsation in the radial artery; while Leonard Hill accepts the maximal oscillation of his indicator as denoting the mean arterial pressure. There have thus arisen two different modes of reading the arterial pressure founded on essentially the same procedure. The method of Riva-Rocci has been largely adopted by observers in the United States and on the Continent, while that of Leonard Hill has found most favour in this country. As the records furnished by these two modes of observation differ widely, some confusion may arise in comparing the results of clinical work on blood pressure, and as the advocates of either of these methods sometimes regard their data as more trustworthy and of greater clinical value than those of the other, it may be well to discuss anew the physiological and clinical significance of these two indications of the arterial pressure.

THE SYSTOLIC AND DIASTOLIC ARTERIAL PRESSURES.

It is generally admitted that the closure of the artery (*à la* Riva-Rocci) indicates the maximal arterial blood pressure—that moment of greatest arterial pressure produced by the ventricular systole. I think there can be no doubt as to this fact; and just lately P. Lockhart Mummery and W. Legge Symes have demonstrated in this laboratory that the Riva Rocci sphygmometer applied to the left thigh of a dog and a mercurial manometer connected with the right femoral artery afford readings which are practically identical.[2] Now, as this is so, it follows that the maximal oscillation of the indicator, though synchronous with the systole, does not indicate the maximal blood pressure, for when it is developed the artery is far from closed and, moreover, it appears at a much lower point on the scale than does the occluding pressure.

Experimenters are by no means agreed as to the precise interpretation of the maximal oscillation in relation to the diastolic arterial pressure—whether it denotes the mean or the minimal diastolic pressure. Leonard Hill believes that the maximal oscillation of the mercurial column occurs in the animal at or about the mean arterial pressure, and in this he is supported by C. Martin, who, however, does not regard this relation as constant in man.[3] Howell and Brush, on the other hand, have demonstrated that the maximal oscillation of the mercury in experiments on dogs takes place when the arterial pressure is lowest and they consider that the mean arterial pressure corresponds fairly well with the mathematical mean between the maximum and minimum pressures.[4] It has always seemed to me that the maximal oscillation is obtained when the pressure of the pad sufficing to balance the arterial pressure which exists just before the ventricular systole (therefore the minimum arterial pressure) produces almost an intermittent collapse of the artery between the pulsations and yet allows the free onward flow of blood.[5] This fact appears to me to be proved by the following procedure. Apply two bags to the limb, using two recorders; place one on the arm and the other on the forearm; develop the maximal oscillation, when the readings of both recorders will be the same.

Disregarding the question as to whether the maximal oscillation precisely signifies the mean or the minimal diastolic pressure, we may, I think, safely view these two methods of reading the arterial pressure as differentiating it into systolic and diastolic—the arterial pressures synchronous with the systole and diastole of the ventricle; and if we take the diastolic to represent the minimum pressure and the systolic the maximum, the mean arterial pressure should be, for all practical purposes, the mathematical mean between them—e.g., $\frac{\text{D. } 100}{\text{S. } 130}$ M. 115.

DESIDERATA IN A HÆMOMANOMETER FOR PHYSIOLOGICAL AND CLINICAL OBSERVATION.

The practical and comprehensive study of blood pressure in man requires the fulfilment of the following desiderata: (*a*) The instrument should afford accurate readings of both the arterial blood pressures (systolic and diastolic) and of the venous pressure. (*b*) It should be sufficiently sensitive and adaptable to furnish trustworthy records from the peripheral as well as from intermediate portions of the arterial system; for example, from the digital (including the ungual portion of the finger), the radial, brachial, &c (*c*) The indicator should be free from inertia and from errors due to momentum. Therefore the mercurial column should be avoided. (*d*) There should be no mechanical device such as springs, &c., to get out of order or to deteriorate. (*e*) The scale should be wide and easy to read and preferably horizontal rather than vertical. (*f*) The apparatus should be easy to manipulate and should not require any special training in technique; moreover, it should be portable and compact and possess a general adaptability to practical requirements.

A NEW FORM OF HÆMOMANOMETER.[6]

As a contribution towards the attainment of this ideal I will describe an apparatus of simple construction which I have lately employed in my inquiries. The instrument is graduated from the mercurial manometer and is fixed in a box in a horizontal position. It consists of a glass tube about 12 inches in length[7] (Fig. 1, *a*), receiving at one and (*b*) the rubber tube which leads to the rubber bag encircling the part from which it is desired to take the blood pressure and terminating in an air bulb (*c*) and tap (*d*). A short column (25 millimetres in length) of absolute alcohol, coloured by Merck's fett-farben Blau (*e*), is used as the indicator. I have found that a short mercurial indicator is not sufficiently sensitive to show the diastolic pressure from the finger, but, as a rule, suffices for that from the arm and forearm, and becomes much more responsive to pulsation when conjoined with a drop of absolute alcohol. Spirit or mercury (preferably with a trace of spirit) may therefore be used as the indicator.

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[1] I believe the credit of devising this method belongs to Leonard Hill, though his results were published after those of Riva-Rocci.

[2] See Journal of Physiology, vol xxxii., May, 1905.

[3] Brit Med Jour., 1905, vol i., p. 870.

[4] Boston Medical and Surgical Journal, 1901, vol cxlv., p. 146.

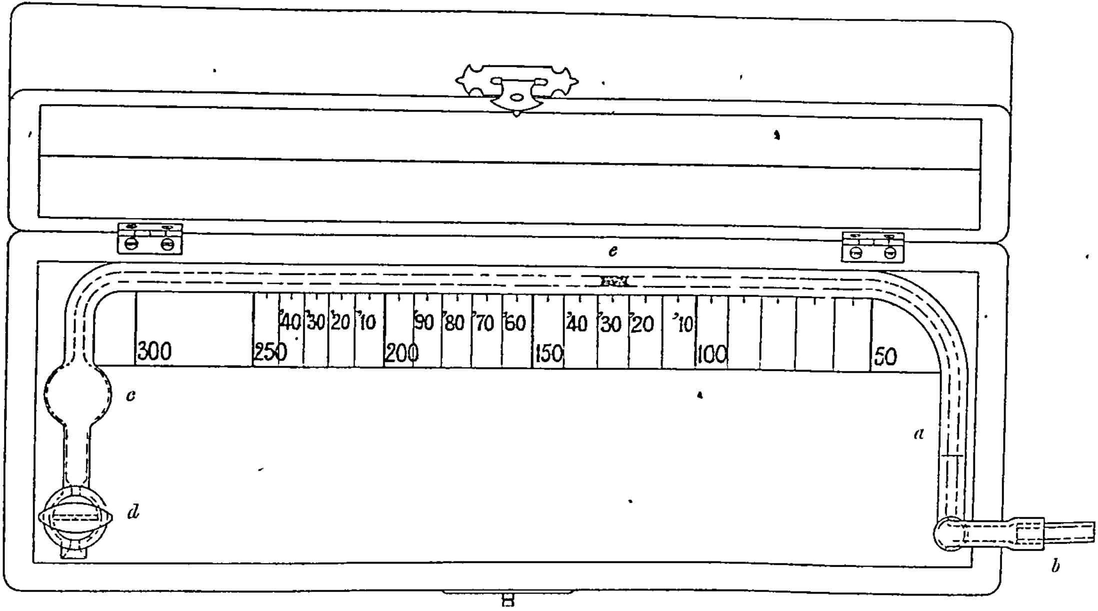
[5] See Pulse-Gauging, pp. 102, 103. 1895.

[6] This instrument was demonstrated at the meeting of the Physiological Society on June 17th, 1905.

[7] The length of the scale is determined by the capacity of the air bulb. For example, it may be extended to over 20 inches, the tube (fixed all round the inside of the box) being over 600 millimetres in length for 300 millimetres of mercury pressure.

The principle followed is to raise the air pressure in the rubber bag and to measure it by the compression of the air in front of the index. By this simple arrangement the air within the apparatus, when the tap is closed, becomes, as it were, a portion of the compressed air inside the bag and tubing—the degree to which the compression is carried by the observer being indicated by the upper end of the short column of the coloured spirit or mercury interposed between the two areas of compressed air. The principle of air compression for the measurement of blood pressure has been adopted by Hill and Barnard in their liquid sphygmometer and by Gärtner in his tonometer. The apparatus consists of (1) the hæmomanometer; (2) the filler and regulator, which are joined together so that the former may be squeezed by the hand and the latter may be actuated by the thumb, leaving the other hand free to feel the pulse during the reading of the pressures (diastolic and systolic); (3) rigid rubber connexions; (4) two air bags, canvas covered, with straps and friction buckles which are secure at any point, (*a*) 12 × 33 centimetres for arm and forearm and (*b*) 3 × 9 centimetres for phalanges and for the venous pressure; and (5) a stout rubber ring as compressor for taking the systolic digital pressure.

IG. 1.



The hæmomanometer.

ADVANTAGES.

This apparatus appears to me to present the following advantages over the mercurial manometer employed in clinical observation:—

1. Portability, compactness, and general adaptability to practical requirement without loss of accuracy.
2. The sensitiveness of the spirit indicator is shown by the fact that it enables the arterial pressure (diastolic) to be taken almost in the pre-capillary area of the arterial system (finger-tip) as well as in the arteries of the limbs.
3. This instrument furnishes the systolic and diastolic pressures in the finger (as afforded by Gärtner's tonometer and Mosso's sphygmomanometer) as well as in the limbs; and the venous pressure.
4. The scale being horizontal and open (instead of being vertical and contracted as in the U-shaped mercurial manometer) is read with ease and accuracy.
5. It possesses the advantage over a mercurial manometer of an absence of inertia which is practically complete. It may be a question as to whether the heavy column of the mercurial manometer, with an unequal pressure on each end of it (normal atmospheric pressure on the free end and increasing air pressure on the other), is open to errors due to momentum in the measurement of rising or falling pressures of a pulsating fluid, but no doubt can exist as to the trustworthiness of the principle of equal pressures on both sides of an index free from inertia, as in this manometer. "So heavy a liquid as mercury cannot possibly follow the rapid cardiac and respiratory variations in pressure, and it is to be emphasised that the extent of these on the manometric trace affords no measure of their actual value."[8] Hence the preference sometimes given in the laboratory to Fick's kymographion (a C-shaped spring being used instead of mercury), this instrument being more responsive to rapid variations of pressure than the mercurial manometer. In sensitiveness to such variations the spirit index of the hæmomanometer is superior to mercury and is equal to a spring.

The arrangement is likewise more simple and altogether more satisfactory than mechanically devised manometers, there being no springs or other mechanism to get out of order; though the long experience I have had with my hæmodynamometer does not lead me to depreciate mechanism.

POSSIBLE DEFECTS.

It may be urged that temperature and variable traces of spirit left on the bore of the glass tube between successive observations might be sources of error. (*a*) The question of temperature cannot well arise as the tap is opened and the index is adjusted to zero just before each observation. But might not warmth, conducted from the bag, expand the air on the proximal side of the index, especially when it remains *in situ* some time? This suspicion is, however, disproved by the mercurial indicator returning to zero after an observation. Then, again, if the air is heated by compression it will, of course, be so on both sides of the index and this will not be affected. (*b*) With the spirit index are the readings vitiated by varying traces of spirit left after observation? The average volume of spirit left on the bore has been ascertained approximately by measuring the index before and after observations—the loss in length having been converted into a volume loss by ascertaining how many millimetres of the tube bore represent a cubic centimetre.

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[8] T. C. Janeway, M.D.: The Clinical Study of Blood Pressure, 1904, p. 5.

On comparing this loss in volume with the total air space to be compressed, it was found that this source of error amounts only to 0·45 per cent., which is negligible, especially as it is not easy to read smaller differences in arterial pressure than 2·5 millimetres of mercury. So far as I can ascertain, the more sensitive spirit index does not therefore introduce a practical or gaugeable error. Moreover, it has been found that after the first excursion of the index up and down the scale, subsequent ones do not reduce it, a certain average moistening of the bore preventing a further loss. It may therefore be well before making an observation, or a series of observations, to let the index slowly travel to 100 or 150 millimetres before fixing it at zero; and to drain from the bore any excess of spirit between repeated observations by tilting the box on its zero end for half a minute.

I have not yet quite decided on a standard instrument and the instrument maker has yet to settle details—as hitherto I have made my own instruments in different forms and have supplied several to friends for their criticism. It ought not to be costly to produce.

THE RELATIVE CLINICAL VALUE OF OBSERVATION MADE ON THE ARM AND FOREARM.

The arm, from its cylindrical form, even compressibility, and its single bone and artery, is anatomically well adapted to hæmomanometric observation, but these structural advantages are unfortunately counterbalanced by practical drawbacks. The procedure induces (*a*) a somewhat pronounced disturbance of the circulation of the limb (the venous outflow being arrested); and (*b*) considerable discomfort with its widespread effect on the vaso-motor system, raising the general arterial blood pressure from five to ten millimetres of mercury in proportion to the duration of compression and the sensitiveness of the subject. The latter disadvantage not infrequently engenders the practical difficulty of resentment on the part of the patient if at all sensitive or untrained to endurance of discomforts, and this objection to brachial hæmomanometry, though comparatively insignificant in male patients generally, is a substantial one with women, especially of the upper classes. Hence the practical importance of reducing the disadvantages of this easy mode of observing the arterial pressure without impairing its accuracy. With that object in view I have frequently made observations on the forearm, which are much less objected to than those on the arm, and readings so far have not differed in the two areas. The arm bag suffices for this purpose when evenly arranged in a somewhat spiral manner around the slightly tapering forearm, the radial artery being left exposed for the finger.

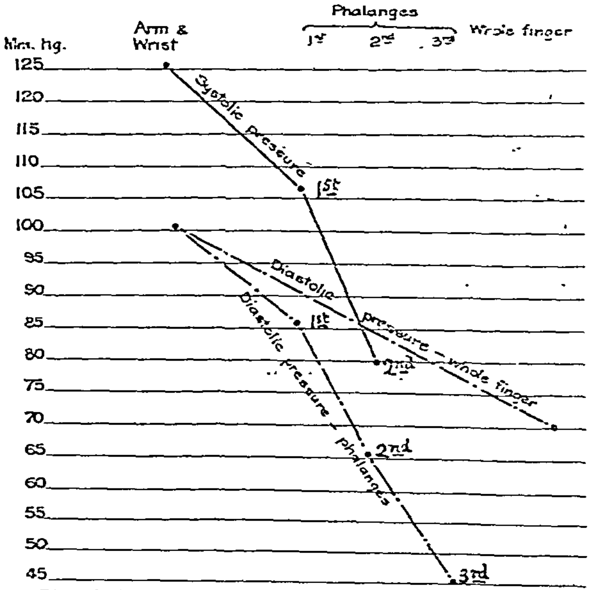
All the disadvantages just mentioned are not, however, encountered in observation on a single artery, such as the radial, ulnar, or temporal. And my experience and that of many others with the hæmodynamometer have shown that accurate readings of the diastolic pressure are furnished by this instrument, for they correspond with those of the mercurial manometer, so that observers who have acquired the necessary skill to use the hæmodynamometer may rely on its readings, and I am persuaded that their confidence in it will be strengthened by using the new manometer. Unfortunately the systolic pressure cannot be correctly furnished by any pressure gauge applied to a single artery. The new instrument, however, supplies this deficiency in the hæmodynamometer. Different structural conditions vitiate the reading of the pressure (systolic) required to close individual arteries whereas they do not interfere with the balancing of the diastolic pressure, the bore of the artery being free;[9] hence it is that the hæmodynamometer is trustworthy for determining the latter pressure only.

THE BLOOD PRESSURE IN DIFFERENT PARTS OF THE ARTERIAL SYSTEM (THE ARM, FOREARM, AND PHALANGES).

At the outset I should remark that the physiological data to which I am about to refer were derived in the first instance from my own circulation, which is normal, the digital portion of it being particularly well suited to demonstration of the distal blood pressure. After confirming them in others I have found that they furnish a trustworthy physiological standard for clinical observation.

As our knowledge of the blood pressure in the different districts of the arterial system in man is not so complete as one could wish, I will, as a contribution to it, adduce a few data showing the relation between the different pressures in the arm, forearm (upper and lower), *and finger (first, second, and third phalanges)*. But for the purpose of this comparison it is necessary to obtain the condition of physiological rest in the circulation—as complete rest as possible; for, as will be shown in the next section of this lecture, a state of circulatory activity, as after the ingestion of food or during and following exercise, disturbs the interrelation of the different pressures. I have found in every normal subject that there are periods during the waking hours, recurring with remarkable persistency, in which we may say that there is a fair degree of uniformity in the activities of the circulation, when the arterial pressure becomes practically constant. It undoubtedly varies within certain limits in different individuals and these limits are not so close as those of temperature, but for each individual it is fairly constant in the different areas. These periods recur, as a rule, quite regularly an hour before each meal when the body is in a state of rest. I have not found any appreciable difference between the arterial pressure (systolic and diastolic) taken from the arm and that taken from the forearm (upper and lower). If the pressure is actually less at the wrist than it is in the arm the reduction is not such as I can with certainty detect. In the arm the first decided drop in the pressure is found at the first phalanx; it is generally about 15 millimetres of mercury (100 millimetres of mercury diastolic in the brachio-radial area falling to 85). The reduction rapidly increases in the second and third phalanges, 50 millimetres of mercury being, as a rule, lost in the ungual part of the finger—the diastolic pressure there being roughly a little less than half that of the brachio-radial region (see Fig. 2). These facts show that the fall in blood pressure which takes place between arteries of intermediate size and the capillaries only becomes quite appreciable in the finer divisions of the arterial system, beyond which it is extremely rapid. It was observed that the systolic pressure diminishes more rapidly than the diastolic (see Fig. 2); in a word, the two pressures approximate more and more as the terminal arteries and arterioles are approached. The low reading obtained from the last phalanx suggests that in this area we are probably approaching the arterio ar or precapillary pressure. Pressure readings from this distal part of the circulation are not, however, always equally available—as, for example, when the fingers are cold, when the pressure falls much lower with feebler pulsations. Dr. A. Waller, applying his digital sphygmograph to the finger-nail, with an air-tight connexion with a mercurial manometer, obtained an approximate pressure of only 20 millimetres of mercury and found that the pulsation was abolished by cold.[10] Probably the higher pressure which I obtain from the last

FIG. 2.



Physiological constant of arterial pressure in brachio-radial (arm and wrist) and digital areas (1st, 2nd, and 3rd phalanges and the whole finger).

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[9] See Pulse Gauging, 1895, and Blood and Blood Pressure, 1901.

[10] Brit. Med. Jour., vol. ii., 1900, p. 840.

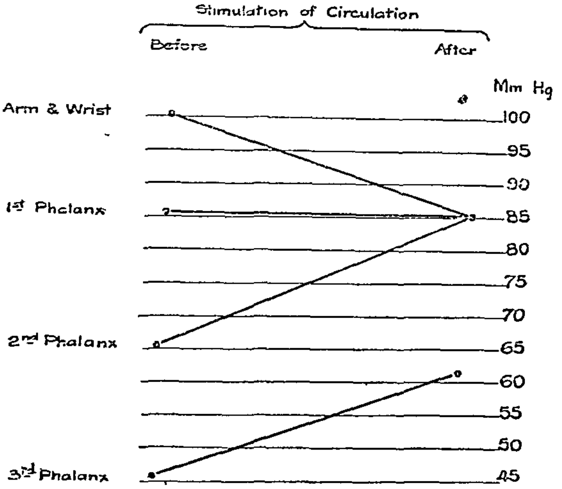
phalanx is due to the inclusion of terminal digital arteries by my finger-stall bag which are distributed outside the ungual area on which the pad of the sphygmograph rests.

THE PHYSIOLOGICAL VARIATIONS OF THE ARTERIAL PRESSURE.

I will first refer to the common features of the pressure variant due to stimulation of the circulatory mechanism, and then briefly to the variations in pressure caused by digestion, exercise, and temperature. According to my observation, when the circulation is thus stimulated, the normal relation which subsists between the intermediate and distal pressures is always altered.

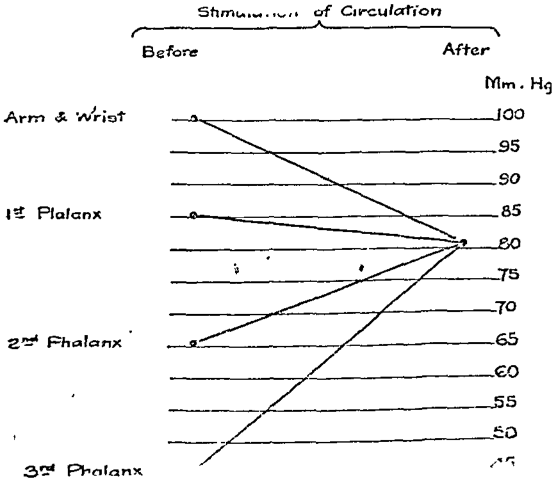
In all cases, except when cold lowers the peripheral pressure, considerable rise of the diastolic pressure takes place in the most distal area—the last phalanx; the pressure of 45 millimetres of mercury becoming, for example, 60, or 65, or even 70 millimetres of mercury or more, the increment varying from 20 to 60 per cent. (Figs. 3, 4, and 5). It has been found that when the distal rise exceeds 30 per cent. the diastolic pressure in the brachio-radial area generally falls and then the pressure tends to be, and it may actually become, uniform from the arm to the finger-tip (Fig. 4). It has frequently been found to be 80 or 85 millimetres of mercury throughout, as after exercise, exposure to heat, and under the influence of vaso-dilators—e.g., nitro-glycerine, the aromatic bodies, &c. A distal rise of 30 per cent. or less may, however, concur with a brachio-radial fall, but when it does not the diastolic pressure of the arm and fore-arm invariably rises and never remains stationary, as after taking small doses of vaso-contractors (Fig. 5). The invariable effect, then, of all these physiological stimuli on the arterial pressure is to produce a large relative rise in the peripheral area of the arterial system, whether the pressure in the intermediate arteries rises moderately or falls.

FIG. 3.



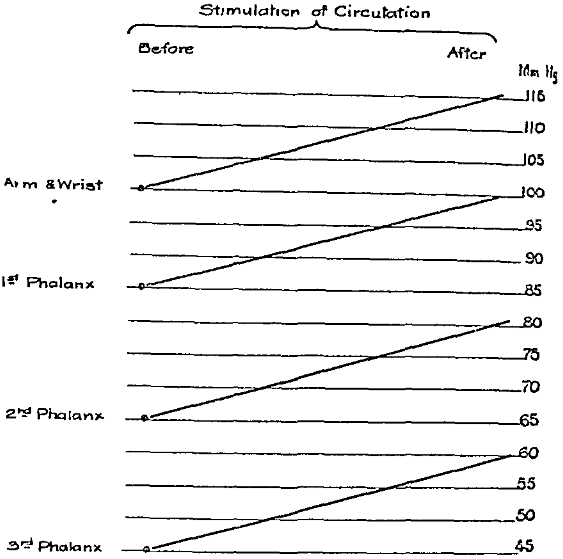
Physiological variant of the arterial pressure (diastolic) in brachio-radial (arm and wrist) and digital (1st, 2nd, and 3rd phalanges) areas when moderate vaso-dilatation takes place.

FIG. 4.



Physiological variant of the arterial pressure (diastolic) in brachio-radial (arm and wrist) and digital (1st, 2nd, and 3rd phalanges) areas when complete dilation takes place.

FIG. 5.



Physiological variant of the arterial pressure (diastolic) in brachio-radial (arm and wrist) and digital (1st, 2nd, and 3rd phalanges) areas when moderate vaso-contraction takes place.

It is quite conceivable how this event in the distal vessels is brought about when the blood pressure falls in the intermediate arteries, for vaso-dilatation will cause the pressure to rise in the peripheral arteries, arterioles, capillaries, and veins. This increment of distal pressure will be all the more pronounced and sustained should the maximum arterial pressure, due to the ventricular contraction, be maintained or, though falling, should be relatively higher than the diastolic pressure. But when the pressure in the peripheral vessels participates in a general rise of arterial blood pressure some factor besides vaso-motor action must come into play, for contraction alone lowers the pressure in the distal vessels. Observation points to cardiac stimulation as that factor, for I have always observed that when the diastolic pressure rises throughout the arterial system (in the digital as well as in the brachio radial area) the systolic pressure rises still more. It is therefore obvious that the lowering effect of physiological vaso-contraction on the distal blood pressure is more than compensated for by augmented ventricular contraction. Is the cardiac stimulation a reflex originating in the vaso-motor system? The two types of normal peripheral increment of blood pressure—viz., from (1) vaso-dilatation only and (2) vaso-contraction *plus* cardiac stimulation—have been followed by the arteriometer which has afforded evidence of radial dilatation in the former case and contraction in the latter.

The ingestion of food.—In the Oliver-Sharpey lectures delivered last year[11] it was shown that the ingestion of food induces a prolonged wave-like rise in the arterial pressure. These recent studies of the circulation have widened this first conception of the effects of meals on the arterial pressure; they have shown that the diastolic arterial pressure in the intermediary arteries (brachio-radial), though generally rising, frequently falls during digestion. But whether it rises or falls the peripheral arterial and the venous pressure show that the capillary pressure invariably rises. When the diastolic arterial pressure falls the systolic may likewise fall, or it may remain unchanged, or it may slightly rise; but when the diastolic pressure rises the systolic invariably rises also and to a higher degree. This varying ratio between the two pressures apparently depends on the vaso-motor tone and reflex ventricular response of the individual. When both arterial pressures rise together it has generally been observed, after the digestive stimulation of the ventricle is over, that the systolic pressure falls somewhat below that observed before the meal, as if this were a reaction fall (a depressor following the pressor effect), which is also generally observed after exercise or other forms of cardiac stimulation. Probably these data throw some light on the discrepancy of results obtained by different physiologists as to the effects of digestion on the arterial pressure.

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[11] THE LANCET, April 30th (p. 1175) and May 7th (p. 1262), 1904.

Exercise.—During moderate exercise both arterial pressures (systolic and diastolic) rise; but on continuing the exercise the systolic maintains its higher level longer than the diastolic, though they both eventually fall—the diastolic being the first to subside below normal. Exercise (even muscular tension for short periods)[12] invariably produces a hypotonic effect on the peripheral vessels, lowering the diastolic pressure in the intermediate and raising it in the distal arteries, the capillaries, and the veins (Fig. 4); and this effect is still more pronounced when the circulatory muscular fibres (centric and peripheral) are reduced in tone.[13]

Temperature.—Warmth (whether local or general) approximates the phalangeal and brachio-radial pressures, while cold produces the contrary effect.

The comparative readings of the digital and brachial pressures should be useful in pharmacological observation (experimental and therapeutical) in man, enabling us to follow the effects of vaso-dilators and vaso-contractors, and should prove to be instructive clinically. They may enable us to directly determine peripheral resistance; as when high and due to vaso-contraction beyond the physiological limit and when low and due to vaso-dilatation—the pressure in the distal phalanx, and in the middle phalanx also, reading absolutely or relatively low in the former case and absolutely high in the latter. For example, a diastolic brachial pressure of above 130 millimetres of mercury is frequently associated with a distal digital pressure of from 15 to 35 (instead of 45) and a brachial pressure of 85 may coexist with a terminal pressure of 60, 65, or 70. When vaso-contraction persists within the upper physiological limit the digital pressures remain continuously higher than normal (above 45) and the tissue lymph lodges or has but a limited variation, as in many cases of chronic goutiness. But when the contraction exceeds that limit the distal digital pressure falls below 45, and tissue lymph fails to be exuded. Digital observation of the arterial pressure alone has not, so far as I can ascertain, proved of much clinical value but when conjoined with the determination of the pressure in the intermediate arteries it should be a useful auxiliary procedure in clinical hæmomanometry.

THE RELATION BETWEEN THE CAPILLARY BLOOD PRESSURE AND THE TISSUE LYMPH CIRCULATION.

Last year I endeavoured to show that there is a demonstrable relation in man between the capillary blood pressure and the exudation and absorption of tissue lymph. The rise and fall of the capillary blood pressure were, however, a matter of inference—a probable inference, it is true—from the simultaneous fluctuations of the venous pressure. Now the data furnished by these observations appear to me to strengthen that inference; for they demonstrate that the blood pressure on the immediate proximal side of the capillaries is raised, as well as that on their distal side, whenever tissue fluid is exuded and that the pressure falls on both sides of them when that fluid ceases to be exuded or is absorbed. In a word, the evidence shows that the streamlets which feed as well as those which drain the capillary lake rise and fall together.

THE NORMAL ARTERIAL PRESSURE.

What is the normal arterial blood pressure in the average healthy subject? Observing all the elementary precautions to secure uniformity of observation—such as selecting the same area of the circulation (e.g., the brachio-radial), the proper time of day (if possible an hour or so before meals), the same posture (avoiding a lateral one), and the gravity position of heart level—it will be found that the normal arterial pressure in adults is less variable than is usually believed, a diastolic pressure of from 95 to 100 or perhaps 105 and a systolic pressure of from 105 to 130 millimetres of mercury being the figures commonly met with. A good average normal reading in a young or middle-aged adult may be taken as $\frac{\text{95–100 diastolic}}{\text{115–20 systolic}}$, individual variations being included in the range just indicated. When, however, the causes of physiological disturbance are disregarded a wider margin must be given for the normal variant—e.g., $\frac{\text{80–120 diastolic}}{\text{90–150 systolic}}$. In women the pressures are generally about 10 per cent. less than in men; in children they are as a rule near the lower, and in the elderly near the upper, normal limit.

Probably the slightly higher reading—especially of the systolic pressure—in subjects over 50 or 55 is due to advancing diminution of elasticity of the large arteries (the circulatory work being thrown more and more on to the ventricle) as well as to increased peripheral resistance. The arterial pressure does not necessarily rise with age; I have, for example, frequently met with very moderate readings in normal subjects of 75, 80, 85, and 90. When the arterial pressure touches the upper normal limit or rises above it, it responds more decidedly to physiological stimulation (e.g., from digestion, exercise, &c.) than when the pressure is lower. Hence the pressure is, as a rule, more variable in the elderly than in the young. A persistent systolic pressure of over 145 millimetres taken within an hour before a meal should be looked upon as suspicious and requiring watching, especially when the diastolic pressure is raised from 10 to 20 millimetres. In subjects of over 50 or 55 years of age such pressures should not be passed by in a routine way as normal. If possible, they should be reduced by treatment, as they are apt slowly to increase in a latent way, year by year, and then may suddenly declare themselves in cerebral hæmorrhage or may terminate in cardiac failure (dilatation, &c.).

On the other hand, it is important to distinguish between unusually low normal pressures and pressures reduced by failure in vaso-motor tone, producing splanchnic stasis. For some years I have found the effect on the arterial pressure of abdominal compression (either by the hand or by a weight, e.g., a bag containing 14 pounds of shot) useful in deciding between these two causes of low blood pressure; for in subjects of normal vaso-motor tone the abdominal compression does not raise the arterial pressure, whereas when the tone is reduced it raises it to the normal level, or even above that level. The modifying influence of temperature (the hypotonic effect of heat and the hypertonic effect of cold) on the blood pressure should be kept in mind. According to my observation, warm weather may let down the brachial pressure (systolic and diastolic) from 10 to even 20 millimetres and raise the phalangeal pressures to a corresponding degree, and cold weather may raise the former and lower the latter to a similar extent.

Before an observer can be fairly well assured as to whether the arterial pressure is raised or not, he should ascertain whether the alteration in pressure is persistent or only temporary, and should sedulously exclude nervous excitement in the subject. The latter precaution is of prime importance; on account of it nothing in medical practice requires more tact and circumspection than the reading of the arterial pressure. I suspect that some of the high readings recorded are due to temporary rises due to nervous stimulation of the heart and vaso-motor system; and it has interested me to observe how often I have proved that the arterial pressure may be impressed by the state of the nerves when neither I nor the patient suspected that influence. High readings—e.g., from 160 to 180 diastolic and 250 systolic—should be accepted with some hesitancy; and the observer should always remember that when the peripheral resistance is increased the influence of nervous excitement, however slight, becomes much more pronounced than when the peripheral outflow is normal or subnormal.

THE PHYSIOLOGICAL RELATION BETWEEN THE SYSTOLIC AND DIASTOLIC PRESSURES.

At the pressure-constant periods I have found that the difference between the pressures varies in different individuals from 10 to 15, 20, 25, 30, 35, or 40 millimetres (the average being about 25 millimetres), the smaller differences being present in subjects below middle age and especially in children and in women, and the larger after middle age and especially in elderly subjects (over 60 years). The difference is remarkably uniform in the same individual but it is much less so during pressure-variable periods. As a rule, with vaso-contraction the difference widens, and with vaso-dilatation, while the two pressures usually fall together, they tend to approximate somewhat. A certain independency is not infrequently manifested, however, in the behaviour of the systolic pressure.

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[12] Just lately M. C. Oddo (using Potain's sphygmomanometer) discovered a marked fall in the systolic arterial pressure after slight effort in convalescents, which he terms the "hypotension of effort." (THE LANCET, July 8th, 1905, p. 93.)

[13] Ibid.

THE RELATIVE CLINICAL VALUE OF THE SYSTOLIC AND DIASTOLIC PRESSURES.

The systolic pressure denotes the force of ventricular contraction and the diastolic pressure is one of our best guides in regard to the peripheral outflow—its freedom or otherwise. Therefore the specific indication of one pressure (systolic) is centric and that of the other is distal. Just now, it seems to me, there is a disposition to exalt somewhat unduly the clinical importance of the systolic pressure and proportionately to depreciate that of the diastolic, and sometimes the teaching would have us to disregard entirely the reading of the latter. Doubtless the comparative ease with which the systolic pressure can be read and the supposed greater uniformity of it have largely contributed to this attitude, which has been further prompted by the recent employment of this facile method of gauging the blood pressure while the patient is submitted to surgical procedures under anæsthetics.[14] But in medicine we cannot surely afford to discard the reading of the diastolic pressure, for the variations in peripheral resistance are of as great significance to the physician as are those of the cardiac centre. Long and well-attested experience teaches us that the reading of the diastolic pressure affords us valuable aid in judging of the state of the vaso-motor system and of the peripheral vessels and in suggesting lines of treatment. Moreover, that experience likewise teaches us that the persistent raising of the diastolic pressure increases enormously *the continuous strain on the arterial wall and the heart*, by reducing more and more their normal diastolic rest; thus favouring the development of all the consequents of that strain. A high systolic pressure is surely robbed of much of its power to injure the arterial wall when the diastolic pressure is low, as in aortic regurgitation, and when the peripheral circulation is open and free, as during exercise. Hence the trite remark of Sir Samuel Wilks: "I was quite of opinion that apoplexy or cerebral hæmorrhage occurred more frequently when the patient was quiet at home rather than when out of doors, employed at his avocation. ...... When we consider the number of persons engaged in their ordinary avocations who are the subjects of various diseases of the heart, of aneurysm, and decay of the blood vessels, ever threatening rupture, we might imagine they were exposing themselves to the dangers which would lead to the final catastrophe; but this is not the case, for it is generally when they are quiet at home that these events mostly happen."[15] We are too apt to forget that in muscular action the strain on the arterial system is relieved by the rapid transfer of blood through the open periphery of the circulation which it induces and that it thus provides a safe and natural outlet of the arterial pressure when unduly raised. Therefore it seems to me that in medical cases both readings of the arterial pressure, diastolic as well as systolic, are of at least equal importance and should be taken together.

THE CONTROL OF BLOOD PRESSURE BY PHYSIOLOGICAL PROCEDURES AND PRODUCTS.

One of the least encouraging aspects of the study of hæmomanometry is our limited power of controlling blood pressure by ordinary remedies. Vaso-tonics are useful enough as adjuncts to the more important means of improving the general health and the vaso-motor and muscle tone. But our depressor remedies, such as potassium iodide, salicylates, nitro-glycerine, &c., are somewhat disappointing when continued for some time. It is true they are often most useful in tiding our patients over threatening periods of intermittent increments of arterial pressure or in securing for a time some degree of diastolic rest to the heart and arteries when the pressure is persistently high, but their effect is temporary and they cannot well be persisted in for lengthened periods without impairing the health. Hence it is that during the last few years the profession has turned to physiology for aid in controlling the blood pressure more effectually and more enduringly than can be secured by drugs. We are practising the movement cures and allied physiological methods for modulating the blood pressure. And the results have not been disappointing. It is well known that muscular movement (whether active or passive) signifies transference of blood to the muscles and that the blood-vessels richly distributed through the muscles are capable of holding a large portion of the blood of the body. From these two facts it is easy to conceive how considerable is the power which the muscles possess over the arterial blood pressure. I just now pointed out to you that the various physiological stimuli (and among them muscular action is the most powerful) call into play a mechanism by which blood is transferred from the more central to the peripheral parts of the circulation—in a word, from the apex to the base of the triangle, which figures to us the bed of the circulation. This is the physiological explanation of all our movement cures. All these therapeutic methods (massage, regulated and resisted exercises, tension exercises, electric excitation of muscles, passive movements, &c.), with or without the valuable adjunct of temperature in the form of bathing, go far beyond any drugs in restoring the beautiful mechanism by which in all healthy subjects blood is rhythmically flushed through the periphery of the circulation where all the metabolic commerce of the body is transacted, the arteries and veins being mere conduits. But may we not go further than this? Some observations (physiological and clinical) during the past two years have encouraged me to hope that the continuous administration of certain physiological products may afford more effectual control over the arterial blood pressure than by other means. Among the moderators of that pressure the members of the benzoic or aromatic series (such as hippurates, benzoates, cinnamates, coumarates, &c., and their derivates) have more particularly interested me. The blood pressure (diastolic and systolic) in the intermediate and large arteries and in the ventricle is raised so long as the base of the arterial triangle is narrowed and can only be lowered by enlarging that base. Hence it is that vaso-dilators first let down the diastolic pressure and then the systolic. My observations lead me to believe that in the aromatic group of bodies will be found some persistent vaso-dilators which may be taken for lengthened periods without impairment of their dilating property and without harm to the body—that class of remedy which the physician regards as ideal for the effectual control of hypertension of the peripheral arteries. The allied oxybenzoic series, to which salicylic acid belongs, also contains members which should be investigated from the blood pressure point of view. My experiments in this laboratory are in progress and I trust later to have obtained sufficiently corroborative evidence from animals in support of my observations on man.

The aromatic bodies are widely distributed throughout the vegetable kingdom; and we know that a vegetarian diet favours the lowering of the arterial pressure. It is just possible that this effect of vegetables—especially green vegetables—largely depends on the presence of these substances; if so, may it not be possible to secure the advantages of a vegetarian diet on the circulation by prescribing small doses of members of the aromatic series, while a more generous supply of nourishment may be permitted than can be obtained from vegetables only? This study of the blood pressure in man suggests that clinical hæmomanometry should be perused on more comprehensive lines than hitherto; for it is obvious that when all the available pressures (intermediate and distal, arterial and venous) are taken the data obtained are more likely to be consistent and trustworthy than when observation is made on one particular area—e.g., brachial or digital.

[Dr. Oliver demonstrated the use of the hæmomanometer at the close of the lecture. He showed how the instrument should be used as a companion to the finger in gauging the pulse and the blood pressure, the arterial pressure (diastolic and systolic) being taken from the arm, forearm, thigh, leg, and the phalanges (first, second, and third) and the venous pressure from the hand, &c., at the same time pointing out the various precautions to be observed. He also indicated a simple and time-saving method by which the diastolic pressure may be correctly taken by the instrument without circular compression of the limb. These and other practical details will appear in the reprint of this lecture.]

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[14] Mr. J. P. L. Mummery's recent Hunterian Lectures (THE LANCET, March 18th (p. 695) and 25th (p. 776), and April 1st (p. 846), 1905) show how valuable manometric observation of the blood pressure may be in surgical work.

[15] Brit. Med. Jour., vol. i., 1905, p. 968.

The Wightman Lecture

ON

SOME OF THE NEUROSES OF EARLY LIFE.

Delivered before the Society for the Study of Disease in Children on May 19th, 1905,

BY HENRY ASHBY, M.D. LOND., F.R.C.P. LOND.,
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MR. PRESIDENT AND GENTLEMEN,—In these days of lectures and addresses, to say nothing of the intense activity displayed in all departments of medicine, it is not easy for a lecturer to find an untrodden path or feel that he can add anything to the common stock of knowledge. I must crave your indulgence if—in delivering the address which your council in its goodness has imposed on me—I traverse some rather open and well-known ground.

Important contributions to our knowledge of the neuroses of early life have been made in this country by such well-known observers as Gee, Warner, Shuttleworth, John Thomson, Still, and many others; while in the allied domain of social psychology the names of Romanes, Sully, and Mark Baldwin will at once suggest themselves. To all these writers I must express my deep indebtedness. It is not easy to define the limits of a neurosis; but the task which I have set before myself to-day is to speak of the functional disorders due to a failure of coördination or a backward development of the lower nerve centres and of the minor mental abnormalities occurring during early life due to a lack of inhibition or a morbid sensitiveness of the higher level centres. It need hardly be said that I am not attempting to cover the whole ground occupied by the neuroses and psychoses of early life, for to sum up all the moods and tempers of the twentieth-century child would require a volume. I must be content to pass in review only a few and perhaps be deemed guilty of omitting some of the most important.

There is some difficulty attending the use of the term "functional disorder"; what one may call a "functional disorder" or "neurosis," another with good cause may say "what you call a 'neurosis' is only an exaggeration of what is seen in every child when over-excited, or tired, or in ill-health." Or, on the other hand, a neurosis such as eclampsia may be due to some organic change in the nerve cells or some focal lesion. I must risk such criticism, bearing in mind that there are no hard lines in the classification of disease and great comfort in taking refuge in the word "borderland."

Since Darwin, "variation" has been looked upon as one of the broadest facts of biology; differences of disposition, temperament, and character are met with in members of every family. It is, however, I think, a matter of common experience that neurotic parents have neurotic children. Heredity does not necessarily show itself in fully developed disease at birth or in every member of a family; an imbecile woman does not necessarily bring forth an acephalic fœtus or an epileptic or insane father an imbecile. There is, however, a strong probability that if a family results from the union of neurotics or degenerates some members of that family will show a tendency to unstable nerve centres or mental feebleness. There is no strain through the generations so strong and persistent as the tendency to unstable nerves and mental degeneration. In nature the weakly and unstable are weeded out before they have the chance of breeding. In our highly organised and philanthropic civilisation the weaklings and neurotics are tided over their infancy by thousands and preserved till manhood. Social conditions rather than natural laws regulate the union of the sexes.

Are we more neurotic than our forefathers who followed the tail of the plough and lived upon the produce of their land? Have not the unrest and excitement of these later days told not only upon men and women but also on their offspring? In our large cities we are beginning to discover a large accumulation of "by-products" or "*Nebenconsequenzen*" in the shape of the criminal, the pauper, the epileptic, the imbecile, and the insane, with the prospect at no distant date, as several writers have pointed out, of one half of the population having to nurse, to cherish, and to support the other half. The individual born to-day repeats the gains of former generations, the individual gains becoming race gains; but is it not equally true that in the long run individual degeneration becomes race degeneration? The fertilised ovum has implanted on it not only the characteristics of races, families, and individuals, but it has been modified by climate, nutrition, education, and toxins. It is "the heir of all the ages in the foremost files of time." Well did the Egyptian write over the Temple of Isis: "I am whatsoever has been, whatsoever is, and whatsoever shall be, and the veil on my face no mortal hand has ever raised." In addition to inherited tendencies there is the influence of nutrition and environment during the period of intra-uterine life. During the period when nerve and nerve cell are being shaped out of germinal plasm the progress of development cannot be indifferent to surroundings.

What are the essential features or characteristics of a neurosis or psychosis in a child? In attempting to answer this question we must bear in mind both age and state of health. What may be normal in a child two or three years of age may be very abnormal in a child ten years of age. Then ill-health, over-indulgence, and bad home influence are very apt to bring out the unlovable and "seamy" side of child life. Among the characteristics we may note: 1. Want of coördination in muscular movements both reflex and voluntary. 2. Hyperæsthesia of motor and sensory centres; a slight stimulus provokes a strong reaction out of all proportion to its strength. 3. Failure of inhibitory control over actions or reflex movements. 4. Exaggerated conscientiousness and contrariness. 5. Certain morbid habits not seen in normal children. 6. Tendency to *petit mal* and hysterical attacks. That there is overlapping in these characters is certain, but overlapping is not easily avoided.

In coming to close quarters with the neuroses of early life let me first of all refer to some of those that are very early in evidence and which perhaps depend upon developmental causes. The respiratory centres and also the deglutition centre must be in a condition of functional activity if life is to be maintained, but at times we find that the muscular movements which depend upon these centres are not perfectly performed. The movements depend upon muscle stimulations and inhibitions, which must take place in orderly and regular manner: there must be perfect timing or else there is a hitch. Presumably the movements are controlled by a superintending coördinating centre which is in charge. In congenital stridor there is apparently a failure of inhibition or an active stimulation of the adductors of the cords and the expiratory muscles during inspiration, which is most in evidence during excitement or crying. The cords are more or less approximated during inspiration and stridor results. As the infant grows older the stridulous sound is less and perhaps is only present when deep inspirations are taken as in crying. As a rule infants who are thus affected are perfectly healthy and normal in other ways and the stridor disappears during the second year or before. Infantile stridor is, however, in some cases associated with other defects. In one of my cases the infant had very marked stridor and also a posterior meningocele. Death occurred at five weeks of age during a severe spasm. At the post-mortem examination the naso-pharynx and larynx were perfectly normal. In another case stridor was noticed at birth and later it became clear that the infant had also cerebral diplegia and mental defect. The child had a habit of letting off superfluous energy when excited by forcible inspirations and expirations accompanied by loud stridor. She is now 12 years of age and still has the same habit of forced respirations when she meets a stranger, but years ago the stridor ceased. In another case, that of a boy ten months old, there is marked stridor at times which has been present from birth; this infant has an older brother who suffers from diplegia and athetosis. In both these cases of diplegia I believe the cause was developmental and not due to a lesion at birth. It is no doubt true that in some cases nasal obstruction may give rise to stridor or snoring as suggested by Dr. Eustace Smith, but I think, and, indeed, there is post-mortem evidence to show, that the association is not a necessary one. Excitement and very likely also bronchial and laryngeal catarrh accentuate the stridor.

Deglutition is sometimes performed with difficulty in newly born infants and in young children. Any nasal obstruction—such, for instance, as is present in congenital syphilis—will render swallowing difficult but in other cases there is nothing to explain the difficulty except a failure of coördination. It is not always well marked in breast-fed infants as they cannot draw much into the mouth at a time but mothers will notice the delay in swallowing. The difficulty is most marked when bottle-fed and when the infant is in a great hurry for his food. There are choking and spluttering unless the act of swallowing is performed slowly and with great deliberation. The fluid is "gargled" in the throat instead of being swallowed but there is no necessary return of fluids through the nose as in paresis of the soft palate. Feeding with a bottle is often so troublesome that a teaspoon is resorted to and the mother very soon gives the infant sops. One girl I have watched is now three years old and still has much difficulty with fluids, especially when thirsty and in a hurry to quench her thirst. She has no difficulty with sops but can only get down a few tablespoonfuls of fluid in the day.

The readiness and ease with which infants vomit are well known, the vomiting reflex being always on the *qui vive* and easily excited but in some infants this is very marked. After making every allowance for overfeeding and improper food a certain class remains in which this constant vomiting is due to an over-sensitive or uncontrolled action of the vomiting centre and we can hardly do otherwise than look upon this as a neurosis. Nocturnal bed wetting in children who have long passed babyhood and who have never managed to pass a night in their lives without micturating during sleep strongly suggests a developmental failure of the controlling nerve centres which coördinate micturition. There is an uncontrolled action of the urine-expelling mechanism, or a failure to inhibit.

Head shaking and nodding are also coördination neuroses associated with purposive or instinctive movements which become confirmed into a habit. Attempts to hold up the head and to turn it from side to side or up and down in order to obtain a better view of surrounding objects begin in normal children about the third or fourth month of life. These head movements are necessarily associated with movements of the eyes. They are not voluntary movements in the strict sense, as they are not the result of a clearly pictured idea or revived memory image, but are rather "suggestion reflexes"—i.e., reflexes which come through consciousness.[1] These head-shaking movements may be noted as early as the third or fourth month with the first attempts to hold up the head and to look about, but the infant may not be brought for medical advice for some months after this. Instead of the muscles which move the head and eyes being stimulated and inhibited in a regular and orderly manner the action of the nerve centres is intermittent and produces in addition to the purposive movements constant jerky ones. The tremor becomes more marked, especially the nystagmus when the infant is intently gazing at some attractive object. Probably habit plays a prominent part in confirming the movements. As time goes on and the infant gets into better health and exercises more and more voluntary control the movements gradually cease. These movements are chiefly seen in infants and children of low vitality, and many of them are rickety in more or less degree, but I have not seen these movements in cases of severe rickets. Sometimes they occur for the first time after an illness, such as pneumonia, and in one case related to me nystagmus came on for the first time after an operation for the cure of a hernia. Apparently the stammering, which is likely to come on during the second or third year, is essentially very much on a par with head shaking and is apt to become confirmed by habit.

Another group of neuroses of the lower neurons includes such diseases as spasmodic asthma, recurring fever, recurring vomiting, and perhaps diabetes. All of these are especially apt to occur in neurotic families and give evidence of their presence early in life. The type of spasmodic asthma seen during infancy is usually Henoch's gastric type but asthma secondary to a bronchial catarrh or nasal irritation is also seen. A typical case of asthma in an infant was shown at this society a year or two ago by Dr. W. Ewart and I have recently seen one (with Dr. A. A. Mumford) in which the asthmatic attacks began at the age of eight weeks. The exciting cause appeared to be difficulty of digestion beginning with weaning. The father had suffered from spasmodic asthma as a boy and the infant's mother's brother was also an asthmatic. Between the attacks the infant was quite comfortable, while during the attacks the chest was markedly drawn in at the bases and bulged out at the apices and there was great distress from the dyspnœa. There was no evidence of enlarged thymus. In another case I saw during infancy distension of the stomach with gas preceded the attack which was relieved when the distension passed away with the dispersion of the gas. This patient is now over 20 years of age and has suffered from attacks of asthma all his life. The attacks seem to be excited by some irritation of the terminations of the vagus nerve.

Recurring fever also is apt to occur in members of a neurotic family and to commence in early life. It is well known that in neurotic children the temperature goes up from slight causes or without any apparent cause. In some cases, as is well known, these fever attacks recur again and again at intervals of a few months without being associated with any common or uncommon complaint. The boy's temperature runs up to 104° or 105° F. without any sign or symptom in the chest or elsewhere, he seems fairly comfortable and his appetite is good, the fever continues for some days or a week or more and disappears, leaving him weak and pale for awhile. No doubt in some cases the exciting causes are overfeeding and an accumulation of by-products. These cases are certainly apt to occur in neurotic families and perhaps also tuberculous families, and it is important to note that Dr. G. H. Savage has noticed some cases of mental breakdown in young adults who have suffered from these recurring attacks of high fever.

Let us pass now to some of the minor mental abnormalities of early life which are associated chiefly with the higher level centres. It is not difficult to recognise very early in life that some infants are much more easily aroused than others and are far more sensitive to impressions. All babies cry when they are hungry or have internal discomforts and, speaking generally, the crying reflex is in good order during infancy, but some infants utilise it much more than others.

We all know the neurotic infant: he is a bad sleeper, he is awake half the night, he wants a lot of rocking or walking about, the slightest noise or discomfort awakes him. He is very apt in consequence to be over-fed, as he has no compunction in making his wants known, and gaseous distension of the abdomen and colic aggravate his normally hyperæsthetic disposition. He is early subject to fear, has an exaggerated dread of falling, and starts and clings to his nurse if swayed about. Many of these infants, as I have already said, are troublesome vomiters. Excitement of any sort may start the vomiting reflex. One small girl I knew used to suffer from nausea when the bells of a church close by began to ring for evening service. When about two years old she used to say "Church bells make baby sick," and at times she not only had nausea but vomited. In later years she suffered from attacks of migraine and hysterical half-blindness. She could read the first half of a two-syllable word but not the last half while the headache was present. The same class of child shows perhaps excessive timidity all through infancy and childhood. Every sudden sound makes them start, whether it is the rattle of a spoon or the barking of a dog. At the sight of a stranger or an animal they will turn white and cover up their faces. They have a perfect horror of being stared at and find refuge in a prolonged cry. They dread the sight of the medical attendant who probably reciprocates their feelings. As the child becomes older the timidity becomes a perfect nightmare. They are always seeing uncanny things and have an unwavering belief in ghosts and bogies. R. L. Stevenson must have been thinking of his own childhood when he wrote:

> "The shadow of the balusters, the shadow of the lamp,
> The shadow of the child that goes to bed,
> All the wicked shadows coming tramp, tramp, tramp,
> With the black night overhead."

If daylight relieves them of their fears they return with unfailing regularity with the evening. When they go to bed the room must be lighted and the door open till confidence is in part restored by the nurse coming to bed.

It is for the most part the same class of child who has dreams of the tragic sort. The child during the day has been frightened by dogs or stories about rats or has made the acquaintance of strange beasts in picture books. A marked impression has been made on the visual centres and the images come back during sleep, associated with the curtains or surroundings of the rooms. In rarer cases the hallucinations occur during the day and in the waking hours or in a well-lighted room at night before going to sleep. The child sees animals under the bed or table and will point them out to her mother, absolutely believing in their existence. Or she will call up her mother at night and describe ducks which she has seen in the park in the morning waddling about on the walls of the room.

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[1] See Mental Development in the Child and the Race, Mark Baldwin, p. 104.

In some children there is, perhaps, not only hypersensitiveness, which shows itself in bitter tears at trifling causes, but a contrariness which makes them difficult to manage. There comes a period in many children's lives when they develop a certain marked determination to disobedience and take apparently the greatest pleasure in doing the opposite to instructions. In some neurotic children this phase becomes almost unbearable. They are spoilt by their parents, who laugh at their odd ways or scold them for the same thing next day, but they generally manage to get the upper hand and to rule the household with a rod of iron.

In another class of child we find a want of control not so much over tempers but over desires and a failure in the growth of an educated conscience. The child emerging from infancy wants every toy he sees, regardless of the rights of others. But as intelligence dawns he gradually shapes his actions in harmony with his surroundings and conforms to the unwritten laws of the society in which he is reared. The child with feeble powers of control gratifies his desires without any regard to others and without any inward sense of shame and will purloin toys, money, jewellery, anything that attracts often in a clever way. Such children are often bright and clever and without a stain on their characters until it is found out that they are habitually stealing from their playmates. They will confess up to just so much as they are obliged and will explain that they cannot help it. In the worst and confirmed class of case they are moral imbeciles and amongst the worst of life's failures.

In yet another class instead of a want of controlling power there is an excessive inhibition over action and desire. These children are too good and very sensitive to reproof. They have a morbid fear of being late at school and lie awake half the night from anxiety lest they should fail to know their lesson next day. They get, perhaps, more morbid as time goes on, accuse themselves of faults never committed, surreptitiously take off marks given them at school by their teachers, are anxious to be punished for sins never committed, or to sacrifice themselves for the good of others.

What is likely to be the future of these erratic and abnormal children? Much depends, no doubt, upon heredity but who can doubt the influence on their career of environment during early life? It is certain that an over-sensitive child will ill withstand the world's buffetings and has more offended feelings in store than fall to the lot of ordinary mortals. But assuming they are carefully tended and there is no evidence of *petit mal* or anything morbid the future is hopeful enough. There is, however, always the fear that a breakdown may come after puberty or during the strain of early manhood or womanhood. In this class we are likely to find hysteria, migraine, and insanity.

The contrary boy is, on the whole, a promising boy if placed under reasonable control. As heretic and reformer he has played his part in the world's history. Some of the ablest and most successful men I know, whose only fault is a weakness for argument, I feel sure once walked through all the puddles on the highway and defied their nurse at bedtime. In those who exhibit a want of control over their desires we have the making of criminals—or shall we say successful business men?—while those with over-sensitive and exaggerated self-control may show in later years the highest forms of self-abnegation, or if they lose their mental balance are only likely to pass through religious excitement to hopeless insanity.

While an over-sensitive nervous system during early life may be accepted as a warning signal, a condition of the senses and feelings which can be described as morbid is at least suggestive of something worse. Among these morbid phenomena may be mentioned the masturbation habit and the dirt-eating habit, while a tendency to eclampsia, marked destructiveness, impulses to scratch and bite, and cruelty to animals may also, perhaps, be included among morbid habits. All through infancy, movements, whether simple reflexes or "suggestion" reflexes in which the stimulation comes through consciousness, tend to repeat themselves when accompanied by a pleasurable sensation and a habit becomes established.

The masturbation habit is not uncommon both in boys and girls as early as the sixth or seventh month of life. Apparently it takes its origin in a hyperæsthetic state of the pudendal nerves; certain instinctive movements follow which give satisfaction and a habit becomes formed. This is seemingly on a par with the teat-sucking or thumb-sucking habit. When hungry or in discomfort the thumb or dummy teat finds its way to the mouth, gives satisfaction, and distracts from the discomfort; this satisfaction is intensified by the sucking movement and a habit is formed which goes on day and night. While both habits are bad it is certain the masturbation habit is doubly so and points to a perverted state of the nervous system. The habit appears more persistent in boys than in girls but this may be, as Dr. J. Thomson has suggested to me, that mothers and nurses discover the habit in boys but not in girls. The infant will cross her legs, work them vigorously, with flexion and extension of the hips, or sit in a chair swaying to and fro till almost exhausted and the perspiration breaks out. Similar movements may go on at night when half asleep. The habit can be broken by a good nurse with a strong personality and persistence; careful attention to health is, of course, necessary. Circumcision may be necessary in boys, though in one case coming under notice masturbation began for the first time shortly after circumcision. Too much need not be made of this habit, especially during infancy, nor need we attempt to judge the morality of the infant by the standard of the older child or adult. He is, after all, only the "raw material of morality."[2]

The dirt-eating habit is another instance of a perverted morbid taste which passes into a habit and may be seen during the first year or later. In its lighter forms it is not uncommon but always uncanny. Perhaps the commonest form of pica consists in picking blankets and swallowing the wool or gnawing clothes; this, perhaps, is associated with strange tastes as regards food and a liking for nauseous medicine. As soon as the child has learned to crawl the range of his depredations becomes more extended and various queer objects are requisitioned for dietetic purposes: plaster from the walls, cinders, bits of paper, slate pencils, with perhaps a special predilection for licking the fender or the blacking off boots. Taken by itself, perhaps, dirt-eating does not mean much but as it is so frequently associated with imbecility and insanity it suggests an abnormal condition of the nervous system. In otherwise normal children the habit is gradually broken as time goes on. No doubt the tendency to imitate which all healthy children acquire and a feeling of shame at practising baby ways help in the way of reform. If, however, as the child grows older he continues to show morbid tastes as regard queer things and if this is associated with other abnormal signs or *petit mal* the future is not so hopeful. Many of these dirt-eating children are sallow and unhealthy looking, suffer from diarrhœa, and all sorts of articles which they have swallowed make their appearance in their stools.

Another habit, more or less morbid, which develops at times in neurotic infants is a trick of suddenly digging their nails into the hands or face of their nurse or anyone who picks them up. It comes too early in life to be described as viciousness; it is rather an impulse which becomes a habit, the child deriving pleasure from noticing the consternation it produces. In most cases the habit is gradually broken as the child grows older. On the other hand, children who are more or less mentally abnormal or weak retain some such habits for years. They may be really dangerous in their ways and quite unfit to play with other children and get a bad character as playmates. The same heedlessness may be shown in their treatment of dogs and other domestic animals; they seem devoid of sympathy and heedless of pain. Such children are given to the masturbation habit and not infrequently suffer from *petit mal*. Their future is none too promising.

Time will not permit of any long reference to the various forms of major and minor epilepsy which occur in children. During early life we are constantly reminded of the close relation which exists between infantile convulsions, hysteria, and the various forms of epilepsy. We see in children forms of slight fits in which there is no complete loss of consciousness, a momentary "faint," a stumbling when at play, or some coördinated movement, such as making grimaces, getting up and sitting down again, which appear at first to the parents as being only "tricks." They might pass for such were there not a temporary pallor, a dazed look, or perhaps at times a real and undoubted convulsion. These minor fits are often more or less under the control of the individual; a sharp word or a shake will ward them off. They tend to grow worse if much notice is paid to them and the child thinks that her fits are a source of interest to the family circle. They tend to cure if treated with wholesome neglect, a scolding, and cold water There is always the fear that they may be really epileptic or drift into a condition in which epilepsy alternates with hysteria. Such attacks are closely allied to epilepsy and occur in families in which some member is undoubtedly epileptic but differ in their type from typical epilepsy inasmuch as there is no complete loss of consciousness, the movements are purposive or coördinated and they are more under the control of the will.

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[2] See Studies of Childhood, Sully, p. 229.

I am inclined to think that such attacks as I have described tend to get well and the prognosis is much better than in typical epileptic seizures. Let me make perfectly clear that the bad habits and bad ways which I have described, if occurring in otherwise normal children, need not give rise to any great anxiety if they are accepted as warning signals. If, however, they persist far longer than the period of infancy, or when there is a combination of morbid habits or there is any sign of mental feebleness, the future must be regarded as uncertain. Epileptic seizures, however slight, if associated with destructiveness or mental backwardness, are anything but reassuring symptoms as regards the future.

I have already referred to the fact that during intra-uterine life both heredity and environment help to give shape to the human organism. During infancy we have hereditary influences still in the ascendant, but in addition to these we have the added influence of personality and training. The brain trebles in weight during the first year of life and continues to increase with the body weight, and who can doubt that as the nerve centres are being perfected and the nerve paths opened up the influences brought to bear on the individual will materially help to mould the character and shape the future life. "Very early in life," to quote Baldwin, "the infant responds to suggestions of personality. As early as the second month it distinguishes its mother or nurse's touch in the dark. He learns characteristic methods of holding, taking up, patting, and adapts itself to the personal varieties. This is quite a different thing from the child's behaviour towards things which are not persons. I think this is the child's first step towards a sense of the qualities which distinguish persons."[3] The nurse puts the infant off to sleep when no one else can, soothes and quiets him when in discomfort, and appeases him when in fractious mood. During the first few months, when the infant is still in the instinctive stage, the formation of habits begins. In the dim consciousness of these early days he is a creature of habit. The infant easily falls into serviceable or bad or morbid habits. Pleasures and pains lead to motor discharges or instinctive movements, and movements once started tend to become repeated or stereotyped.

It is clear beyond doubt that the personality of the mother or nurse counts for much during the earliest months; the intelligent nurse can form good habits in feeding, care, and hygiene, and break up bad ones, when the careless nurse will absolutely fail or the weak mother utterly despair. When the infant passes into the stage of intelligence or conscious imitation, personality counts infinitely more. The child is made up of two selves, the self of habit and the self of accommodation.[4] The self of habit and hereditary tendencies is the self which dominates the weaker vessel with which he comes in contact. It is the self which he "ejects" into the younger children, the weakling nurse, and the grandmother. He shows on this side the goodness or badness of his breed and education. The accommodating self is the self that learns, that imitates, that is influenced by the stronger character around him, and which he absorbs and transfers to his habitual self. It is the business of training and education to influence the accommodating self. The child finds himself stimulated to control his impulses and his desires by conforming to the will of a stronger and greater personality.

How much of the ultimate result, whether the training and environment be good or bad, depends upon hereditary influences we all must admit. But there are few children indeed of normal intelligence that will not be gradually brought under the influence of those with whom they come in contact. Much depends upon heredity and much on parents. How many are equal to the task? I will not say hard things of the class of parent to whom the nursery is an unexplored country and who give to billiards and bridge what was meant for mankind; rather let me insist on the harm which is done by devoted parents in the direction of over-care and over-indulgence. Every intelligent parent recognises the evils of carelessness; perhaps few think of the evils wrought to the infant or child that is never allowed to lead a natural life and is protected from every wind that blows. Over-anxiety and over-care make a bad school for neurotic children for learning self-restraint and self-control. The child quickly accepts the situation that he is the centre round which all the household moves. He soon learns that he must not be allowed to cry and cry he does till he gets what he wants. With the laudable desire to give pleasure to the children and make them happy they are over-indulged in every luxury and every excitement that appeal to the emotional side of their nature. How great the harm done to the present-day neurotic child by a life of excitement no mortal man can assess. A world-wide authority in an address given the other day said: "Young people should go tired to bed and have no time for unhealthy excitement." And may I with no uncertain voice plead as a cure for the neuroses of the twentieth-century child hard work and hearty play, a simple and a healthy life.

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[3] Baldwin: Loc. cit., p. 116.

[4] See Baldwin: Social and Ethical Interpretations in Mental Development, p. 34.

THE INFLUENCE OF FEEDING ON THE MORTALITY OF INFANTS.[1]

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A CONSIDERABLE amount of work has been done on the subject of infantile mortality and as a result many valuable suggestions have been made. The statistical material, however, so far as it is concerned with the method of feeding, deals chiefly with the relative proportion which deaths among hand-fed and breast-fed children bear to the total infant deaths, rather than the proportion which such deaths bear to the aggregate of children reared in each of these two ways. In the following paper an attempt has been made to obtain these more trustworthy figures for the borough of Derby. The information used for this purpose has been collected by the women inspectors and has been accumulating for some years.

Varying local conditions play an important part in causing differences in the mortality returns of different districts and to make the following statistics of value for comparative purposes it would perhaps be advisable to refer briefly to the existence of those conditions which are generally assumed as having some influence on the mortality of infants, as they exist in Derby. The town is neither markedly salubrious nor notably unhealthy. Its population is chiefly of the artisan class and numbered 115,000 at the last census. Employments are at railway works, foundries, and mills. Trade is fairly constant, without violent fluctuations, and on the whole there is less acute poverty than in most towns of the same size. The percentage of married women engaged in occupation at the census of 1901 was 9·2, as against 13·2 in England and Wales. The slums are extremely limited in extent and overcrowding is practically non-existent. The percentage of tenements with less than five rooms which were found to be overcrowded was 4·1, as against 12·0 for England and Wales and 11·8 for the aggregate county boroughs. The size of the tenements, which practically mean houses in Derby, is satisfactory, as 81·8 per cent. are of five rooms and upwards, as against 46·7 in England and Wales. The town is built on heavy retentive clay and is about 160 feet above the sea level at the market place. The levels and directions of streets are characterised by an unfortunate irregularity. There are a large number of privies and pail closets, the objectionable influences dispersed by which are lessened to some extent by the large open space which is required at the rear of all buildings. These facts indicate that the population is perhaps below the middle in the social scale but the inhabitants live under fairly average conditions.

During the year 1900 arrangements were made whereby information of every birth registered with the local registrar was given each week to the medical officer of health. Since then an inquiry has been instituted into the manner of feeding every child so registered and the following statistics relate to the births which were registered during the three years November, 1900, to November, 1903. These were not submitted to analysis until 1904. By carefully indexing every birth it was possible to trace any dying under the age of 12 months and thus a 12 months' history was obtained of every child born in the town and not removed before the age of 12 months. The fact that no account was taken of emigrants or immigrants will not seriously disturb the results, for we may reasonably assume that among the emigrants the method of feeding the children would probably approximate the totals, and although a lessening in mortality rates would result by excluding them the comparative rates would still remain trustworthy. During the above three years 9189 births were registered. No inquiry was made in 523 instances, as they were births in houses where it was considered possible that the parents might resent inquiry. 17 deaths were observed amongst these latter children. 323 children were born, in respect to which the kind of food could have no influence in causing early death, for 85 of them were children of low vitality who died before nourishment had been given, 206 were prematurely born, and 32 were born with some congenital defect or malformation inconsistent with life. Table I. gives particulars of all these births, subdivided according to the quarter of the year in which they occurred.

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[1] A paper read before the Derby Medical Society on April 4th, 1905.

TABLE I.—NUMBER OF BIRTHS OCCURRING IN EACH QUARTER (NOVEMBER, 1900, to NOVEMBER, 1903) AND THE DEATHS REGISTERED AMONG THEM UNDER THE AGE OF ONE YEAR; ALSO SIMILAR PARTICULARS RELATING TO THE SAME CHILDREN DIFFERENTIATED ACCORDING TO THE METHOD OF FEEDING AND PARTICULARS OF THE CASES WHICH ARE NOT INCLUDED IN THIS LATTER DIFFERENTIATION AND THE REASONS FOR EXCLUSION.

Quarter of the year in which the birth occurred.	All births.			Breast-fed children.			Hand-fed children.			Children reared partly naturally and partly by hand.			Various.				
														Dead.			
	Total number of births.	Deaths under the age of 12 months.	Death-rate per 1000 births.	Number of children breast-fed.	Deaths under the age of 12 months.	Death-rate per 1000 children breast-fed.	Number of children hand-fed.	Deaths under the age of 12 months.	Death-rate per 1000 children hand-fed.	Number of children not wholly breast-fed or hand-fed.	Deaths under the age of 12 months.	Death-rate per 1000 children so reared.	No information, but living.	No nourishment given.	No information obtainable as to method of feeding.	Premature births.	Congenital defects and malformation.
First	2334	284	121·7	1389	94	67·7	406	72	177·4	338	32	94·7	115	25	7	47	7
Second ...	2411	323	134·0	1366	96	70·3	442	101	228·6	407	38	93·4	108	22	4	51	11
Third	2347	291	124·0	1353	89	65·8	411	82	199·6	366	43	117·5	140	19	4	47	7
Fourth ...	2097	273	130·2	1170	89	76·1	367	66	179·9	328	29	88·5	143	19	2	61	7
Total ...	9189	1171	127·5	5278	368	69 8	1626	321	197·5	1439	142	98·7	506	85	17	206	32

If the 846 children in respect to whom no investigations were made or who died under conditions impossible to be influenced by the manner of feeding are deducted from the 9189 registered births a total of 8343 children is left, and of this number 5278, or 63·3 per cent., were breast-fed; 1626, or 19·5 per cent., were hand-fed; a nearly equal number—1439, or 17·3 per cent.—were breast-fed at first and afterwards wholly hand-fed or were partly breast-fed and partly hand-fed from a very early stage of their existence.

The highest average death-rate occurred among children born in the second quarter of the year and then in order of diminishing rates in the fourth, third, and first. These death-rates, however, only represent the resultants of causes operating upon each of the three classes into which they are differentiated and on that account it will be more profitable to analyse the returns under the subheadings. The highest death-rate (197·5) is observed among the hand-fed children; it is nearly three times that recorded among breast-fed children (69·8) and it is twice that of children reared partly by hand and partly naturally (98·7). These marked differences are further accentuated by the fact that the mortality-rate among breast-fed children as here stated is in excess of the actual for this reason. The statement made at the time of visitation that the child was breast-fed was made the subject of very careful inquiry before being entered as such but in investigating the subsequent deaths it was found that hand-feeding had been substituted. As the number of children in whom the feeding had been changed from breast to hand could not be ascertained all deaths occurring among such were regarded as belonging to the group among which they were originally classified and thus some deaths which ought to have been included in the mixed or hand-fed group were retained in the breast-fed group.

The mortality among hand-fed children is below the real mortality, for the obvious reason that if it were discovered at the time of the first visit that the child was being regularly hand-fed this method of feeding would not be changed, but several deaths, which perhaps ought to be classified as deaths of hand-fed children, are placed in other groups, thus lowering the mortality amongst this class, so that in comparing the mortality rates in these two divisions the comparison is entirely in favour of hand-fed children and against those breast-fed. It may therefore reasonably be assumed that an average death-rate among infants under one year of age reared naturally ought not to exceed 65 per 1000, whilst the mortality among infants reared by hand is not less than 200 per 1000.

The object of the subdivision of the births into the quarters in which they occurred was to ascertain whether the period of birth had any influence upon the chance of a child living to the age of 12 months, and to assist the elucidation of this question the rates of mortality per 1000 children born in each quarter from the chief causes of death among both breast-fed and hand-fed children have been calculated. These are as follows:—

	Quarters.			
	First.	Second.	Third.	Fourth.
Bronchitis and pneumonia—				
Hand-fed	19·7	27·2	29·2	30·0
Breast-fed	13·0	14·0	14·8	16·3
Diarrhœa and zymotic enteritis—				
Hand-fed	44·4	79·2	53·6	24·6
Breast-fed	9·4	11·0	6·0	7·7
Disorders of the digestive system—				
Hand-fed	51·8	45·3	46·3	38·4
Breast-fed	15·9	15·4	9·7	14·6
Convulsions—				
Hand-fed	17·3	27·2	28·6	27·3
Breast-fed	12·3	13·2	16·3	18·8
All other diseases—				
Hand-fed	44·4	49·8	43·8	60·0
Breast-fed	17·3	16 9	19·7	18·9

Among hand-fed children it will be noticed that those born in the second quarter show the highest mortality and that there is a progressive decrease amongst those born in the third, fourth, and first quarters. The analysis of the chief contributory causes of death plainly indicates that the high mortality among hand-fed children born in the second quarter is due to zymotic enteritis and diarrhœa. The incidence of these diseases on children born in each month has been followed and it is found that the children born in May and June, and to a less degree those born in July, were chiefly affected; and further, that although the months of July, August, and September are months of greatest prevalence, children born in August were among the least likely to suffer. The reasons for this result are probably that less care is taken in preparing the food of children after the first month, and as the resisting power of a child to attacks of zymotic enteritis is an increasing one children of the age of two or three months at the time of greatest prevalence will show greater mortality than those who are older, whilst those born during the period are probably sufficiently well cared for to materially diminish the risk. The comparatively high death-rate amongst children born in the third quarter is, in part, to be attributed to some excess of deaths from zymotic diarrhœa, for which the deaths among the children born in July are responsible, and, in part, to a high death-rate from convulsions. Amongst children born in the last quarter the death-rate from bronchitis and pneumonia is highest. This is what might be expected, seeing that the mortality from chest ailments would bear relation to the varying atmospheric conditions which are generally most trying at this period of the year.

Amongst breast-fed infants those born in the fourth quarter contribute most deaths to the general total and in diminishing degree those born in the second, third, and first quarters. There are no very great disturbing elements in any quarter among children reared naturally, yet, as among the hand-fed children, the mortality from zymotic enteritis and diarrhœa shows some variation, the highest incidence being on those born in the second quarter. It is not considerable and may possibly result from small quantities of milk being given to children to quiet them during the mother's absence or to supplement an insufficient natural supply. Chest ailments are distinctly highest among children born in the fourth quarter and this, to a great extent, accounts for the highest total mortality among this group of children.

The chief conclusion which can be drawn from the above information when each group is separately considered is that the only children exposed to exceptional risk are those reared by hand and born either during the second quarter of the year or during the first month of the third quarter.

TABLE II.—*Mortality per 1000 from Certain Diseases among Children who were Breast-fed or Hand-fed, or who were at first Breast-fed and subsequently Hand-fed (Mixed).*

—	Breast-fed.		Mixed.		Hand-fed.		All three classes.	
Number of children.	5278		1439		1626		8343	
Disease.	Number of deaths.	Death-rate per 1000.	Number of deaths.	Death-rate per 1000.	Number of deaths.	Death-rate per 1000.	Number of deaths.	Death-rate per 1000.
Bronchitis and pneumonia... ...	76	14·4	18	12·6	43	26·5	137	16·5
Diarrhœa and epidemic enteritis...	45	8·6	31	21·6	84	51·7	160	19·2
Gastritis and gastro-enteritis	7	1·4	5	3·5	10	6·2	22	2·7
Marasmus	29	5·5	17	11·9	32	19·7	78	9·4
Atrophy and debility	37	7·1	10	7·0	32	19·7	79	9·5
Tabes mesenterica	6	1·2	1	0·7	11	6·8	18	2·2
Various abdominal tuberculoses	3	0·6	4	2·8	6	3·7	13	1·6
All other tuberculous diseases ...	9	1·8	3	2·1	5	3·1	17	2·1
Convulsions... ...	79	15·0	30	20·9	42	25·9	151	18·1
Dentition	7	1·4	7	4·9	7	4·4	21	2·6
Zymotic diseases other than diarrhœa	23	5·4	11	7·7	21	13·0	60	7·2
All other diseases	42	8·0	5	3·5	28	17·3	75	9·0
Totals	368	69·8	142	98·7	321	197·5	831	99·1

The very striking differences in the aggregate death-rates of breast-fed and hand-fed children are also to be observed when the mortality rates from different diseases are similarly compared. A reference to Table II. shows that in not one single instance does the death-rate in any class of disease among hand-fed children even approximate that recorded among children who are breast-fed; the rate is invariably considerably higher. It is not easy to associate an increase of 12 per 1000, or nearly 100 per cent., in the mortality from bronchitis and pneumonia with the manner of feeding, nor would an increase in mortality of 7·6 per 1000, which is over 100 per cent., from zymotic diseases, excluding diarrhœa, appear to be associated with a similar cause, nevertheless the statistics point to this result and the probable reason is to be found in the production of children suffering from what might be termed "lessened power of resistance" or "diminished vitality." That these conditions are not the result of marked differences in social position is shown from the following particulars relating to the house accommodation of 100 children fed naturally and by hand and taken in consecutive order from the register:—

	One or two room tenements.	Three rooms.	Houses of four rooms.	Five or more rooms.
Breast-fed	6	7	27	60
Hand-fed	2	3	13	82

If any conclusion can be drawn from these data it is rather that the hand-fed children are better housed than the breast-fed and perhaps it is justifiable to assume they are of at least equal social position. It is more probable that these enfeebled constitutions are the direct result of improper feeding, for when food constituents are not given to a child in their proper proportions, or the substances which are used are either unsuitable or are used in such a manner as regularly to render them unsuitable, it requires very little imagination to suggest the evolution of a child who will show increased sensitiveness to varying climatic conditions and diminished resistance to attacks of the commoner zymotic ailments. Diarrhœal diseases and deaths from defective nutrition are always quite truly referred to as the chief dangers to which hand-fed children are exposed, but it is quite obvious from the above figures that the numerous other diseases cannot be disregarded, since in the aggregate they form a formidable total and to this extent emphasise the argument against rearing a child by hand except in cases of absolute necessity. Next in importance to zymotic diarrhœa come chest ailments, to which reference has already been made, and then convulsions, a large proportion of which deaths are probably to be associated with disorders of digestion, whilst a large proportion of the deaths from marasmus, atrophy, and debility have their origin in the same cause.

Amongst breast-fed children the causes of death which stand out prominently from the rest are bronchitis and pneumonia and convulsions. The former, to a certain extent, depend upon exposure during early months of life, whilst overfeeding during the first six months and the irritability consequent upon dentition during the latter six months are probably the principal factors in the causation of convulsions. There is obviously room for considerable improvement in the mortality recorded among breast-fed infants, and an attempt to lessen the number of deaths from these two diseases would appear to present the most hopeful chance of success.

Amongst children who were at first breast-fed and subsequently hand-fed, a considerable diminution in the mortality as compared with hand-fed is noticeable, and although the aggregate mortality is considerably higher than that of breast-fed children there are one or two classes of disease in which the mortality is lower. This result obviously points to the advantages which accrue to children who have natural food supplemented by artificial food rather than an entire supply of the latter.

It has been an interesting portion of this inquiry to ascertain the mortality among hand-fed children in relation to the kind of food on which they have been reared. There are numerous difficulties in the way of obtaining absolutely correct information because in many cases two or more different foods have been used but the particulars given in the following table may be regarded as fairly trustworthy. It should be stated that cases in which condensed milk was used with any other food are classified under "mixed" food. With the patent foods the only supplementary food that was permitted was milk and water; any other addition brought that particular method of feeding under the heading of "mixed" food.

TABLE III.—*Showing the Death-rates recorded among Hand-fed Children according to the Kind of Food used.*

Kind of food used.	Total number fed on each food.	Deaths.	Death-rate per 1000 fed on each food.
Milk-and-water only	895	153	177
Condensed milk only	149	38	255
Bread, rusks, oatmeal, arrowroot, cornflour, sago, tapioca, and mixed foods ...	159	40	252
Patent food A	39	7	180
" " B	81	17	210
" " C	45	6	134
" " D	93	19	204
Various patent foods	164	36	220
All patent foods...	(422)	(85)	(202)
Incomplete information... ...	1	0	0
Totals	1626	321	193

From this table it will be seen that the lowest death-rate was among children fed on patent food "C," after which children who were fed on milk-and-water survived in greatest proportion. In the aggregate the various patent foods show a death-rate of 202 per 1000, as compared with 177 for milk-and-water. The composition of these foods is interesting when considered in relation to these statistical details; it shows that very many more children survive who are brought up on malted food in which there is no starch than on such as contains unconverted starch in marked degree, whilst occupying a middle position between the two are the various foods prepared from desiccated cows' milk. Patent food "C" is a farinaceous food in which the whole of the starch has been rendered soluble. It contains no fat; this is supplied by the milk used in preparing it. Patent food "A" contains no starch and is a very fair imitation of human milk. It approximates the composition of dried human milk but is deficient in both proteids and fat. Patent food "D" contains starch which has not been predigested and although perhaps even very young children can digest a certain amount of starch it is not a suitable food before the period of dentition. It is this class of food which forms a large proportion of those classified under "Various patent foods," and, as the results show, they are much less suited for children than the other two.

Children fed on condensed milk show a very high mortality —viz., 255 deaths per 1000 of children so fed—and this is not surprising. The chief reason is, perhaps, to be found in the analyses of these milks, which are as follows:[2]—

	Proteids.	Fat.	Milk sugar.	Cane sugar.
Human milk (average) ...	1·5	3·5	6·5	—
Cows' milk " ...	2·5	4·0	4·5	—
Mixture (cows' milk, 2 parts; water, 1 part)	1·6	2·6	3·0	—
Unsweetened whole condensed milk	8·3	12·4	16·0	—
Mixture (unsweetened whole condensed milk, 1 part; water, 4 parts) ...	1·7	2·5	3·2	—
Sweetened whole condensed milk	9·7	13·7	15·0	37·2
Condensed separated milk	11·5	2·0	13·0	45·8

Unsweetened whole condensed milk if no fat has been extracted, constitutes as suitable an article as cows' milk from which to prepare food for infants, and if care is taken in sufficiently diluting it and making suitable additions no serious objection can be raised against its use, but the fact remains that for some reason or other practically none is used for feeding infants in this town. Analysis shows that to sweetened condensed milk a large amount of cane sugar is added, so that if this milk is diluted to the proportions necessary to bring the proteids and fat to the same standard as average human milk, sugar is in excessive proportion. Condensed separated milk shows almost the same percentage composition as sweetened whole condensed milk, except that the fat is reduced to 2 per cent. Such a milk is absolutely unsuited for the food of infants and its continuous use results in slow starvation of the infant. The death-rate among children reared on bread, rusks, arrowroot, and other farinaceous foods is exceedingly high, being 252 per 1000. This is only what would be expected.

A death-rate of 177 per 1000 amongst children fed on modified milk is not satisfactory. The causes may in brief be stated to be twofold—first, the results of contamination, and secondly, the results of ignorance. The index to the effects of contamination may roughly be stated to be the deaths from diarrhœa and epidemic enteritis, and from ignorance the deaths from various disorders of digestion—viz., gastritis and gastro-enteritis, marasmus and atrophy, and debility. The deaths from the former diseases total 84 and from the latter 74, but to these must be added those resulting from impaired resistance which are the direct consequence of improper feeding, and the fact should not be lost sight of that though contamination acts most disastrously during a limited period of the year, the effects of ignorance are always in operation and, in the aggregate, are probably much more serious.

A consideration of the various ways in which contamination of the milk may result and of the means by which ignorance may be combated is not within the scope of this paper, but two points do seem worthy of reference. One is that the risk of contamination of milk in the homes of the poor in towns where privy middens are a feature is a serious one and it ought to be possible to enforce proper cupboard accommodation for the storage of food. The other is that, although education of girls at school in the subjects of domestic economy and home nursing would be of the greatest value, a very great deal more can be done by instructing the young mother at home as soon as possible after the baby has made its appearance. To do this would necessitate the notification of every birth to the sanitary authority and visitation by a properly qualified person. Such information is received in this town and visits are made with, I believe, the greatest advantage to both mother and child.

The deductions which it appears justifiable to draw from the mortality observed amongst hand-fed children fed on different foods are: that the use of sweetened condensed milk, either whole or skimmed, should be invariably discouraged and whole unsweetened condensed milk should only be permitted when one is satisfied that the milk is being used with a proper degree of dilution and with the necessary additions as in the case of modified cows' milk; also that since the death-rate amongst children reared on patent foods is, on the average, higher than amongst those fed on diluted cows' milk, every attempt should be made to encourage parents to use this latter food and to educate them to an appreciation of the necessity for the additions to, and the dilution of, cows' milk to render it suitable for infant's food. The addition of patent foods to the dietary of very young infants is unnecessary, sometimes dangerous, and always expensive.

In conclusion, it is unnecessary further to emphasise the risks to which hand-fed children are exposed, but it should not be forgotten that these risks are considerably minimised by mixed feeding and that, therefore, every mother who is unable fully to satisfy her infant should be encouraged to continue to feed her child and to supplement any deficiency by means of artificial food and that only in case of absolute and unavoidable necessity should resort be had to hand-feeding alone.

Derby.

SOME REMARKS ON

THREE CASES OF SEPARATION OF THE DESCENDING PROCESS OF THE UPPER TIBIAL EPIPHYSIS IN ADOLESCENTS.

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THIS condition, although not uncommon, has only been generally recognised since the use of the x rays has become habitual in cases of bone injury or disease, although one can recall many mysterious instances of "enlargement of the tibial tubercle" in old "out-patient" experience. The following three cases illustrate growing knowledge on the subject. The first, seen in 1897, was mistaken for one of osseous tuberculosis, while in the light of the information gained in its treatment the succeeding two were placed in their proper category.

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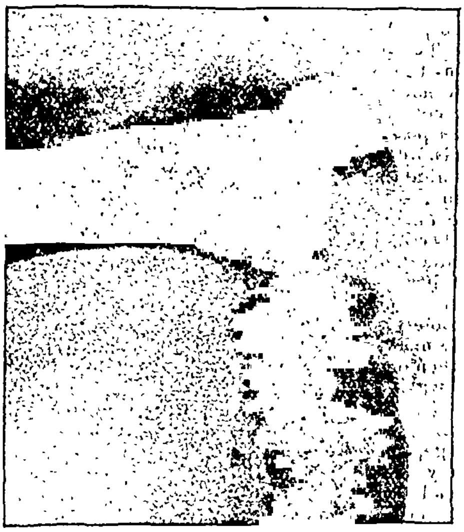
[2] Food and the Principles of Dietetics, by Dr. Robert Hutchison; and Milk and Milk Products, by Permain and Moore.

CASE 1.—The patient, a stout, somewhat flabby boy, aged 14 years, had received a kick over the upper end of the right tibia while playing football a year previously to being seen by me. This injury was followed by severe local pain which persisted for some time and on its cessation as a continuous trouble it recurred with any severe exercise and also occasionally in the form of aching when in bed at night. After the lapse of eight months some local swelling with intermittent pain developed and three weeks before the boy came under my care tincture of iodine was applied which caused slight redness of the overlying skin. A blister was then applied and this was followed by considerable diminution of the local swelling. In November, 1897, the following condition existed. An area of local swelling about one inch in diameter lay over the outer aspect of the tibial tubercle; this was tender on palpation and a sense of deep fluctuation could be obtained. The swelling was strictly localised and there had been no pain since the application of the blister. A skiagram (Fig. 1) was taken by the late Dr. Barry Blacker.

FIG. 1.

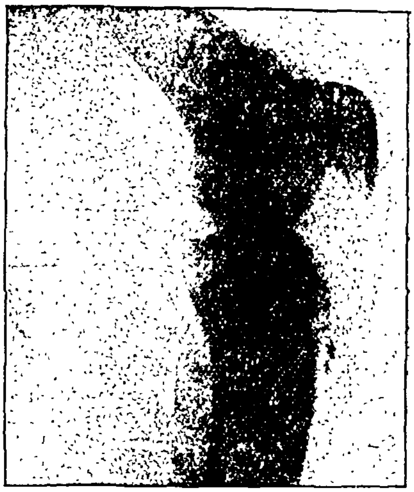


Showing considerable displacement and atrophic appearance.

This showed some gaping of the anterior half of the main junction of the upper epiphysis of the tibia, while a sharp angle existed at the junction of the main mass and the descending beak; two small ossific deposits were seen in the cartilage of the beak itself. The interval between the beak and the upper end of the diaphysis was greatly widened and the latter was more transparent than it should be beneath the space. The prominence of the lower segment of the tubercle was well developed on the diaphysis but no separate ossific centre was visible. The case was regarded as one of local osteitis and tuberculosis being suspected an exploration was recommended and carried out. The operation revealed little; the bone of the upper end of the diaphysis was abnormally soft and a little was scraped away with a Volkmann's spoon but no sign of tuberculous deposit was discovered. The wound healed and after two months of rest the boy returned to school free from any symptoms except occasional aching pain. Violent games were forbidden for the time. Two years later the boy was quite well and free from any trouble.

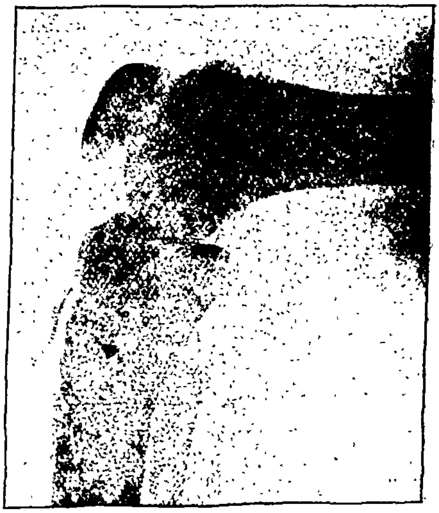
CASE 2.—The patient was a boy, aged 12 years. Towards the end of the football season some weakness and occasional pain were noted in the left knee. For the past six months the knee had frequently "given way" when the boy had been playing games, especially cricket. This "giving way" was attended with pain and the boy with difficulty prevented himself from falling. Two months previously some swelling was noted over the tibial tubercle and 14 days previously a symmetrical swelling was noted in the right limb also. During the whole period there had been occasional pain on movement, especially when the patient had been lying for some time in one position in bed. On examination a symmetrical swelling was observed at the level of each tibial tubercle, there were some local heat and tenderness over the swelling, and on the right side a suspicion of reddening of the skin. Neither swelling fluctuated. Skiagrams of the knees were taken by Dr. A. H. Greg (Figs. 2 and 3) which disclosed the following state.

FIG. 2.



Left knee. Considerable irregularity, slight displacement.

FIG. 3.

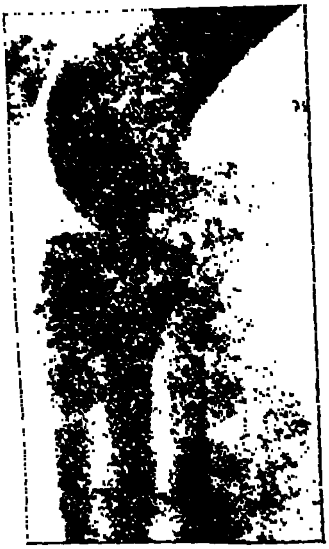


Right knee. Epiphysis almost normal.

The gaping of the anterior part of the epiphysial junction seen in Fig. 1 was absent and the ossific granules in the beak were not so much displaced and formed a continuous line. In both beaks, but especially in the left, a well-marked interruption of the ossific deposit existed at the junction of the beak with the main epiphysis (no obvious angle was formed here). The diaphysial prominence for the lower segment of the tubercle was absent, but the boy was only 12 years of age. Under the influence of rest, local rubbing, and the support afforded by a Velpeau's crêpe bandage the boy improved sufficiently in three months to return to school, violent games being for the time forbidden.

CASE 3.—The patient was a man, aged 22 years, a porter. Four years previously to his coming under observation he had received a kick from a horse on his right leg. Since that period the tubercle of the right tibia had been increasing in size and prominence. At intervals he suffered with pain in the tubercle and he thought that this was particularly the case when the weather was wet and damp and at nights. The knee occasionally gave way and "let him down" and kneeling caused pain. The tubercles of both tibiæ were very prominent but this was much more marked in the case of the left. There was no change in the overlying parts on either side. A skiagram (Fig. 4) taken by Dr. Greg showed the following appearances. The main epiphysis was consolidated with the shaft; in the place of the descending beak two ossific nodules at a higher level than their normal situation were seen in the substance of the ligamentum patellæ and completely distinct from the tibia. The diaphysial portion of the tubercle was well marked and beneath this and for a short distance downwards in the shaft the bone was unduly transparent and offered the appearance of a rarefying osteitis. As the tenderness and giving way were a source of much inconvenience to the patient it was decided to attempt to fix the detached tubercle. With this object a small flap was raised from over the tubercle and an incision was carried vertically downwards through the ligamentum patellæ. The portion of bone was found to be so moveable that the incision was carried through it and a "synovial space" was then found lying between the ligament and the underlying tibia. As it was thought that simple pinning down would probably fail to insure adhesion the osseo-cartilaginous nodule was removed from the tendon and the latter was fixed by suture to the tibia. The terminal attachment of the tendon had not been interfered with. The result has been good and the patient can now kneel without pain.

FIG. 4.



Showing complete displacement. Rarefaction of tibial diaphysis.

The three cases related are of interest as illustrating the various degrees of development of the condition and in showing that the mischief is primarily confined to the portion of the tibial tubercle developed from the epiphysis. It may be useful to add a few words concerning the pathology and symptomatology of the condition.

As has been shown by Schlatter and others ossification of the tubercle of the tibia may be in the form of a continuous extension downwards in the tongue-like prolongation of the epiphysis, or it may follow the appearance of separate ossific nodules in the tongue itself. Further, it is evident that the lower portion of the fully developed tubercle is formed by a projection of the diaphysis at the point of junction of the lower extremity of the epiphysial beak. The latter point is well illustrated by the three skiagrams accompanying the cases. In Figs. 2 and 3, from a boy aged 12 years, no trace of the diaphysial projection is to be seen; in Fig. 1, from a boy aged 14 years, it is obvious; while in Fig. 4 it forms a pronounced eminence. Its development no doubt corresponds with the increasing strain thrown on the diaphysis with the growing strength of the quadriceps extensor.

Causation of the condition.—In Cases 1 and 3 a kick was adduced as the original cause of the trouble by the patients themselves, and in the case of the two boys it is significant that the commencement coincided with the football season. The latter fact emphasises the influence of violent contraction of the quadriceps extensor in the production of the injury. The condition falls into strict coincidence with the rarer one of separation of the tibial tubercle in adults and differs chiefly in the comparatively small amount of displacement of the fragments. This is no doubt to be explained by the fact that the violence has usually been insufficient to tear the lateral extensions of the quadriceps passing to the line running from the tibial tubercle to the tuberosities. The effect of rupture of these extensions in allowing free displacement of the separated tubercle has been pointed out by Osgood[1] and compared with the corresponding result of free laceration of the expansions of the quadriceps and triceps respectively in fractures of the patella and olecranon. In both of the cases related above I should be inclined to relegate the result of the direct kick to the production of an excessive reflex contraction of the quadriceps due to the blow over the patellar tendon. This limitation of the degree of displacement is of practical importance, since it renders implication of the capsule of the knee-joint (a coincident injury seen in fracture of the adult tubercle) unlikely. Naturally the incidence of the condition is confined to adolescence and this of the early stage.

Pathological anatomy.—The influence of the mode of ossification of the tubercle has been already adverted to; suffice it to point out that in all three of the instances under discussion the process was that of the deposit of separate nodules in the beak. The figures show well the progressive change which may take place when the condition is untreated. In Figs. 2 and 3, in which the history was of six months' duration, slight change is to be observed beyond the evident break of continuity at the point of junction of the beak and main epiphysis. In Fig. 1, in which the history extended to 12 months, a well-marked angle has developed between the beak and the epiphysis, while a greatly increased distance separates the beak from the diaphysis. In Fig. 4, where the length of history amounted to four years, the beak has become entirely separated from the epiphysis, forming a kind of sesamoid bone in the patellar tendon, while the tubercle proper is formed from the diaphysis alone. The amount of separation of the beak from the diaphysis has been noted to vary considerably by other observers but whether the sequence of events shown by the above skiagrams is a common one further experience alone can prove.

Another point which deserves mention is the remarkable pseudo-inflammatory signs which are seen to accompany the injury. Thus not only are there local swelling, heat, and tenderness in the soft parts overlying and surrounding the tubercle but the underlying bone of the diaphysis also exhibits signs of rarefaction in an increased transparency. The latter is well shown in Fig. 4 and was existent also in the case forming the subject of Fig. 1, although it is not apparent in the printed skiagram. The inflammatory signs have in many cases given rise to the supposition that a local infective process was present. In a case reported by K. Winslow[2] these signs led to a negative bacteriological and inoculation test being undertaken and in Case 1 tuberculous disease was suspected by myself prior to the operation. In Case 3 the injury resulted in a very imperfect formation of the tibial tubercle, none the less the tubercle was unduly prominent, and it is conceivable that an unduly prominent tibial tubercle may be a remote result of the injury. In this very patient a large tubercle existed in the sound limb. Unfortunately I neglected to obtain a skiagram from it.

Signs of the injury.—The most characteristic clinical indication is the "giving way" of the forcibly extended knee. This seems to be present in all cases and is the more likely to be mentioned by the patient as it is usually antecedent to attacks of pain. The remaining clinical signs are pain, variable in amount and continuity but liable to occur after "giving way" of the knee or on the first movement of the limb after it has been at rest for some time in one position, as at night; local tenderness, elicited on palpation or on kneeling; swelling due to local œdema; and occasionally a suspicion of local redness of the surface. In Case 3 the tubercle was evidently moveable on palpation and manipulation of the tendon.

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[1] Boston Medical and Surgical Journal, vol. cxlviii. p. 115.
[2] Annals of Surgery, No. 46, February, 1905.

Treatment.—Rest and local support are the only necessary means when the cases are seen early and recognised. Counter irritation may be useful to relieve pain. Case 2 gives the probable ordinary course of the injury when taken in time.

I cannot defend the exploration made in Case 1 as it was undertaken on a mistaken diagnosis of tuberculous disease of the bone, but it certainly did no harm and I am inclined to think that it hastened the consolidation of the parts. In Case 3 the operation was indicated by the mobility of the tubercle, the long history of four years' duration, and the fact that the condition prevented the man from following his avocation with comfort. The result I consider justified the course followed.

Charles-street, W.

THE PRACTICAL VALUE OF GROCCO'S PARAVERTEBRAL TRIANGLE AS A PHYSICAL SIGN FOR THE DIAGNOSIS AND ESTIMATION OF PLEURAL EFFUSIONS.[1]

By WILLIAM EWART, M.D. CANTAB., F.R.C.P. LOND.,
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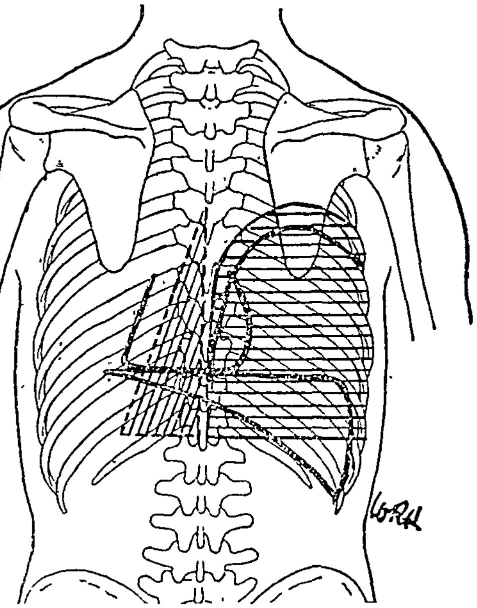
WHENEVER the size of a pleural effusion is equal to at least a fifth of that of the pleura its diagnosis can be safely established by the major signs at our disposal if we avail ourselves of the mutual confirmation which each of them affords to the others, but when its size is much less than a fifth physical examination does not provide us with the same strict demonstration and the presence of fluid in these small collections has generally to be inferred from the conjunction of suggestive minor signs, symptoms, and clinical circumstances. This was illustrated in two men, aged 26 years and 47 years respectively, recently under my care at St. George's Hospital with small effusions which were not tapped. In the former the fluid was easily identified at first, but at the finish its remainder could not be demonstrated with certainty by the usual methods. In the latter the diagnosis was difficult; and the fluid, which never rose above the lower fourth of the pleura, was not demonstrable by them either during the earliest or during the last stage of the attack. As a fact, owing to the inaccessible position of the *fundus pleuræ* and to its part-occupation by an organ most variable in size, we have not hitherto possessed any fine test comparable to that for small amounts of ascitic or of pericardial fluid. I am led to believe that "Grocco's sign" will now, as a rule, supply that deficiency, as it did in the cases to which I have referred.

I had not realised the capabilities of this interesting sign until it occurred to me to submit it to a crucial test which I found it stood well. I have since then made it the basis of my routine method for the rapid diagnosis of pleural collections, large or small. The fact that it is capable of being checked as to its genuineness in each case and at any moment by the simplest procedure places it on the list of our sure signs, and raises it in respect of trustworthiness even above the analogous sign for pericardial effusion known as the "lower dorsal dull patch"; for in the case of the latter the only crucial test with which I am familiar is its disappearance with the reabsorption of the pericardial fluid. The chief analogy which obtains between these two signs is that, in both cases, the demonstration of the existence of effusion is obtained at a distance from the fluid itself.

Grocco's sign is as follows. Whenever fluid (either pus or serum) collects within a free pleura, a paravertebral patch of partial dulness is obtainable in the other, the "dry" pleura, of triangular outline and of the shape and relative size shown in the diagram, which was kindly drawn for me by my able clinical clerk, Mr. W. R. Harris. *The crucial proof* which I employ to test the genuineness of the triangular dulness is its disappearance when the patient assumes the lateral decubitus on the side of the effusion, and its reappearance immediately he sits up or turns on to the sound side. This is at the same time a demonstration of the significance of the dulness, and for clinical purposes a sufficient proof that its production is due to the influence of a mobile fluid. When, however, the pleura is *over-distended* the mobility of the fluid is much reduced. The complete disappearance of Grocco's triangle does not then seem to occur, judging from one case recently examined by me, but the height of the triangle becomes much less with the change to the lateral posture.



Grocco's "paravertebral triangle" of partial dulness in a case of right pleural effusion. The dorsal dulness of the heart and that of the liver are roughly indicated. The summit of "Damoiseau's curve" of pleural dulness is the level of the apex of the triangle; the relatively narrow base coincides with the twelfth rib.

The short routine method of differential diagnosis which I use on the strength of these observations consists in passing at once to the examination of the sound side of the back as soon as rough percussion indicates a basic dulness resembling that of effusion. If there should be no Grocco's triangle of dulness there can be no free effusion in the chest. Should a Grocco's triangle be found we may then proceed to apply the crucial test if we wish to be further convinced or to convince others that the dulness is really due to fluid. The mode of percussion is a matter of indifference so long as it is good and therefore efficient.

The next question is the *extent of the effusion.* This, too, has its answer in Grocco's triangle. For whereas, as shown by Grocco, the base of the triangle, corresponding in position to the twelfth rib and to the pleural sinus, varies only slightly with the bulk of different effusions (its length ranging between three and six, or even ten, centimetres), the length of the vertical side of the triangle (and, it follows, of the third side also) varies exactly with the upper limit of the effusion. Therefore when a *skilled percussor* determines by two or three strokes, and with great accuracy if he should be familiar with the pleximeter, the height of the triangle and the slope of its third side, which is then to be continued from apex to base with a touch of the pencil, he has not only to demonstrate that fluid has gathered in the chest but also determine its upper level; and he is able, even before percussing critically the effusion itself, to draw in anticipation at the level of the apex of the triangle a Damoiseau's curve which confirmatory percussion will prove to be absolutely correct. It need hardly be pointed out that the exact volume of the fluid within the chest cannot be measured in vertical inches of dulness and in inches of circumference. Its determination requires mathematical accuracy such as that claimed for the colorimetric method turned to clinical account by Schifone[2] on the basis of Niclot's method simplified by Achard. But for our usual clinical needs it is enough that we should know whether we have to deal with a *few ounces or with pints*, and the whole of this information, thanks to Grocco's discovery, can be obtained without any hurry in the space of two minutes.

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[1] From notes of short cliniques in the wards of St. George's Hospital.

Historical and explanatory note.—It is noteworthy that Banti[3] in 1902 had described the occasional occurrence of a dulness behind the sternum, due to a fluid effusion pressing its way forward. Grocco's communication to the Twelfth Congress of the Italian Society of Internal Medicine at Rome described the triangle; and since then papers have been published in Italy on the same subject, including one by Pieraccini,[4] another by Luigi Ferrannini,[5] who has given much attention to the clinical study of cases and concludes from his discovery of a radioscopic shadow corresponding to the triangle that the dulness is due to local pulmonary condensation under the pressure of a displaced heart, and specially important papers by G. Baduel[6] and by G. Baduel and Siciliano,[7] whose exceedingly thorough anatomical and experimental research is reported in an excellent review in the Epitome of the *British Medical Journal* of Nov. 26th, 1904.

It should be noted that the dulness of Grocco's triangle is of the partial kind only. As shown in my diagram partial dulness also obtains over the spines included in the vertical side of the triangle; and usually there is more of it below than above. The dulness also lessens from the middle line outwards; but it possesses nevertheless a most definite outer boundary which it is our business to percuss out. My former teaching that the vertebral spines are not dull to percussion except when effusion exists on both sides of the chest remains a true statement in the sense that there is not any absolute dulness of the spines in cases of unilateral effusion.

As to the causation it is perfectly clear that there is no underlying fluid at the site of the triangle. Baduel and Siciliano's transverse frozen sections prove this. My own independent observations had led me to recognise in the *mathematical* constancy of the lines a strict analogy with the still less variable lines of the "lower dorsal dull patch" and to surmise that this geometry had in both cases an anatomical basis. It seemed to me, too, that the hydrostatic conditions in the sitting posture would lead to *greater sagging of the pleural sac at* the base,. particularly below the level of the floor of the pericardium, where the mediastinum is looser and the abdominal contents offer only a yielding resistance. I arrived at the conclusion, which I find is entirely borne out by Baduel and Siciliano's transverse sections, that the pleural fluid, whether its amount be small or large, would gravitate to the bottom of the loose pleural sac *and cause its closer* and more extensive adaptation to the vertebræ. These observers have been able to trace a slight shifting of the long axis of the aorta under stress of large accumulations; and they warn us of the danger the vessel might run if a left Grocco's triangle were to be aspirated by mistake.

Paravertebral in its site, Grocco's triangle is therefore in my opinion *vertebral* in its mode of production and is not due, as assumed by Ferrannini, to pulmonary condensation or displaced viscera. It is merely another instance of fluid acting as a mute (as in the production of the "lower dorsal dull patch") and of that pleximetric function of the vertebræ in conducting to the surface amplified or diminished vibrations to which I have for some years called attention. In this case the mute is applied over a portion of the circumference of the vertebræ and the damped vibrations are conveyed to the surface by the compound pleximeter made up of the vertebral spines and transverse processes and of the heads of the ribs. Metaphorically speaking, the dulled spine casts its shadow into the resonant chest; and its shadow grows downwards in proportion to the increasing surface of its contact with the dull fluid which takes the place of dry resonant lung.

This view is strikingly confirmed by my latest observation, made since writing this paper, in a case of pyuria and right lumbar abscess.[8] The presence of a low but rather broad Grocco's triangle in the usual situation led me to diagnose also an empyema as a complication. But no pus was found in the chest, and the triangular dulness vanished as soon as Sir William Bennett's incision emptied the lumbar abscess. The case is valuable as showing that a paravertebral triangle of dulness may be set up at the base of the thorax by a collection of fluid below the diaphragm.

Curzon-street, W.

CHONDRODYSTROPHIA FŒTALIS OR ACHONDROPLASIA.

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THE importance of a disease to the practitioner increases with its incidence and a rare disease commands little attention. The consequent difficulty in diagnosis must be my excuse for giving this account of a typical case of achondroplasia, a disease sometimes mistaken for rickets but more often perhaps for cretinism.

The patient, a strong healthy girl, aged three years and eleven months, had recently recovered from a severe attack of diphtheria. She had had no previous illness. Several medical men had seen her and she had been treated without result with thyroid extract and also for rickets. There were four other children, all normal. Dwarfism was not known to have occurred in any relative. Although clever at imitation the child's mental condition was below normal. Her speech was indistinct and curtailed, almost restricted to affirmation and negation. Her general appearance was

	Measurements.	Case of achondroplasia.	Average of three normal children of same age.
	Weight	24·5 lb.	28 lb.
	Height	75·0 cm.	85·0 cm.
Head.	Circumference of head	52·0 „	48·6 „
	Occipital protuberance to root of nose ...	35·0 „	32·0 „
	External auditory meatus to external auditory meatus (over the vertex) ...	36·0 „	33·6 „
Face.	External auditory meatus to external auditory meatus (over upper lip) ...	21·5 „	23·3 „
	Root of nose to chin	9·0 „	9·2 „
Trunk.	Circumference of neck	23·5 „	23·3 „
	„ „ chest (level of nipple)	45·5 „	49·3 „
	„ „ abdomen (level of umbilicus	52·5 „	46·0 „
	„ „ pelvis	45·0 „	46·0 „
	Suprasternal notch to symphysis pubis	32·0 „	32·5 „
	Length of spine	35·5 „	35·0 „
	Subcostal angle	130°	78°
Upper limb.	Length of arm	8·0 cm.	14·5 cm.
	„ „ forearm	11·0 „	12·8 „
	„ „ hand	8·0 „	9·4 „
	„ „ middle finger	4·5 „	5·8 „
	Circumference of arm	14·0 „	13·3 „
	„ „ forearm	12·5 „	12·6 „
	„ „ elbow	15·0 „	13·5 „
	„ „ wrist	10·5 „	10·1 „
	„ „ hand	12·5 „	11·7 „
	„ „ finger (first phalanx) ...	5·0 „	4·2 „
Lower limb.	Great trochanter to external malleolus ...	28·0 „	40·3 „
	„ „ end of femur	14·0 „	21·2 „
	Circumference of thigh (middle)	25·0 „	24·9 „
	„ „ calf	15·0 „	17·7 „
	„ „ knee-joint	20·0 „	19·6 „
	Length of foot	11·5 „	13·7 „
	„ „ great toe	3·0 „	3·5 „
	Circumference of foot (level of heads of metatarsals)	13·0 „	13·5 „

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[2] Riforma Medica di Palermo, Nov. 15th, 1904. Cf., Journal of the American Medical Association, vol. ii., 1904, p. 663.

[3] Rivista Critica di Clinica Medica, 1902.

[4] Rivista Critica di Clinica Medica, 1903; and Clinica Moderna, 1903.

[5] Riforma Medica, August 30th, 1904. Cf., New York Medical Journal and Philadelphia Medical Journal, Oct. 15th, 1904.

[6] Riforma Medica, Palermo, xx., No. 6, 1904.

[7] Rivista Critica di Clinica Medica, January, 1904.

[8] Medical Register, 1905.

peculiar. The large cranium with prominent forehead, the depressed nasal bridge and consequent flat appearance of the face, the small chest and prominent abdomen and buttocks, and the short limbs and trident fingers made up a characteristic picture. The measurements of the head, trunk, and limbs, compared with the average of those in normal girls of the same age, will show the more marked features of the case.

The tip of the midddle finger reached only to four centimetres above the great trochanter, while in the normal child it reached nine centimetres below the great trochanter. A small part of this difference was due to the want of complete extension in the elbow-joint—a condition usually seen in these cases.

From these figures it is plainly seen that the limbs and the chest were well below the average and the face measurements slightly below, while the cranial portion of the skull, the abdomen, and the circumference of the hands and fingers were above the normal size. The accompanying photograph displays these characters.

London.

THE DIGESTIVE AND OTHER ACTIONS OF APPLES, PEARS, CHERRIES, STRAWBERRIES, ETC.

BY J. GORDON SHARP, M.D. EDIN.

THE value of the soft fruits as an adjunct to the more solid articles of diet has for long been recognised. The salts which they contain have been regarded as useful in building up the tissues by supplying them in the proper combination required by these tissues, while the succulent and indigestible fibrous material has been recognised as a salutary irritating agent to the gut in persons inclined to constipation. So far good, but the succulent fruits possess other properties not so often appreciated but yet as important as those with which we are already so familiar. The first property may be stated as follows. The organic acids contained in fruit unite with the iron of the more solid foodstuffs to form malates, citrates, &c., and these malates, citrates, &c., are acted upon by the digestive juices low down in the gut, where the iron becomes soluble and active. The great advantage is that the iron in this form is non-irritating. As is well known, much of the iron of our food is lost as iron because it passes out of the gut unused, and unused because it is insoluble. This matters little if the hæmoglobin standard is maintained but in anæmia it is a very important point. Here a suitable dietary made up of proteid and a reasonable supply of fruit may "cure" the condition. As I have already said, the acids of the fruit "fix." the iron contained in the proteid forming organic iron salts which are broken up lower down in the alimentary tract and can be employed by the blood tissue. I know it is denied that the organic preparations of iron are of service in anæmia but from this view I dissent because I have again and again proved its fallacy.

The second property possessed by many of the succulent fruits depends on the presence of a ferment or ferments. I do not mean the ferment common to all living tissue, animal as well as vegetable, such a ferment as will split up glucosides, but I mean rather a series of ferments analogous to those found in the pancreas. We have many familiar examples of the operations of the ferment common to vegetable and animal substances. Tincture of kino when kept from one to two years shows signs of gelatinising and this has been proved to be due to the action of a ferment which is present in the gum kino and the action of which is only developed at the end of a lengthened period. Tincture of digitalis at the end of two years begins to lose its efficacy and this loss is due to the glucosides being split up by a ferment. Another example we find in the bitter almond. Ferment and glucoside lie side by side and remain inactive in the dry state but as soon as water is added the ferment becomes active and splits up the glucoside amygdalin into the well-known aldehyde and hydrocyanic acid. As yet another example of ferment action we turn to the animal tissues and note that when the proteid compounds of silver or other metal are brought into contact with the discharges from the eye or from an open wound the compound is broken up. These are all instances of ferments common to all living tissues and possessing no special action, but my chief purpose in the present paper is to call attention to ferments resembling pancreatine in the animal and papaine or bromeline in the vegetable kingdom. I wish to show that many common fruits contain ferments which play the part of papaine and bromeline (the ferment of pineapple) and that they can digest both egg and serum albumin to some limited extent. The following experiments undertaken to prove or disprove the presence of digestive ferments will indicate the drift of my argument.

I.—THE ACTION OF STRAWBERRIES ON ALBUMINS.

The action of the fresh fruit on coagulated egg albumin.—If fresh ripe strawberries are cut into thin slices and spread in double layers over the bottom of a thin glass dish and on the top of this is placed a thin layer of rubbed-up coagulated egg albumin, and on the top of this another double layer of sliced strawberry, the albumin is sandwiched between layers of strawberry and so is continually moistened by the juice of the fruit. Digestion slowly takes place at the end of eight hours' exposure at summer heat. Evidence of digestion of the albumin is obtained in the following manner. The mass of egg albumin and strawberry is mixed with cold water, stirred up, and the whole is filtered twice through paper when a clear filtrate is obtained. To this filtrate ammonium sulphate is added in excess and a dense precipitate falls and on examination it is found to be a proteid, probably an albumose. Compared with this, similar weights of strawberry and albumin examined without being subjected to digestion yielded very sparing precipitates.

The action of strawberry juice on serum albumin.—In this experiment small masses of coagulated serum albumin (prepared from fresh meat) were placed between treble layers of sliced strawberry and exposed as already detailed in the egg albumin experiments. At the end of eight hours the masses of albumin were found to be softened and eroded all around the outside surface. A watery solution of this serum albumin and strawberry compound was dialysed through parchment and the dialysate on being tested for proteid gave a decided rose pink with copper sulphate and caustic potass. In this and the other experiments no qualitative analyses of the particular proteid found were made but one may say that the mere fact of being able to pass through parchment was alone proof of the presence of a high albumose and consequently of considerable digestive activity in the strawberry juice.

II.—THE ACTION OF RIPE CHERRIES ON BOILED EGG ALBUMIN.

If ripe cherries are split open and the surface of each cherry is covered with a thin layer of coagulated egg albumin that has been rubbed up into a fine pulp and each cherry is again closed and laid in a thin glass dish and protected from dust and then exposed to summer heat for eight hours a considerable degree of digestion is found to have taken place. At the end of this period if these prepared cherries be treated with cold water and the whole then filtered twice through paper the filtrate will, with excess of ammonium sulphate, throw down a very large precipitate of proteid. In a control experiment a like amount of plain egg white and cherries gave a sparing precipitate.

Serum albumin exposed in the same way to split cherries shows rather less sign of digestion than in the egg-white experiments. It should be rather the other way, for serum albumin is generally easier of digestion than egg albumin. Comparing white cherries with black cherries, the former are more active than the latter.

The ferment of ripe cherries.—If the pulp of fresh cherries be extracted with cold water and filtered there is obtained a thick fluid containing proteid material and associated with it the ferment of the cherry. To obtain the preparation in a dry state the fluid is poured into great excess of absolute alcohol and set aside for two months, when the proteid becomes slowly coagulated and it can be collected on a filter and dried rapidly at a low temperature to avoid destruction of the ferment. I have prepared it in this manner and have found it active at the end of two years' time, and its property of splitting up glucosides could be readily demonstrated when a small quantity of the dried preparation was placed in a wide-mouthed bottle along with a teaspoonful of cold water and five grains of amygdalin and the whole set aside at a temperature of 76° F. (24° C.) for from six to eight hours. In time the ferment acts on the glucoside amygdalin whereby it is broken up into oil of bitter almonds (detected by its odour) and hydrocyanic acid. The latter is readily detected if a glass plate with a drop of clear nitrate of silver solution on its inside surface be employed as a cover to the wide-mouthed bottle. As soon as the acid appears in the bottle its vapour rises and acts on the transparent nitrate of silver and changes it into milky cyanide of silver.

The evidence of the digestive action of the dry extract can also be elicited by placing a small quantity of it in a 0·2 per cent. hydrochloric acid solution, adding a small amount of rubbed-up egg white, and keeping the mixture at a warm temperature for eight hours with occasional shaking. The proofs of digestive actions were (1) that when the whole mass was placed on a parchment dialyser the clear fluid which came through gave a pink reaction with a weak solution of sulphate of copper in caustic potass; and (2) the further proof was that the clear dialysate on being thrown into alcohol deposited albumose or peptone or both. The presence of the ferment can also be detected in the fresh cherries by splitting up the ripe fruit and spreading over the cut surface a thin layer of amygdalin and leaving it for a few hours at a temperature of 76° F. (24° C.) when the bitter almond odour develops and the presence of hydrocyanic acid is revealed by the silver nitrate test.

III.—THE ACTION OF ORANGE JUICE ON PROTEID.

Orange juice, freed from all admixture of rind, has a slight digestive action on coagulated egg white and it can be proved in the manner I have already mentioned. If amygdalin be added to the fresh juice the bitter almond odour soon develops. The amount of ferment is perhaps greatest when the fruit is at its ripest.

IV.—THE ACTION OF PEAR JUICE ON COAGULATED FIBRIN.

In this experiment ripe pears were cut open and the cut surfaces covered with a thin layer of coagulated blood fibrin and then closed again and exposed at summer heat in a thin glass vessel for eight hours. The clot gradually became softened and finally quite dissolved. The addition of 0·2 per cent. hydrochloric acid to the juice did not help but rather retarded the digestive action of the pears.

V.—THE JUICE OF RIPE APPLES.

The juice of ripe home-grown apples acts much in the same way but less powerfully than pear juice. This part of the subject naturally leads to the consideration of tinned fruits and at once I may say that all tinned fruits are inert as digestives. The prolonged high temperature necessary to their preservation destroys the ferments. On the other hand, baking or stewing fruit does not entirely destroy the ferment unless the heat be very prolonged. A test as to whether or not a cooked fruit is inert is to be found in the presence or absence of the original flavour of the fruit. If a cooked fruit has lost all its flavour then one may say it has lost all its ferment.

PRACTICAL APPLICATION OF THE FOREGOING EXPERIMENTS AND OBSERVATIONS.

To obtain most benefit from the succulent fruits they should be eaten at the end of the chief meal. This is a general rule to which, however, there are some exceptions. Bananas, for example, perhaps have little digestive activity, and besides they are as much a food as a fruit. They may be eaten with any meal and to many people they are most acceptable when they are cut in thin slices and eaten with bread-and-butter. When not quite ripe they may be placed in a hot oven till they are soft. In the same manner apples may be baked in an oven or roasted in front of the fire. Either of these methods preserves the flavour of the fruit.

Stewed fruit is often recommended as a stimulant to the lethargic gut in constipation but in nine cases out of ten no directions are given for its proper use or if directions are given they are of a character little likely to benefit the condition which they are intended to relieve. Six or eight stewed prunes eaten half an hour before breakfast often prove laxative later in the day, while double the number eaten with or after a meal may have no effect as an aperient. Stewed figs or apples may also be eaten before breakfast in cases where the stomach can tolerate them and where the desire is to get a laxative effect with the greatest degree of certainty.

In our climate we cannot enjoy the luxury of ripe oranges but we can obtain a good substitute by eating the fruit in the shape of a salad. If the orange is peeled and then cut into thin slices so that the juice is set free and castor sugar be strewn over the cut slices it is not unlike pine-apple and as an aid to digestion is highly efficacious. Many fruits if eaten when the stomach is comparatively empty give rise to acidity. Grapes are especially harmful in this direction and it is well to bear in mind that grapes should be eaten at the end of the chief meal of the day.

By an intelligent recommendation of the proper use of fruit in our dietary the medical man can do much to counteract the evil influence of those who teach the entire use of fruit as an article of diet. Every medical man now and then comes across patients who have dined for weeks on half a dozen bananas, a pound of strawberries, a pound of uncooked apples, or a pound of grapes or other fruit. Strange to say, it is often the poor creature who is run down who takes to this fruit craze and, as might be expected, the injudicious feeding makes his condition worse. The importance of many of these points I am afraid is not sufficiently appreciated by medical men. Patients nowadays expect us to give them hints not only on what they should eat and what they should avoid, but likewise as to the manner in which their food should be cooked and eaten. We shall do well if we use wisely the new power given into our hands.

Leeds.

ORAL SEPSIS AS A CAUSE OF IRITIS.

BY E. KENNETH CAMPBELL, M.B. EDIN., F.R.C.S. ENG.,
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SYPHILIS and rheumatism have become assigned in ophthalmic literature as the more or less stereotyped causes of iritis, the former for the plastic and the latter for the serous. The ascription of any particular disease to syphilis is often a mere refuge for one's ignorance—*obscurum per* *obscurius.* "Rheumatism" is an indefinite word, often loosely applied, and has, in fact, no precise scientific meaning. Apart from rheumatic fever (due to a specific microbe) and gonorrhœal synovitis (due to the gonococcus), the term "rheumatic" is used vaguely by the surgeon as connoting two special attributes: (a) pain and (b) relapse. With regard to rheumatic fever itself I have never known a case to be complicated by iritis and neither have I met with anyone who has. In children rheumatic fever is very common though iritis is very rare.

There is a lack of scientific evidence of any real etiological connexion between iritis and gonorrhœal synovitis, and I have never seen an instance in which their conjunction has been unequivocal. Certainly one occasionally comes across a case of iritis associated with what has been wittily phrased as that "one touch of rheumatism which makes the whole world kin." The pathology of this ordinary chronic rheumatism is obscure: physicians tell us that it is often incipient or mild rheumatoid arthritis, due no doubt to the action of some toxin which has a predilection for the joint structures. But as this kind of rheumatism is exceedingly common its causal connexion with iritis is open to the objection of the *post hoc ergo propter hoc* fallacy. Adopting the thesis that all disease is the direct result of the action of toxins, in elucidating the causes of iritis our inquiry must be directed as to the "port of entry."

At the last meeting of the British Medical Association Dr. William Hunter further elaborated his well-known views with regard to oral sepsis as a cause of disease. In his very luminous exposition of the subject Dr. Hunter enumerates several diseases which he refers to this cause. He omits, however, all mention of iritis. Since the publication of the paper in question I have seen three cases of iritis in which there was an absolutely negative history of either syphilis or rheumatism in any shape or form. In all the three there was marked evidence of oral sepsis; the alveolar margins along the whole line of teeth were red and inflamed, the gums bled easily, on pressure small beads of pus welled up (pyorrhœa alveolaris), and the breath had a sour smell. They all had the dirty sallow complexions suggestive of septic anæmia. The treatment adopted was the following: the teeth were scaled, stopped, or extracted, suppurating pockets were purified, and the mouth was rendered as pure as possible. This, combined with the use of mydriatics and tonics, cured all the three cases rapidly.

In conclusion, I would therefore urge that the constitutional treatment of iritis should be directed to the removal of oral sepsis, for though about 50 per cent. of cases of iritis are undoubtedly due to syphilis yet even here we must admit the possibility of a mixed infection. In the words of Professor J. Miller: "Their custom—i.e., physicians'—to disregard dental diseases altogether as a factor in pathology is as unjust to their patients as it is discreditable to their profession."

Wimpole street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

◆

29 YEARS OF CATHETER LIFE.

BY R. HINGSTON FOX, M.D. BRUX., M.R.C.P. LOND.

THE patient was a man of massive frame, 6 feet 2 inches in height. He had been accustomed all his life to outdoor pursuits, was very regular in his habits, and had been an abstainer from alcohol and tobacco for many years. When aged about 60 years he began to have difficulty in passing urine and it used to dribble away from him. Later he was examined by Mr. Buxton Shillitoe who found the prostate gland enlarged but passed a catheter without difficulty. The patient soon learned to use a soft gum-elastic catheter for himself and from this time to the end of his life (29 years) he never passed without its aid any urine beyond a few drops. He passed a catheter several times a day and took little or no precautions against sepsis.

About 15 years ago when using the catheter in a hurry he made a false passage, bled freely, and could not relieve himself. As his local medical attendant was unable to pass the catheter Mr. Shillitoe was summoned and succeeded in doing so, relieving him of much clot. After this there was no further difficulty for many years. He retained considerable activity of body and engaged in public duties as an alderman of his county and otherwise until he was about 90 years old. He fell and fractured a fibula at the age of 80 years and fractured the femur of the other leg ten years later, recovering sufficiently to walk in his garden with two sticks.

The patient received the careful attention of Dr. Edmund E. Goodbody in his later years who reports that he took cold some weeks before his death, causing inflammation of the bladder and prostate. For the last eight or ten days there was free hæmorrhage after the use of the catheter and this weakened him much. Attacks of pain at the neck of the bladder occurred and in one of these he died suddenly on Dec. 10th last. He was aged 91 years and four months and had depended on the daily use of the catheter for 29 years. There was no examination of the body.

Weymouth-street, W.

A CASE OF MYXŒDEMA WITHOUT LOSS OF HAIR.

BY CHARLES W. CHAPMAN, M.D. DURH., M.R.C.P. LOND.,

SENIOR PHYSICIAN TO THE NATIONAL HOSPITAL FOR DISEASES OF THE HEART.

THE patient, a woman, aged 48 years, the mother of three children, came under my care in October, 1904. She complained of increasing inability for exertion of mind and body, unsteadiness of gait, great impairment of memory, tendency to fall asleep in the chair at any time of the day, severe lumbar pains, neuralgic pains followed by numbness down both arms, especially the right, loss of appetite, menorrhagia, and general puffiness. Her general health had been very good up to five years previously, when the menstrual loss became excessive and the periods recurred with increasing frequency until the patient was never more than from eight to ten days free. The flow was so profuse as to necessitate complete rest in bed for the first three days. A gynæcologist was consulted who, finding no growth or other abnormal condition of the uterus, attributed the symptom to the change of life and prescribed an ergot mixture to be taken during the periods.

On examination there were general puffiness with large supraclavicular pads, large tongue, flushed cheeks, and the external canthi were sloppy-looking from mucin (a sign of myxœdema to which I called attention some years ago)—in fact, the whole appearance was typical of myxœdema with the exception that there was no loss of hair. On the contrary, the patient had an exceptionally fine head of hair.

The improvement under the usual treatment was soon evident, one of the first signs of which was the marked diminution in the menorrhagia without the assistance of special drugs. The patient is at the present time in a normal state of health and appearance, she can walk for miles, the lumbar pains have gone, and the neuralgia in the arms is fast subsiding.

It is interesting to note that two weeks after the thyroid had been taken the hair combed out more freely than ordinarily for a few days and then this ceased. This circumstance suggests that had treatment been much longer delayed the hair would have suffered. Thinning of the hair is generally one of the early signs of myxœdema. I have seen a fair number of cases of this disease but never one presenting all the usual features of the disease in which the hair was unaffected. This case illustrates how a correct diagnosis may be missed through the absence of one only of the classical signs of a particular disease and, as a consequence, the beneficial effects of appropriate treatment may be needlessly delayed.

Weymouth-street, W.

A CASE OF CUT-THROAT.

BY JOHN M. BRYAN, L.R.C.P. LOND., M.R.C.S. ENG.

ON Saturday night, May 6th, at about 9.45 o'clock, a sharp pull at my door bell was followed by the entrance of a policeman requesting me to go at once to a case of cut-throat in a house about a quarter of a mile away. Hastily picking up a pocket case and bandages I hurried after him.

On reaching the dark street I was directed by the neighbours standing about to the house. On entering I rushed up the short flight of stairs and found the narrow doorway of a small back room blocked up by the back of a policeman. On squeezing by him I saw that he was supporting a form partly lying on the floor which was covered in blood; another was holding a candle. A glance showed that the patient was quite dead. The police had placed a wet towel round his neck. On removing this I found that a most determined attempt had been made, producing a regular and very smoothly clean-cut wound running transversely right through the thyro-hyoid membrane down to the gullet, without damaging the latter but severing the contiguous large vessels. The cut windpipe was widely gaping and the parts looked pale; all bleeding had, of course, stopped. Both ends of the wound were alike, each end being at a distance of two inches from the tip of the nearest ear. On examining the body afterwards at the mortuary I found that the blood had trickled down inside the shirt as far as the pubes. There was blood also on both hands but no other mark of injury.

It appeared that this young single man, aged 28 years, had been out of work for several months but had got into work again the week before this occurrence. He came indoors partly intoxicated, ate his supper, and afterwards had a few words with his parents because his bicycle had been removed from the hall and carried upstairs to his bedroom, which proceeding put him into a passion, so he went upstairs and cut his throat in the dark. I was informed that the razor was found on a low box on *the left-hand side* of him.

In his remarks to the jury the coroner, who was evidently unaware that it is sometimes difficult to judge of the direction in which the wound is made, whether from the left (the usual direction) or the right side, stated that the medical evidence did not help them much, and went out of his way to say further that he was surprised that a man of my experience should not have noticed sufficiently to be able to state which hand was used (which was not correct). This case illustrates the difficulty which sometimes exists of being able to state from an examination of the wound in which direction the cut is made. There was no evidence or suspicion of foul play and I told the jury that it was my opinion that the injury was self-inflicted.

Northampton.

A Mirror
OF
HOSPITAL PRACTICE,
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Nulla autem est alia pro certo noscendi via, nisi quamplurimas et orborum et dissectionum historias, tum aliorum tum proprias llectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. orb.*, lib. iv., Procemium.

ROYAL FREE HOSPITAL.

A CASE OF POST-ORBITAL ANEURYSM.

(Under the care of Mr. JAMES BERRY.)

FOR the notes of the case we are indebted to Dr. Mildred I. Burgess, late house surgeon.

The patient, a woman, aged 45 years, married, was dmitted to the Royal Free Hospital on July 18th, 1904. he had had eight children. The last confinement took lace five years ago. Within 12 hours of the birth of the hild she suddenly felt intense pain in the head, chiefly over he right orbit. It was followed immediately by a snap, s if something had burst in the head, and was accom- anied with a loud, rushing sound. Three weeks later her nental condition became impaired. She was sleepless and alkative, mistook identities, and had olfactory and visual allucinations. Proptosis and ptosis of the right eye deve- oped together with complete anæsthesia of the right side of he face. She had great thirst and passed large quantities of rine. She remained at home for the next three months but s her mental condition did not improve she was removed to 3ethlem Hospital. While there she was depressed, being nable to occupy herself or to keep her attention fixed. There was slight rigidity of the extremities. She had hallucinations of vision and smell but these soon disappeared. There was some deafness of the right ear in which she heard a rushing sound and a murmur synchronous with the pulse could be heard with the stethoscope above the right ear. The right eye was anæsthetic; there were severe conjunctivitis and a corneal ulcer. There was further a paralytic internal squint of the right eye. The conjunctivitis and ulcer disappeared under treatment.

Mentally the patient was an ordinary melancholiac. Her mental condition slowly improved but the physical signs were present when she was discharged. On regaining her reason she became conscious of a rushing, hissing noise in the head which she likened to the sound of a saw-mill. She said that she could stop this by pressure on the neck. Since this time till admission to the hospital she was troubled with the following symptoms: (1) Severe pain in the head, always present, but varying in intensity, sufficiently great to prevent sleep and to require morphine daily; (2) a rushing noise in the head; (3) impairment of vision in the right eye; (4) loss of sensation and movement in the right eye; and (5) anæsthesia of the right side of the forehead, the upper part of the right side of the face, and the top of the head. The family history was of no interest. There was no insanity in the family. The only point of interest in the past history was the fact that after a confinement nine years ago she had a hæmorrhage from the right ear.

On admission the patient was stout, pale, and unhealthy-looking; the skin was waxy and the mucous membranes were anæmic. Examination of the urine pointed to a condition of chronic interstitial nephritis; its specific gravity varied between 1010 and 1012; a faint trace of albumin was present; the urea was 0 8 per cent.; the average amount of urine was 40 ounces per diem. The heart's action was extremely feeble, the sounds being very faint. No murmurs could be detected. There was nothing abnormal in the lungs. The right eye presented the following appearances: proptosis and ptosis; an oval ulcerated patch over the lower part of the cornea and below this a leash of injected vessels. The cornea was insensitive. The pupil did not react to light or accommodation. There was no discolouration of the iris; it dilated under atropine. The upper eyelid could not be raised to the full extent but the eye could be completely shut. The sight was impaired owing to corneal ulceration. Pulsation in and around the eyeball was not detected. The ophthalmoscopic appearance of the disc could not be made out owing to the blurring of the cornea. Over the right temple a distinct but distant systolic bruit could be heard. Examination of the cranial nerves on the right side showed the following to be affected: third and fourth, paresis of the muscles supplied by these—i.e., some ptosis, weakness of the internal rectus, poor rotatory movements. The up-and-down movements were good. Sixth, complete paralysis of the external rectus. Fifth, the ophthalmic and superior maxillary branches were affected—i.e., anæsthesia of the cornea and the face. The muscles of mastication were unaffected. The other cranial nerves were normal. There was no interference with the motor and sensory systems in the limbs and trunk. The reflexes were normal. There were no interference with the lumbar centres and no trophic changes.

The following diagnosis was made. Idiopathic aneurysm of the right internal carotid in the neighbourhood of the cavernous sinus involving the sixth, the superior maxillary and ophthalmic branches of the fifth, and the third and fourth nerves partially, probably produced by embolism due to a clot formed in the left auricle, the circulation having been depressed by exhaustion or hæmorrhage consequent on the confinement.

As regards treatment, before admission the patient had undergone a course of treatment with iodides with no result. Mr. Berry proposed to tie the right internal carotid in the neck.

On July 22nd the internal carotid was tied about one inch above the bifurcation of the common carotid. The operation was performed in the usual way and presented no difficulty. After ligature no alteration in the pulse at the wrist was observed, nor was the action of the heart interfered with in any way. The patient stood the operation well. The after-effects were very satisfactory. The rushing noise in the head ceased from the time of the operation. The patient could not hear it nor could a murmur be detected with the stethoscope. There were no mental symptoms. She still complained of pain but slept without morphine. The *obscurius.* "Rheumatism" is an indefinite word, often loosely applied, and has, in fact, no precise scientific meaning. Apart from rheumatic fever (due to a specific microbe) and gonorrhœal synovitis (due to the gonococcus), the term "rheumatic" is used vaguely by the surgeon as connoting two special attributes: (*a*) pain and (*b*) relapse. With regard to rheumatic fever itself I have never known a case to be complicated by iritis and neither have I met with anyone who has. In children rheumatic fever is very common though iritis is very rare.

There is a lack of scientific evidence of any real etiological connexion between iritis and gonorrhœal synovitis, and I have never seen an instance in which their conjunction has been unequivocal. Certainly one occasionally comes across a case of iritis associated with what has been wittily phrased as that "one touch of rheumatism which makes the whole world kin." The pathology of this ordinary chronic rheumatism is obscure: physicians tell us that it is often incipient or mild rheumatoid arthritis, due no doubt to the action of some toxin which has a predilection for the joint structures. But as this kind of rheumatism is exceedingly common its causal connexion with iritis is open to the objection of the *post hoc ergo propter hoc* fallacy. Adopting the thesis that all disease is the direct result of the action of toxins, in elucidating the causes of iritis our inquiry must be directed as to the "port of entry."

At the last meeting of the British Medical Association Dr. William Hunter further elaborated his well-known views with regard to oral sepsis as a cause of disease. In his very luminous exposition of the subject Dr. Hunter enumerates several diseases which he refers to this cause. He omits, however, all mention of iritis. Since the publication of the paper in question I have seen three cases of iritis in which there was an absolutely negative history of either syphilis or rheumatism in any shape or form. In all the three there was marked evidence of oral sepsis; the alveolar margins along the whole line of teeth were red and inflamed, the gums bled easily, on pressure small beads of pus welled up (pyorrhœa alveolaris), and the breath had a sour smell. They all had the dirty sallow complexions suggestive of septic anæmia. The treatment adopted was the following: the teeth were scaled, stopped, or extracted, suppurating pockets were purified, and the mouth was rendered as pure as possible. This, combined with the use of mydriatics and tonics, cured all the three cases rapidly.

In conclusion, I would therefore urge that the constitutional treatment of iritis should be directed to the removal of oral sepsis, for though about 50 per cent. of cases of iritis are undoubtedly due to syphilis yet even here we must admit the possibility of a mixed infection. In the words of Professor J. Miller: "Their custom—i.e., physicians'—to disregard dental diseases altogether as a factor in pathology is as unjust to their patients as it is discreditable to their profession."

Wimpole-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

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29 YEARS OF CATHETER LIFE.

BY R. HINGSTON FOX, M.D. BRUX., M.R.C.P. LOND.

THE patient was a man of massive frame, 6 feet 2 inches in height. He had been accustomed all his life to outdoor pursuits, was very regular in his habits, and had been an abstainer from alcohol and tobacco for many years. When aged about 60 years he began to have difficulty in passing urine and it used to dribble away from him. Later he was examined by Mr. Buxton Shillitoe who found the prostate gland enlarged but passed a catheter without difficulty. The patient soon learned to use a soft gum-elastic catheter for himself and from this time to the end of his life (29 years) he never passed without its aid any urine beyond a few drops. He passed a catheter several times a day and took little or no precautions against sepsis.

About 15 years ago when using the catheter in a hurry he made a false passage, bled freely, and could not relieve himself. As his local medical attendant was unable to pass the catheter Mr. Shillitoe was summoned and succeeded in doing so, relieving him of much clot. After this there was no further difficulty for many years. He retained considerable activity of body and engaged in public duties as an alderman of his county and otherwise until he was about 90 years old. He fell and fractured a fibula at the age of 80 years and fractured the femur of the other leg ten years later, recovering sufficiently to walk in his garden with two sticks.

The patient received the careful attention of Dr. Edmund E. Goodbody in his later years who reports that he took cold some weeks before his death, causing inflammation of the bladder and prostate. For the last eight or ten days there was free hæmorrhage after the use of the catheter and this weakened him much. Attacks of pain at the neck of the bladder occurred and in one of these he died suddenly on Dec. 10th last. He was aged 91 years and four months and had depended on the daily use of the catheter for 29 years. There was no examination of the body.

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THE patient, a woman, aged 48 years, the mother of three children, came under my care in October, 1904. She complained of increasing inability for exertion of mind and body, unsteadiness of gait, great impairment of memory, tendency to fall asleep in the chair at any time of the day, severe lumbar pains, neuralgic pains followed by numbness down both arms, especially the right, loss of appetite, menorrhagia, and general puffiness. Her general health had been very good up to five years previously, when the menstrual loss became excessive and the periods recurred with increasing frequency until the patient was never more than from eight to ten days free. The flow was so profuse as to necessitate complete rest in bed for the first three days. A gynæcologist was consulted who, finding no growth or other abnormal condition of the uterus, attributed the symptom to the change of life and prescribed an ergot mixture to be taken during the periods.

On examination there were general puffiness with large supraclavicular pads, large tongue, flushed cheeks, and the external canthi were sloppy-looking from mucin (a sign of myxœdema to which I called attention some years ago)—in fact, the whole appearance was typical of myxœdema with the exception that there was no loss of hair. On the contrary, the patient had an exceptionally fine head of hair.

The improvement under the usual treatment was soon evident, one of the first signs of which was the marked diminution in the menorrhagia without the assistance of special drugs. The patient is at the present time in a normal state of health and appearance, she can walk for miles, the lumbar pains have gone, and the neuralgia in the arms is fast subsiding.

It is interesting to note that two weeks after the thyroid had been taken the hair combed out more freely than ordinarily for a few days and then this ceased. This circumstance suggests that had treatment been much longer delayed the hair would have suffered. Thinning of the hair is generally one of the early signs of myxœdema. I have seen a fair number of cases of this disease but never one presenting all the usual features of the disease in which the hair was unaffected. This case illustrates how a correct diagnosis may be missed through the absence of one only of the classical signs of a particular disease and, as a consequence, the beneficial effects of appropriate treatment may be needlessly delayed.

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It appeared that this young single man, aged 23 years, had been out of work for several months but had got into work again the week before this occurrence. He came indoors partly intoxicated, ate his supper, and afterwards had a *few words* with his parents because his bicycle had been removed from the hall and carried upstairs to his bedroom, which proceeding put him into a passion, so he went upstairs and cut his throat in the dark. I was informed that the razor was found on a low box on *the left-hand side* of him.

In his remarks to the jury the coroner, who was evidently unaware that it is sometimes difficult to judge of the direction in which the wound is made, whether *from* the left (the usual direction) or the right side, stated that the medical evidence did not help them much, and went out of his way to say further that he was surprised that a man of my experience should not have noticed sufficiently to be able to state which hand was used (which was not correct). This case illustrates the difficulty which sometimes exists of being able to state from an examination of the wound in which direction the cut is made. There was no evidence or suspicion of foul play and I told the jury that it was my opinion that the injury was self-inflicted.

Northampton.

A Mirror

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FOR the notes of the case we are indebted to Dr. Mildred M. Burgess, late house surgeon.

The patient, a woman, aged 45 years, married, was admitted to the Royal Free Hospital on July 18th, 1904. She had had eight children. The last confinement took place five years ago. Within 12 hours of the birth of the child she suddenly felt intense pain in the head, chiefly over the right orbit. It was followed immediately by a snap, as if something had burst in the head, and was accompanied with a loud, rushing sound. Three weeks later her mental condition became impaired. She was sleepless and talkative, mistook identities, and had olfactory and visual hallucinations. Proptosis and ptosis of the right eye developed together with complete anæsthesia of the right side of the face. She had great thirst and passed large quantities of urine. She remained at home for the next three months but as her mental condition did not improve she was removed to Bethlem Hospital. While there she was depressed, being unable to occupy herself or to keep her attention fixed. There was slight rigidity of the extremities. She had hallucinations of vision and smell but these soon disappeared. There was some deafness of the right ear in which she heard a rushing sound and a murmur synchronous with the pulse could be heard with the stethoscope above the right ear. The right eye was anæsthetic; there were severe conjunctivitis and a corneal ulcer. There was further a paralytic internal squint of the right eye. The conjunctivitis and ulcer disappeared under treatment.

Mentally the patient was an ordinary melancholiac. Her mental condition slowly improved but the physical signs were present when she was discharged. On regaining her reason she became conscious of a rushing, hissing noise in the head which she likened to the sound of a saw-mill. She said that she could stop this by pressure on the neck. Since this time till admission to the hospital she was troubled with the following symptoms: (1) Severe pain in the head, always present. but varying in intensity, sufficiently great to prevent sleep and to require morphine daily; (2) a rushing noise in the head; (3) impairment of vision in the right eye: (4) loss of sensation and movement in the right eye; and (5) anæsthesia of the right side of the forehead, the upper part of the right side of the face, and the top of the head. The family history was of no interest. There was no insanity in the family. The only point of interest in the past history was the fact that after a confinement nine years ago she had a hæmorrhage from the right ear.

On admission the patient was stout, pale, and unhealthy-looking: the skin was waxy and the mucous membranes were anæmic. Examination of the urine pointed to a condition of chronic interstitial nephritis; its specific gravity varied between 1010 and 1012; a faint trace of albumin was present: the urea was 0·8 per cent.; the average amount of urine was 40 ounces per diem. The heart's action was extremely feeble, the sounds being very faint. No murmurs could be detected. There was nothing abnormal in the lungs. The right eye presented the following appearances: proptosis and ptosis; an oval ulcerated patch over the lower part of the cornea and below this a leash of injected vessels. The cornea was insensitive. The pupil did not react to light or accommodation. There was no discolouration of the iris; it dilated under atropine. The upper eyelid could not be raised to the full extent but the eye could be completely shut. The sight was impaired owing to corneal ulceration. Pulsation in and around the eyeball was not detected. The ophthalmoscopic appearance of the disc could not be made out owing to the blurring of the cornea. Over the right temple a distinct but distant systolic bruit could be heard. Examination of the cranial nerves on the right side showed the following to be affected: third and fourth, paresis of the muscles supplied by these—i.e., some ptosis, weakness of the internal rectus, poor rotatory movements. The up-and-down movements were good. Sixth, complete paralysis of the external rectus. Fifth, the ophthalmic and superior maxillary branches were affected—i.e., anæsthesia of the cornea and the face. The muscles of mastication were unaffected. The other cranial nerves were normal. There was no interference with the motor and sensory systems in the limbs and trunk. The reflexes were normal. There were no interference with the lumbar centres and no trophic changes.

The following diagnosis was made. Idiopathic aneurysm of the right internal carotid in the neighbourhood of the cavernous sinus involving the sixth, the superior maxillary and ophthalmic branches of the fifth, and the third and fourth nerves partially, probably produced by embolism due to a clot formed in the left auricle, the circulation having been depressed by exhaustion or hæmorrhage consequent on the confinement.

As regards treatment, before admission the patient had undergone a course of treatment with iodides with no result. Mr. Berry proposed to tie the right internal carotid in the neck.

On July 22nd the internal carotid was tied about one inch above the bifurcation of the common carotid. The operation was performed in the usual way and presented no difficulty. After ligature no alteration in the pulse at the wrist was observed, nor was the action of the heart interfered with in any way. The patient stood the operation well. The after-effects were very satisfactory. The rushing noise in the head ceased from the time of the operation. The patient could not hear it nor could a murmur be detected with the stethoscope. There were no mental symptoms. She still complained of pain but slept without morphine. The stitches were removed on the sixth day. Primary union resulted. The patient was discharged on August 3rd.

After leaving the hospital the patient was attended by her private medical attendant (Mr. Cyril E. Hogan of Clapham) and was not seen again till Oct. 12th, 1904. She then reported that her general health had been very poor but she had had no return of the rushing noise; the pain was less severe, occurring only in attacks which were lessening in frequency and intensity. The sensation in the face had slightly improved. The local condition of the eye remained the same except that proptosis was not so marked. She died at the end of May, 1905. The kidneys were the cause of all her trouble latterly. The operation was an entire success; there was no further trouble so far as the aneurysm was concerned.

BOLTON INFIRMARY.

THREE CASES OF PERFORATING GASTRIC ULCER.

(Under the care of Mr. R. D. MOTHERSOLE.)

CASE 1.—The patient, a female, aged 22 years, was admitted to the Bolton Infirmary on Nov. 10th, 1900, suffering from gastric ulcer. On Dec. 4th she was seized with a sudden pain in the epigastrium; she complained of great tenderness on pressure over the stomach and there was much rigidity of the abdominal muscles in that region. A diagnosis of perforating gastric ulcer was made and the abdomen was opened in the middle line above the umbilicus. There was no free gas or fluid in the peritoneal cavity and no perforation could be found on the anterior surface of the stomach. It was considered that if a perforation had occurred it was shut off by adhesions and the abdominal incision was closed. The patient's condition improved considerably after the operation and she left the infirmary on Feb. 4th, 1901. After this her stomach continued to trouble her and in June, 1903, she again came to the out-patient department. She was then very anæmic and complained of frequent attacks of hæmatemesis, with much pain in the epigastrium, especially after food. She became an in-patient on June 24th and was then extremely anæmic; her pulse was 130 and her respirations were 40 per minute. There were evidence of cardiac dilatation, a bruit at the root of the neck, œdema of the legs and feet, and enlargement of both the liver and spleen. She complained of occipital and temporal headache. The urine was alkaline, of specific gravity 1006, and contained a trace of albumin. Her condition improved slightly for a time but towards the end of July she had several attacks of hæmatemesis; a very severe one occurred on July 24th, in which she was said to have lost about two pints of blood. On August 11th, therefore, it was decided to operate.

At the operation the tissues were extremely anæmic, the blood was very pale and thin, and considerable oozing took place from the cut surfaces. The stomach was not dilated and no ulcer could be felt on either anterior or posterior surface but the cardiac end appeared to be fixed by adhesions. A posterior gastro jejunostomy was performed in the hope that the ulcer would have a better chance to heal. The patient rallied well after the operation and felt much more comfortable for a few days, with no vomiting and no abdominal pain. On August 15th she was allowed a small amount of peptonised diluted milk and as this was well tolerated she was given a little chicken-broth and malted milk on the following day. But on the 17th she began to vomit and continued to do so frequently until her death on the 21st. The vomit contained a large amount of altered blood. Shortly before her death she complained of severe pain in the epigastrium with much tenderness and marked rigidity but she was then in too bad a condition for any further operation.

Necropsy.—At the post-mortem examination the peritoneal cavity contained a considerable quantity of yellow turbid fluid. The cardiac end of the stomach was firmly adherent to the spleen, which was about twice the normal size. On opening the stomach a rounded aperture was found at the cardiac end of about the size of a five-shilling piece. The edges of the opening were smooth and it led into a cavity in the spleen which extended right through the substance of that organ and on its outer side was only bounded by the peritoneum. This was sloughing and had given way at one point. Nothing could be found on the gastric mucous membrane suggestive of any recent hæmorrhage.

CASE 2.—The patient, a girl, aged 19 years, had for about 12 months suffered from symptoms of gastric ulcer. On Jan. 15th, 1903, about 1 P.M., shortly after her dinner, she was seized with an acute pain in the epigastrium. She went to bed and slept but awoke at 4 P.M. with excruciating pain over the stomach. When seen at 5 P.M. she was in great distress and writhing with pain. There were much abdominal tenderness and muscular rigidity extending downwards below the umbilicus. The diagnosis of gastric perforation was clear and after a hypodermic injection to relieve her distress she was removed to the infirmary. On admission she was obviously collapsed; her pulse was 120, small, and weak. She was operated on at 6 P.M.—i.e., five hours after the onset of the attack but probably only two hours after the first escape of gastric contents.

On opening the peritoneum some turbid fluid and a little gas escaped. The perforation was on the anterior surface of the stomach a little to the left of the centre and near the lesser curvature. The ulcer, or at any rate the greater part of it, was rapidly excised with scissors one blade of which was passed into the stomach through the perforation. The whole thickness of the stomach wall was then sewn up with a continuous suture of strong catgut, so that the line of suture was at right angles to the long axis of the stomach. Outside this a continuous Lembert suture of fine silk was inserted. The peritoneum was then cleansed thoroughly by systematic swabbing, a small incision being made below the umbilicus in order to reach the pelvis more easily. A Keith's tube was left in the lower opening but the upper one was entirely closed. The patient's progress was quite uneventful and at no time after the operation did she look really ill. She left the infirmary on Feb. 17th. She has since had some dyspeptic trouble but is now quite well.

CASE 3.—The patient, a man, aged 28 years, was admitted to the Bolton Infirmary on April 11th, 1904, complaining of abdominal pain, vomiting, flatulence, and loss of flesh. His illness began about two years previously with occasional attacks of abdominal pain and flatulence and in October, 1903, he began to vomit after food and to get thinner. The vomit contained altered blood. On admission he appeared to be much emaciated and complained of dull pain in the epigastrium, usually coming on two hours after food and relieved by vomiting about four hours after food. A tumour could be felt in the situation of the pylorus. His weight on admission was 114 pounds, ten days later it had risen to 115½ pounds, but in another eight days it had fallen to 113½ pounds. The case was considered to be one of gastric ulcer with some pyloric obstruction, the stomach being somewhat dilated. It was proposed to perform a gastro-jejunostomy, but at the beginning of May his condition improved, he felt much easier and increased in weight. On May 9th, however, at 5 A.M. he was seized with violent pain at the pit of the stomach. Owing to unavoidable circumstances the patient was not operated on until noon.

At the operation a perforation was found on the anterior surface of the stomach of about the size of a threepenny-piece, nearer the greater curvature than the lesser, and about three-fourths of an inch from the pylorus. The pyloric end of the stomach was much thickened and there were some enlarged glands in the small omentum but the swelling did not seem to be of a malignant nature. The base of the ulcer was slit up with scissors through the perforation in a direction parallel to the long axis of the pyloric end of the stomach when it was found that the little finger could be easily passed into the duodenum. The ulcer was then partially excised. As its lower margin extended beyond the greater curvature it was thought better not to remove the whole of the thickened base of the ulcer in that direction. The edges of the incision were then united by a continuous catgut suture, passing through all the coats, so that the line of suture was at right angles to the pyloric axis. Owing to the rigidity of the tissues a fair amount of tension was needed to bring the edges together. A continuous silk Lembert suture was employed to cover in the catgut suture. The peritoneum was then well sponged out through the one incision, after which the opening was entirely closed. The patient's condition towards the end of the operation was too bad to allow a gastro-jejunostomy to be performed and it was thought that if he survived it could be done later if necessary.

For two days after the operation the pulse remained at about 120 and the patient complained of very severe pain in the epigastrium, probably due to the tension on the sutures in the stomach. After this he steadily improved and soon declared that his stomach felt much better than before the operation. His temperature never rose above 99°F. He naturally lost weight for a time after the operation but as soon as he was allowed food he was always hungry. By June 13th his weight had risen to 122 pounds and when he left the infirmary on June 17th he felt better than he had done for years. Four months later he weighed 152 pounds, and though he said that the scar in the abdominal wall felt weak when he had to lift three-quarters of a hundredweight he maintained that his stomach was "all right inside."

Remarks by MR. MOTHERSOLE.—There can be little doubt that in Case 1 there was a perforation of the stomach in December, 1900. This was probably small and became occluded with lymph which glued the stomach to the anterior surface of the spleen. Ulceration went on and eroded the spleen substance, and it appears certain that the frequent and severe hæmorrhages from which the patient suffered came from the splenic vessels. It does not seem that much could have been done for the patient by operation in August, 1903. The only operation that could have relieved her then would have been excision of the spleen with closure of the gastric opening. And in her condition at that time she could not have stood such a severe operation. In the light of after events it seems unfortunate that a more vigorous search was not made for the perforation in 1900, even to the extent of breaking down the limiting adhesions. This case shows the risks which adhesion of a gastric ulcer to another organ involves. It would seem advisable in most cases when a perforated gastric ulcer appears to have been occluded without operation to search for, and to excise, it in order to prevent subsequent trouble. Adhesion to a solid organ is likely to hinder healing of the ulcer by preventing contraction of the base.

In Case 3 we were fortunate in having the patient in hospital at the time of perforation and though the operation was not performed so soon as it should have been the patient did not have to suffer the pains and other drawbacks of a journey. The operation had the effect of a pyloroplasty and seemed entirely to relieve the gastric retention from which he suffered. It seems a matter for congratulation that a gastro-jejunostomy was not done when first proposed. If perforation had occurred shortly after the symptoms might have been attributed to the operation.

Recoveries after operation for perforating gastric ulcer have of late years been comparatively common and one almost feels it necessary to apologise for publishing such cases. Yet it is worth while to remember that ten years ago such recovery was almost unknown. Mr. A. W. Mayo Robson's first successful operation for this condition was in 1897. About 16 years ago two patients suffering from peritonitis were admitted to the wards of one of the largest London hospitals. Each was operated on by a distinguished surgeon but in neither case was the existence of a perforation of the stomach discovered until the post-mortem examination. Since then abdominal surgery has made immense progress. I must own to having had three unsuccessful operations for perforating gastric ulcer before I met with a success: one of these was very disappointing and lived for nearly a fortnight after the operation, dying from gastric hæmorrhage and hypophrenic abscess. It is satisfactory to be able to say that the last three operations which I have seen for this condition at the Bolton Infirmary have all been successful.[1]

I am glad to find that Robson and Moynihan in their book on "Diseases of the Stomach" speak so decidedly on the point of "absence of liver dulness" in perforating gastric ulcer. "Its presence or absence is void of any significance, and is unreliable as an aid to diagnosis." Personally, I have never attached any importance to the absence of this sign and in at least six cases have not found sufficient free gas in the peritoneum to give rise to it. It is conceivable that absence of liver dulness may be due to any one of three conditions: (1) distension of the intestines with gas, causing them to overlap the liver; (2) the presence of a certain amount of fluid in the peritoneum allowing the bowel to float up over the liver; and (3) free gas in the peritoneum. In the first of Mr. H. S. Clogg's interesting series of perforated duodenal ulcers[2] he states that the clinical phenomena pointed to the presence of free gas and fluid in the peritoneum, but on opening the abdomen he only says that fluid escaped. If no free gas was found at the operation the signs which were considered to indicate its presence were probably due to the presence of fluid with some distension of the bowels.

ROYAL BUCKINGHAMSHIRE HOSPITAL, AYLESBURY.

A CASE OF SURGICAL EMPHYSEMA RESULTING FROM A FALL.

(Under the care of MR. HORACE ROSE.)

For the notes of the case we are indebted to Mr. Russell E. Palmer, house surgeon.

The patient, a boy, aged six years, was taken to the hospital with a history of a sudden fall over a step ten or 15 minutes previously. On admission his neck was very much swollen, the swelling extending up both sides of the face, and involving the lower right eyelid which could scarcely be opened. His respirations were 30, the pulse was 100, and the colour was good (although he was said to have been slightly "blue"). There was no wound involving the skin anywhere, the nose was uninjured, and there was no air in the pleural cavities. The swelling was soft, doughy, and gave the characteristic crepitus of air in the subcutaneous tissues. He complained at the time of the accident of pain over the trachea but afterwards of none in any particular region although he was tender over all the swelling. His voice was a little husky and he coughed but little, bringing up neither mucus nor blood. The emphysema extended rapidly and spread to the other eyelids, the whole of the chest wall, and part of the abdomen. The child was kept in bed, no special treatment being adopted. On the evening of the second day he developed a temperature of 104°F. but by the following morning it was normal again. The air was rapidly absorbed and the patient left hospital quite well at the end of a week.

Remarks by MR. PALMER.—The explanation of the emphysema seems to be that in falling the head was thrown suddenly and violently back, rupturing part of one of the intertracheal muscles with the underlying mucous membrane, thus allowing the escape of air from the trachea.

Medical Societies.

EDINBURGH OBSTETRICAL SOCIETY.—A meeting of this society was held on July 12th, Professor A. R. Simpson, Vice-President, being in the chair.—Dr. F. W. N. Haultain read a paper on a series of cases of "Axial Rotation" in its Relation to the Pelvic Generative Organs. He said that the abdominal pelvic organs from their moveable character were liable to rotation of their attachments. Out of 16 cases met with in pelvic abdominal surgery two were associated with uterine growths and in 14 the ovary was implicated. The 16 cases were composed of 12 simple ovarian tumours, one ovarian cyst with pregnancy, one normal ovary, one subserous pedunculated fibromyoma, and one rotation of the entire uterus with interstitial fibroid growth. Twists of the pedicle might for clinical purposes be considered as acute permanent, acute temporary, or chronic permanent. Rotation of the pedicle must interfere with the normal circulation of the affected organ, particularly obstructing the venous return, giving rise to all the conditions associated with venous congestion. In one case intense symptoms arose from a two-thirds axial uterine rotation, yet no acute symptoms arose in another case with a narrow pedicle twisted four times. The symptoms associated with twisting of the pedicle and acute strangulation were intense pain in the abdomen, shock, fever, and rapid pulse; these were the same symptoms as those of acute strangulation of the gut without stercoraceous vomiting. Chronic or slow twists might have none of these symptoms and only became apparent during the progress of an operation. Pain, though frequently met with, might be entirely absent, even with strong adhesions to the surrounding structures. Dr. Haultain gave details of a case where acute symptoms with a temperature of 101·5°F. were produced by a congested hard fibromyomatous tumour

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[1] Since writing the above we have had two more successful operations for perforating gastric ulcer at the Bolton Infirmary, making five consecutive recoveries. One of these was in a patient on whom I had done a gastro-jejunostomy two and a half years before.

[2] Brit. Med. Jour., Jan. 21st, 1905.

Unfertilised Starfish Eggs, and lastly in this group, the Methods and Sources of Error in Experiments on Artificial Parthenogenesis. On more general problems we find the question, "Why is the regeneration of protoplasmic fragments without a nucleus difficult or impossible?" The answer of the author is "that the nucleus is the organ of oxidation of living matter and that fragments of cells without a nucleus are not able to regenerate because their oxidative activity has fallen to too low a point. Such pieces die slowly from asphyxia." The author does not believe that without the nucleus all processes of oxidation cease in the protoplasm; it is only markedly decreased.

Amongst other questions of interest are the following. "Has the central nervous system any influence upon the metamorphosis of larvæ?" The author finds that in Amblystoma larvæ at least division of the spinal cord behind the cervical region did not have even the slightest effect in a single instance upon the processes of development. Akin to the subjects of heliotropism and geotropism is "The Theory of Galvanotropism" (1896), as exemplified on the polar stimulation by the constant current of the glands of the skin of Amblystoma. The author finds that stimulation always occurs at the anodal side of the central nervous system, an exception to Pflüger's law.

A short paper of four pages, entitled "Physiological Problems of To-day," is well worthy of perusal for its stimulating originality and condensed exposition of the fundamental problems of physiology, being the substance of an address delivered in 1897, when the speaker was limited to ten minutes.

This analysis of the chief contributions is all too short to convey an adequate idea of the wealth of interest set forth in these two handsome volumes. These "Studies in General Physiology" touch the bed-rock of the life-problem and present it from many aspects. It is not necessary to agree with the author in all his views; here can be no question that marked originality coupled with assiduous labour and inventive ingenuity characterise the work of Jacques Loeb. Imagination in the best sense of the word has played its part and subjects, at first sight far apart, have been brought together to yield their quota of evidence to support the views of the author. The students of biology, of physiology, and of psychology will find much in these volumes to excite their scientific imagination and to enlarge the horizon of their view of what is called "General Physiology," and each and all of these students must feel that the University of Chicago has conferred a boon on biologists, while "the men and women of our time and country who, by wise and generous giving, have encouraged the search after truth in all departments of knowledge," must rejoice that these decennial publications—issued in commemoration of the first ten years of the University's existence—form a noble record of work achieved and a happy augury of a rich harvest in the future.

LIBRARY TABLE.

The Annual Charities Register and Digest, 1905. London: Longmans, Green and Co., and the Charity Organisation Society. Pp. ccxxvi.-665, and Index. Price 5*s.*—We can find nothing to say about the fourteenth issue of this excellent work which we have not said about previous issues. Mr. C. S. Loch's introduction is as crammed with information as to the right and the wrong way of giving charity as ever. The body of the book contains details of all sorts and conditions of charitable institutions and organisations—both those rightly so called and a number of others which can hardly be called charities; while the index is a model of what an index should be. Armed with this work and some other of a less "official" type, such as "Charitable Relief," in the series entitled "Handbooks for the Clergy," it will be the almsgiver's own fault if he does not distribute his alms with zeal according to knowledge.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. The Specificity of Antivenomous Sera, with Special Reference to a Serum prepared with the Venom of the Daboia Russelli. By GEORGE LAMB, M.D. Glasg., Captain, I.M.S. New Series, No. 16. Calcutta: Office of the Superintendent of Government Printing, India. 1905. Pp. 18. Price 6 annas (or 7*d.*).—From the experiments recorded in this communication Captain Lamb says that the following conclusions may be drawn: 1. By injecting a horse with pure unheated daboia venom an anti-serum for this poison has been obtained. This serum is of considerable strength and has a marked neutralising effect on all the actions of daboia venom both *in vivo* and *in vitro*. It should be of considerable therapeutic value in cases of bites from this snake. 2. The serum thus obtained is markedly, but not strictly, specific *in vivo;* it had no action on the poisons of five colubrine snakes against which it was tested; it has a certain neutralising action on the venom of crotalus adamanteus but has no effect on the venoms of two other vipers—namely, echis carinata and trimeresurus gramineus. 3. When tested *in vitro* against the hæmolytic actions of the various poisons it is found that this serum has no neutralising effect on this action of any colubrine venom, that it neutralises the venom of echis carinata as well as it does that of the poison with which it is prepared, that it has a marked but not equally great effect on the venom of crotalus adamanteus, and that it has no neutralising action on the venom of another viper—namely, trimeresurus gramineus. Further, when tested *in vitro* against the fibrin ferment actions of various poisons it is found that, while this serum neutralises well its homologous venom, it has no effect on the poisons of four other species, one colubrine and three viperine—namely, (1) hoplocephalus curtus; (2) echis carinata; (3) trimeresurus gramineus; and (4) crotalus adamanteus. 4. These observations confirm the conclusion which was previously arrived at and which receives the support of Noguchi's observations—namely, that an antivenomous serum is markedly, but not strictly, specific and that in treating any case of snake bite the homologous serum must be used.

Lessons on Living. A Reading-book in Physiology and Hygiene. By H. ROWLAND WAKEFIELD, Science Demonstrator, Swansea School Board. London: Blackie and Son. Pp. 240. Price 1*s.* 6*d.*—Nos. VI. and VII. of Blackie's Science Readers are included in this little volume which is one of a series especially adapted for use in schools in which elementary science is taught as a class subject. The present volume contains simple and informal lessons in physiology and hygiene, the instruction being elaborated from a series of incidents in the holiday visit of some boys to the country house of a physician in a delightful village. The lessons are full of interest and are given in a clear and readily assimilable way. The book is well illustrated, it is very attractive, and we wish it a wide circulation. It may be read with advantage by all young people.

Hints to Nurses on Tropical Fevers. By S. F. POLLARD, Sister, Army Nursing Reserve; late Sister, Guy's Hospital. London: The Scientific Press. Pp. 57. Price 1*s.* 6*d.* net.—This little book will answer a useful purpose and will be of considerable benefit to nurses who are going to the tropics. It touches on subjects which are not generally discussed in nursing manuals. The first chapter, "Hints on Going Abroad," is a very sensible one and the advice given in it may be followed safely. The diseases which are considered from a nursing standpoint are malaria, dysentery, abscess of the liver, cholera, bubonic plague, beri-beri, yellow fever, malta fever, dengue, typho-malaria, and prickly heat. The special points to which the attention of nurses is directed are carefully selected and considered and the recommendations made are judicious. The little book may well form part of the equipment of a nurse under orders for the tropics.

Electrical Methods in the Treatment of Affections of the Stomach and Intestines: A Practical Manual for Students and Practitioners. By GEORGE HERSCHELL, M.D. Lond. London: A. Siegle. 1905. Pp. 108. Price 3*s.* 6*d.* net.—The origin of this little book was a series of papers in the *Journal of Medical Electrology and Radiology* from January to July, 1904. The book is not intended for the expert but for the increasing number of medical men who have become interested in the subject. The articles are, therefore, of an elementary character and special attention is devoted to apparatus well within the reach of the general practitioner, but it is assumed that the reader has made himself acquainted with the elementary facts of electricity. Dr. Herschell writes that in the disorders of the digestive system electricity is capable of producing the following results when applied by certain definite methods:—1. It can cure many forms of neurasthenia depending upon defective metabolism, and in consequence some functional dyspepsias associated with it. 2. It will restore tone to the nerve supply of the stomach and intestines and is in consequence the best method with which we are at present acquainted of treating gastric neurasthenia pure and simple. 3. It will diminish the secretion of hydrochloric acid in the gastric juice when in excess. 4. It will diminish hyperæsthesia of the gastric mucous membrane. 5. It will promptly cure certain forms of gastralgia and epigastralgia. 6. Slight degrees of gastric myasthenia can be absolutely cured and the severe form usually much improved—that is to say, retention myasthenia can be often converted into myasthenia without retained food débris. 7. In certain cases of functional hypochylia and anachlorhydria the secretion of gastric juice can be re-established. 8. Constipation depending upon intestinal atony can in most cases be either materially relieved or cured. 36 pages are devoted to clinical histories illustrative of the results which may be expected in properly selected cases.

The Rôle of Modern Dietetics in the Causation of Disease. By J. SIM WALLACE, M.D., D.Sc. Glasg., L.D.S. R.C.S. Eng. London: Baillière, Tindall, and Cox. 1905. Pp. 87. Price 2*s.* 6*d.* net.—This book is a collection of essays which have appeared in the various medical and dental journals. Throughout the work the author insists on the necessity of feeding children in an intelligent and natural way and he shows that many ills are distinctly traceable to defective feeding. Dr. Wallace enters a protest against the excessive use of sugar, remarking that "it has become the fashion to belaud the dietetic value of sugar and to look upon it as an important food, while in reality it should be sparingly used and regarded as a condiment." The value of milk in the diet of children has, he considers, been largely over-estimated and should be recognised as an extremely unnatural food for children over or about the age of two years. He advocates a less highly nutritious diet and a more liberal supply of acid fruits of bitter, pungent, and stimulating principles. Further, each meal, he urges, should contain a large amount of solid matter so as to stimulate the mastication. The book is well worthy of perusal, even though the reader may not be in accord with all the author's conclusions.

JOURNALS AND MAGAZINES.

Bristol Medico-Chirurgical Journal.—The June number of this journal contains some interesting papers. Dr. J. Michell Clarke calls attention to some of the symptoms of Cerebellar Tumours, especially deafness and other disturbances of hearing. Dr. Henry Waldo deals with the Causation and Treatment of Baldness which he connects with seborrhœa and infective conditions attacking the scalp. Dr. Charles Begg in a short article on Sprue records some good results attained by the use of santonin which must be of the yellow variety produced by the action of light upon the drug.

Edinburgh Medical Journal.—The July number contains an article by Dr. G. A. Gibson upon Bradycardia which has already done duty as a paper read before two societies, the British Medical Association and the Edinburgh Medico-Chirurgical Society. Dr. P. McBride writes upon some cases of Sudden Onset of Cephalic Bruit and Deafness, due apparently to aneurysmal dilatation of a cerebral vessel. Dr. Karl J. Fürth and Dr. F. Parkes Weber record a case of Malignant Endarteritis of the Pulmonary Artery occurring after Gonorrhœa, in which a fungating patch was found in the vessel after death. This lesion, which was the only one found, seemed hardly sufficient to explain the existence during life of a long diastolic murmur heard over the pulmonary region. Streptococci but no gonococci were found in the vegetations. In the concluding Morison lecture Dr. John Macpherson emphasises the need for psychiatric departments at general hospitals and also for an extension of the boarding-out system of treatment for many chronic cases.

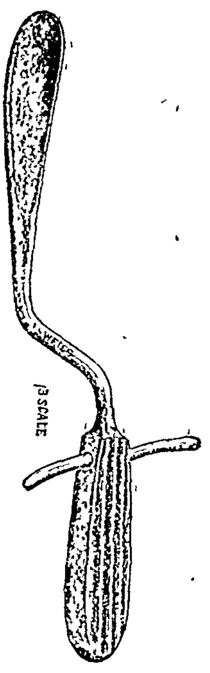
West London Medical Journal (July).—In the Cavendish lecture upon Diseases of the Heart Dr. James F. Goodhart deals, with his usual common sense, with a number of conditions which may give rise to suspicion of cardiac disease but which are in reality "functional" in character. The article is well worth careful study by all medical men and especially by those who have much to do with life insurance work. Dr. W. H. B. Stoddart contributes an interesting paper on the Recognition and Treatment of Mental Disorder in Private Practice and gives some useful advice as to dealing with such cases.

New Inventions.

A SPOON-ELEVATOR FOR RAISING THE PELVIC FLOOR.

Dr. J. G. Garson in 1878 made an important communication to the *Edinburgh Medical Journal* upon the Displacement of Bladder and Peritoneum by Distension of the Rectum. Soon afterwards the suprapubic operation for removal of vesical calculi was resuscitated and for a time Petersen's bag enjoyed great popularity for lifting the base of the bladder by distending the rectum; it was also used in operations for removal of vesical tumours but before long it was discovered that its use was not devoid of danger and that it also caused increased congestion of the bladder by its pressure on all the blood-vessels of the rectum. Owing to the recent successful introduction of the operation of removal of the prostate by the suprapubic route, the surgeon has often wished he could supplement fingers in the rectum by an instrument which would answer the same purpose, although Dr. Eugene Fuller is able to perform his prostatectomies with marked success by simply pushing his closed fist against the perineum. Nevertheless many surgeons feel that it is necessary to raise the prostate by fingers in the rectum, either the operator's or those of a skilled assistant, in order that improved conditions may be obtained for rapid enucleation of the gland; on one occasion I had the privilege of seeing Dr. Proust assist Professor Tuffier in such circumstances, but such skilled assistance is rarely available.

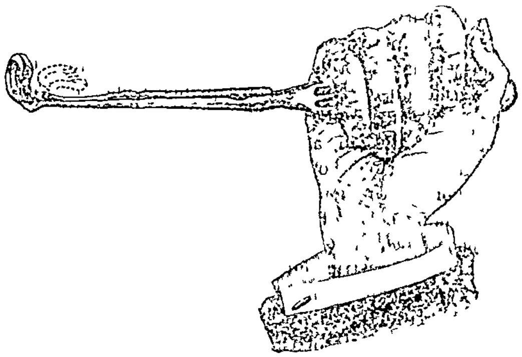
Messrs. Weiss have made for me a spoon which answers this purpose admirably. The illustration shows its chief mechanical points. The spoon is of the sixteenth and seventeenth century shape and is four centimetres across at its widest part. The spoon and the straight handle, which are inserted into the rectum, are made to imitate the length and breadth of two long and large fingers inserted into the rectum. The crank handle is made for the purpose of having the instrument conveniently at hand for manipulation in front of the patient's thigh. The curved processes, one on each side of the handle, are for the purpose of preventing the instrument rolling between the patient's thighs when the surgeon is not using it. As soon as the bladder is opened the spoon is passed into the rectum and the patient's thighs are approximated; under these conditions it will remain *in situ* and quite out of the way. The surgeon can perform all the necessary manipulations without infecting his hands and the instrument answers the purpose better, I think, than the fingers of an assistant in the rectum, because the operator acts directly on the spoon; he can push it up or draw it down to the exact position at which he requires the rectal counter-pressure; it can also be tilted to either side so that elevation of any particular area of the base and posterior wall of the bladder can be regulated to a nicety, for every movement of the handle is transmitted directly to the spoon as it is specially made in one solid piece for that purpose. I have used it in three prostatectomies and in one case of evacuation of blood clots completely filling the bladder. In the latter case the clot was cleared out through a suprapubic wound with great ease and rapidity by means of the spoon in the rectum and suprapubic massage of the abdomen. In a case of prostatectomy upon a friend of Dr. W. T. Edwards, J.P., I was able to remove 47 calculi from a large post-prostatic pouch which I could not otherwise reach with my fingers. In one of the other cases there was a calculus weighing two ounces and its delivery was facilitated by using the spoon in the rectum. In operations upon the female pelvis I introduce the spoon into the vagina and it remains *in situ* until required for lifting the uterus, Douglas's pouch, or the bladder. The particular point at which lifting of the pelvic floor is required is easily obtained. In a case of cœliotomy for soft, friable, and separate malignant growths of both ovaries secondary to carcinoma of the stomach I found it very useful as the tumours would not withstand any traction upon them for delivery. The face of a hysterectomy or of an ovarian stump can be easily manipulated so as to give a better view for its inspection by means of the spoon in the vagina. The reason that I record my short experience of the uses of the spoon is due to the fact that Messrs. Weiss informed me that they had sold several of them after I referred in a PS. to a paper on Prostatectomy to the fact that I had used such an instrument. The instrument which I had used at that time and those which have been sold are only three centimetres wide, but in practice I soon found that this was not broad enough for cases of enlarged cervix uteri or of a very big prostate to hold them firmly during lifting of the pelvic floor, as they had a tendency to slip over to one side. The instrument which is described above is four centimetres wide and is more satisfactory on account of its increased breadth.



Cardiff. J. Lynn Thomas, C.B., F.R.C.S. Eng.

AN ADENOID CURETTE.

The use of a curette for the removal of naso-pharyngeal adenoids, in preference to the various forms of post-nasal forceps, has now become almost universal. Most surgeons who have been performing this operation for more than ten years commenced with some form of Loewenberg forceps and have gradually discarded it for the curette. The curette removes a growth so rapidly and completely that the time occupied is very short and the risk from hæmorrhage is greatly lessened. For those whose dexterity is not maintained by frequent practice the curette is also a much safer instrument. Once introduced behind the soft palate and carefully maintained in the middle line of the body it can be swept backwards and downwards along the naso-pharynx without the slightest risk of wounding any important structure except the projecting adenoid mass. I have never known of any operator reverting to the older instrument when once he became used to a satisfactory form of curette. The original Gottstein form, although it detached the growth, had the drawback of not bringing it away, while there was some anxiety of the detached adenoid mass embarrassing the respiration. This objection was overcome by Delstanche's ingenious idea of connecting a hinged and toothed cage to the curette so as to receive the growth. As fitted to the original Gottstein model the toothed cage did not always appear to give sufficient space fully to receive the growth; it became too "crowded," in fact. Besides, the Gottstein form, to which it was attached, ends below in a V point, so that much of the lateral masses of a large square growth might easily escape the first stroke. The Beckmann curette, with its quadrilateral fenestra, and its curve adapted to the roof of the naso-pharynx, is better suited to embrace the adenoid mass. To this curette I have had fixed a hinged, spring frame, armed with short curved teeth set close together. This will admit a mass of any size and will prevent it from falling out of the curette. For the usual light handle I have substituted a more solid one, which can be grasped dagger-wise. Held in this position it is easier to keep the instrument all the time in the middle axis of the body; there is no uncertainty as to where the cutting edge exactly is when out of sight (which may happen if the curette is held like a pen, when it may easily become rotated in the fingers), and the growth can be more completely shaved off by one firm stroke. When the main growth has been removed an ordinary small Beckmann curette (18 millimetres across), fitted with a stout handle, will be found satisfactory for removing any lateral prolongations which have escaped the caged instrument. Thinking that better work could be done the larger the instrument employed I tried various sizes, including one measuring one inch across. But this proved useless, and one stock size, measuring three-quarters of an inch (20 millimetres) across, has been found the most satisfactory for all well-marked hypertrophies. A smaller curette, measuring 18 millimetres across, can be used for more limited growths, but the ordinary size is quite suitable for children three years of age, as well as for adolescents, the choice of instrument depending more on the size of the hypertrophy than on the age of the patient. This instrument was designed about eight years ago. I am informed that it is the one most generally used in the two chief throat hospitals as well as in many of the special clinics of the general hospitals. It is manufactured by Messrs. Mayer and Meltzer who report that they sell more of this model than of any other. It has therefore had an extensive trial before I ventured to bring it before the profession.



Queen Anne street, W. StClair Thomson, M.D. Lond.

Royal Portsmouth Hospital. — A bazaar, under Royal patronage, which extended over four days, was opened by Lady Northbrook at the Town Hall, Portsmouth, on July 11th. Apart from its success as a bazaar the effort will stand out prominently in the annals of Portsmouth, for it took also the form of a celebration of the centenary of Nelson's great and glorious victory, and the navy and army, with the representatives of civilian life, peacefully observed it by doing all in their power to increase the mayor's fund for building a new operating theatre and a block of wards at the Royal Portsmouth Hospital. It is expected that a sum of £1800 will be realised.

THE LANCET.

LONDON: SATURDAY, JULY 22, 1905.

Small-pox Hospitals in Rural Districts.

THE difficulty of adequately isolating cases of small-pox in thickly populated districts has been the subject of much discussion during the last few months and we have recently devoted two leading articles to the matter in THE LANCET.[1] But it has to be borne in mind that the difficulty of providing isolation accommodation for cases of this disease is in no sense confined to thickly populated urban districts. In so far as actual hospital provision is concerned the problem is more acutely felt in rural than in urban districts, owing more particularly to the smaller rateable value of rural districts. But all rural districts are not thus affected equally and it is in counties where general slackness in sanitary administration obtains and where that slackness is faithfully reflected by the county council that small-pox hospitals are but very inadequately, if at all, provided. An instructive example of this unsatisfactory state of affairs has recently been brought to our notice and although all the facts have not been set before us the main features stand out with sufficient prominence. The Leighton and Linslade urban, and the Wing rural, district councils in their anxiety to insure these districts against an invasion of small-pox combined for the purpose of providing a small-pox hospital. This building was duly procured and erected upon a site held apparently on a yearly lease and now, for some reason which has not come to light, the Wing rural district council has expressed its intention of withdrawing from the combination, there being, it would seem, no clause in the agreement which prevents it from doing so. The result is that the hospital will probably be sold to the highest bidder, together, we presume, with such small-pox infection as may cling to it, and the three districts concerned will be left without any provision for cases of small-pox. This impending dissolution of the combined districts has caused considerable discussion at the meetings of the joint committee and of the Leighton Buzzard board of guardians; and although the folly of the proposed dismemberment of the committee has been insisted upon by some of the more far-seeing members, the general tendency seems to be to let the districts look after themselves and to allow small-pox, should it be introduced, to run riot. The board of guardians has apparently contemplated the purchase of the hospital but, as was pointed out to it by its clerk, it is doubtful whether the purchase would be sanctioned by the Local Government Board or, if sanctioned, whether the hospital could be used for non-pauper cases. The Local Government Board holds, we believe, that it is the duty of the district councils to make the necessary provision for isolation accommodation and that it behoves the boards of guardians, when such provision is made, to arrange with the district council or councils for the isolation of pauper cases. We can only trust that in this instance the Wing rural district council will not, for a matter of some £16 annually, deprive its own district of the protection which the hospital obviously affords.

But the discussion which has arisen around this subject has resulted in other suggestions being made and as these have interest to the country as a whole reference may be made to them. It was proposed by a member of the Leighton board of guardians "that it is expedient that small-pox hospitals should be built and maintained from funds from the national exchequer," and the proposer contemplated that if some 50 hospitals were erected in different parts of the country the total annual cost would amount to between £50,000 and £100,000, an amount which, in his view, was much exceeded at the present time. Part of this proposal was that motor ambulances shou'd be provided, an arrangement which, it was urged, would enable each hospital to serve a large area. Question arose as to the suitability of motor ambulances for this purpose and, as our views are asked upon the subject in the local press, we may say that we see no objection whatever to such ambulances for small-pox provided, of course, that they are properly constructed and not driven at a speed which would be detrimental to the patients. But we are in no sense in sympathy with the proposal that the cost of small-pox hospitals should be borne by the national exchequer and we see no reason why this disease should be regarded in an economical light differently from other infectious diseases. There is already ample power to provide such hospitals and we are surprised to find in the papers which have reached us in connexion with this specific instance that no reference is made to the powers which are possessed by the Bedfordshire and Buckinghamshire county councils (the two councils concerned) for the compulsory combination of districts under the Isolation Hospitals Act, 1893, and if these two county councils are alive to their responsibilities they will, it seems to us, turn this incident at Leighton Buzzard to good account by taking steps to recombine or to group the districts of the joint committee by schemes which would embody such districts if the union is discontinued. As regards the mover of the proposal that small-pox hospitals should be a charge upon the national exchequer we must confess that we should be more in sympathy with *him if* he would use his strong personality to propose and to see carried a motion "that the National Assembly at Westminster should place on the Statute-book a measure for enforcing general revaccination and by this means render special small-pox hospitals unnecessary." In this connexion we commend to the guardian in question a perusal of Dr. R. BRUCE LOW's recent report[2] to the Local Government Board upon small-pox hospitals in Germany. He will learn from this report that owing to the protection afforded by vaccination and revaccination there is no need in the Fatherland for the provision of expensive small-pox hospitals but that when cases of this disease occur they are treated as a rule in one of the buildings of the

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[1] THE LANCET, June 3rd (p. 1520) and

The Teaching of Hygiene in India.

WHEN we consider the high pitch of civilisation which has been reached by some of the ancient races of man it is not to be wondered at that they should have framed for themselves codes of sanitary laws but it is somewhat surprising that these codes should have contained rules so nearly analogous to those which are the result of modern scientific knowledge. The Bible has familiarised us with the sanitary code of the Hebrews and archæological research has shown us that other Eastern nations were no less advanced in the knowledge of hygiene and sanitation. In the later part of the eighteenth century and the beginning of the nineteenth some accurate knowledge of the Aryan people of India was made accessible to us by the labours of such men as Sir WILLIAM JONES and HENRY THOMAS COLEBROOK and from this time, both in this country and abroad, considerable attention has been paid to the literature of this ancient people. Among a people who had reached a high degree of civilisation and in a country where the climatic conditions were particularly favourable to the propagation and the spread of diseases disseminated both by air and polluted water, we find, as might be expected, that the priestly class, who were the learned men of the time, had laid down rules for the avoidance of disease and the preservation of health. Had the Laws of Manu been fully understood and applied by the later inhabitants of India there can be no doubt that that country would have been less afflicted than it is by many dread diseases—cholera and plague for example. But in India, as in many another country, the wise regulations laid down by the priestly caste for the guidance both of mind and body have been perverted and their original meaning has been forgotten, so that ceremonies which formerly had a meaning and a reason are now become for the mass of the people such that they but "confound and darken" counsel. Even now if the natives could be made to understand the real meaning of the ceremonies which they go through with such superstitious reverence not only would the more ignorant benefit but also the educated people of their own and other nationalities who occupy the country with them.

There are already in existence many societies the object of which is to harmonise the philosophy of the East with the science of the West, a task which, for the present at any rate, seems to be an impossible one; but there is another movement on foot and one from which, if carried out with discretion, great good may accrue—namely, the attempt to educate the less intelligent of the natives of India in the practice and principles of Western hygiene and sanitation by showing them the relation between modern science and the rules laid down in their shâstras. From the office of an Indian periodical, called the *Arya*, a monthly magazine devoted to philosophical literature and science, published in Black Town, Madras, we have received three little pamphlets, reprints from the magazine, the first of which treats of water and health by Dr. P. S. CHANDRASEKHAR of Madras Medical College, showing that the Indian sacred writings contain many passages in strict accordance with modern sanitary science, and the second by the same author dealing with personal cleanliness on similar lines. The third pamphlet, "Notes on Ancient Sanitation," written by Colonel W. G. KING, C.I.E., I.M.S., sanitary commissioner of Madras, shows how the methods of purification adopted by the religious leaders of the ancient Hindoos may be made to harmonise with the teachings of modern science, though the author rightly points out that it is well to remember that these teachings were not meant for municipalities of modern times but for individuals who were scattered throughout the land living agricultural or pastoral lives of much simplicity and by no means grouped in well-populated centres, as at the present day. It is remarkable how these methods utilised natural processes recognised by modern science as due to chemical combination and microbial action. The rules against the practice of breaking clods of earth and tearing grass with the finger-nails might well at the present day be directed against the propagation of the ankylostomum; the direction to the householder to give food very hot would tend to kill microbes and to mitigate the results of contamination by exposure to the air; and the prohibition against the use of food that had been touched by the human foot or by the beak or the feet of birds would help to prevent contamination by disease germs. Perhaps the most remarkable testimony to the wisdom of the old Aryan teachers is to be found in their rules with regard to the use of water. The test of smell, colour, and taste seems to have been recognised early, as was also the possibility of contamination if collected in an inhabited area. The directions against answering to the calls of nature on the banks of, or in, rivers and the ruling "let him not throw urine or fæces into the water, nor saliva nor clothes defiled by impure subsubstances, nor any other impurity, nor blood, nor poisonous things," though disregarded by many of the lower class of Hindoos of the present day, show that their ancestors were possessed of wisdom. No better example of the way in which this ancient wisdom has been perverted by the ignorance of the less educated natives can, perhaps, be given than their belief in the purity of running water. The shâstras teach that a river is purified by its flow, a truth which is in accord with modern science, but many a Hindoo superstitiously holding this belief without understanding its meaning will defile water in the grossest manner and not hesitate to use it for domestic purposes, notwithstanding the fact that just above the site of withdrawal the accumulated filth of all classes and castes is being discharged. Colonel KING's pamphlet is full of interest even to the general reader but we have not space to refer to it further except to say that he deals with the Mahomedan writings as well as with those of the Hindoos.

It should not, then, be difficult to teach the less intelligent of the present-day inhabitants of India that the ancient Hindoos and the early Mahomedans were well acquainted with sanitary and hygienic knowledge which has been perverted by their descendants and to show the absurdity of regarding our present teaching as the offspring of a Western craving for the introduction of new fads. Quotations from the Vedas and the Laws of Manu have been, we believe, reprinted and used with good effect during the recent epidemic of plague. If Colonel KING and those who are working to the same end can convince the less intelligent natives, quote the closing words of the pamphlet, that "it is worth remembering ...... when plague surrounds us ...... that the people who will carry sanitation into their homes and as good citizens uphold it in public must reap health and wealth, and that the penalty of neglect of sanitation is financial ruin and death as proved by the history of every people who have had the temerity to ignore it"—if he and they can do this they will have given a priceless blessing to India and the reward will be great.

Medical Men in the Armies of the Ancients.

THERE does not appear in the Roman classics any very distinct allusion to medical men in the Roman army. The only passages relating at all to the subject consist of a casual remark in one of the military epistles of AURELIAN, two incidental legal observations contained in the law writings of MODESTINUS and in the Codex of JUSTINIAN, an allusion by VEGETIUS to the medical care and expense of the sick in camp, and an expression by GALEN as to the opportunities for anatomical observation presented to the physicians during the German wars. When treating of those who by absence from Rome, and so on, were exempted from some burdens and taxes the jurist MODESTINUS, who wrote in the earlier half of the third century, mentions among others the military physicians (*medici militum*), "because," he adds, "the office which they fill is beneficial to the public, and ought not to be productive of any injury to themselves" ("Corpus Juris Civilis Digestorum," Lib. IV., Tit. 6, Leg. 33, Sec. 2). In JUSTINIAN'S "Corpus Juris Civilis" (Lib. X., Tit. 52), drawn up in the sixth century, there is a series of laws, "De Professoribus et Medicis." The first of these laws exempts the physician of a legion (*Medicum Legionis*) from civil duties when he is absent in the public service. In his work, "De Re Militari," VEGETIUS, who wrote towards the end of the fourth century, devotes a chapter (Lib. III., cap. 2) to the regulation of the health of an army, and incidentally rather than directly alludes to the cure of sick soldiers by the skill of the physicians (*arte medicorum*). Enumerating also elsewhere the duties of the prefect of the camp he states that his authority extended over his sick fellow-soldiers and the physicians who had the care of them and he regulated the expenses relative thereto (Lib. II., cap. 10).

The history of other more ancient governments than that of Rome is not without allusion to the office of army surgeons. HOMER, HERODOTUS, and PLINY each comment on the number and fame of the medical men with which the kingdom of Egypt abounded. DIOGENES LAERTIUS, in his account of PLATO, tells us of PLATO'S sickness when travelling in Egypt and adds that he remarked, like HOMER, that the Egyptians were all physicians. They had, moreover, paid medical officers attendant upon their troops in war, for in describing the status and character of the Egyptian physicians DIODORUS SICULUS specially mentions that, when engaged in military expeditions, the soldiers were cured without fees, the physicians of the army receiving a salary from the State. One instance is referred to in history in which a king of Egypt, when thrown from his horse in battle, wounded and speechless from injury of the head, had his skull trephined by his surgeons. This was PTOLEMY PHILOMETER, who defeated ALEXANDER BALAS, the pretender to the throne of Syria, in the year B.C. 146. According to LIVY the victor himself died after the battle during the attempts of his surgeons to relieve him. Nor is the old classical literature of Greece without references to surgical services rendered to the soldier in war. HOMER describes the double character of army surgeons and warriors as combined in the persons of PODALIRIUS and MACHAON. And when the latter is wounded he puts into the mouth of IDOMENEUS the well-known expression ("Iliad," Lib. XI., v. 514) that the medical man is to the army more valuable than many warriors, knowing as he does how to excise arrows and to apply soothing medications. In the course of the "Iliad" the surgical treatment followed in individual cases among the disabled Greek warriors is sometimes minutely entered upon; and thus the different modes of operation by which the transfixing arrow, dart, and lance were in those early days of surgical science removed from the bodies of the wounded may sometimes be gathered from HOMER'S lucid and minute descriptions. He mentions three different methods at least by which the weapons of war were extracted—viz., first, by evulsion or traction of the weapon backwards, as in the case of MENELAUS ("Iliad," Lib. IV., v. 214); secondly, by protrusion or pushing of the instrument forward, as in the case of DIOMEDES (Lib. V., v. 112); and thirdly, by enlarging the wound and cutting out the weapon, as was the practice of PATROCLUS in the case of EURYPYLUS (Lib. XI., v. 218). In his semi-historical or political romance, the "Cyropædia" (Lib. I., cap. 6, Sec. 15), XENOPHON makes his young and royal hero CYRUS, the founder of the Persian monarchy, speak, among other matters, of the importance of medical officers being attached to armies. "With respect to health" (says CYRUS), "having heard and observed that cities that wish health choose physicians, and that commanders for the sake of their soldiers take physicians, so when I was placed in this command I immediately attended to this point, and I believe that I have men with me that are very skilful in the art of physic."

In the earlier periods of Roman history and Roman warfare the treatment of the military sick and wounded was in all probability intrusted to the casual care of some fellow-soldiers whose tastes and inclinations had led them to pay more than usual care to the rude surgery which existed at the time. As early, however, as the commencement of the Christian era we find CELSUS laying down distinct and in many instances very excellent and practical precepts for the extraction of weapons of war from the bodies of the wounded. But neither in CELSUS nor in any other ancient medical work is there allusion to surgeons or physicians being regularly appointed as army medical officers in the Roman army for the purposes of superintending the treatment of the wounded, or of taking professional care of the soldiers disabled by sickness, whose number in ancient days was, as it now is, much greater than the number of those disabled in fight. We know from the oft-repeated anecdote regarding ARCHIGENES, as told by PLINY, that in the early days of republican Rome the practice of medicine was not encouraged among the inhabitants of the Eternal City. But in the later periods of the empire there was an abundance of native and foreign physicians in

Rome. When the Emperor SEPTIMIUS SEVERUS determined to subdue the whole of Scotland he, about the year A.D. 208, led an army of not less than 80,000 men across the Forth, marched them north, apparently as far as the Moray Firth, and thence returned to York. But though in this course the Roman Emperor nowhere met the enemy in open fight, he is stated to have lost in this single campaign not less than 50,000 of his troops. It is to be expected that common experience and losses such as SEVERUS sustained by disease would have suggested to the Romans the propriety of increasing the strength and success of their armies by having medical men to watch over the health of the soldiers who were fighting in so many different regions around the Roman standards. Some modern discoveries in Great Britain and elsewhere show that such a conjecture is not at variance with truth and that the Roman armies were provided, at all events in the time of the empire, with a medical staff although CELSUS does not happen to allude to the circumstance.

Annotations.

"Ne quid nimis."

THE SHALLOW WELL AND ITS WATER.

NOTWITHSTANDING the steady progress which is being made in most parts of the country in general sanitation the shallow well may still be found to be supplying with drinking water a very considerable proportion of the population and this is more particularly the case in rural and in small urban districts. Of these latter the Stowmarket urban district is a noteworthy example and the facts disclosed by Dr. C. W. Low, the medical officer of health, place a serious onus upon the local district council. Of the 118 wells, which are practically all at present in use, no fewer than 103 showed signs of recent pollution and are therefore, in the opinion of the medical officer of health, unfit for domestic use. The report which contains these very striking facts does not tell us whether the wells in question form, exclusively of rain water, the only supply of drinking water to the people of Stowmarket but it is to be inferred that this is the case. The pollution in the majority of instances appears to be considerable and the variation in the amount of chlorine in the different well waters seems to prove conclusively that the pollution is due to organic matter. In a sense Dr. Low is in an exceptionally fortunate position as regards the wells in his district, since he has pointed out in previous annual reports that "through the faulty construction of the shallow wells in Stowmarket and their dangerous surroundings the water in these wells is liable to pollution, especially after heavy rains, and is therefore in all cases an unsafe, and in many cases a very dangerous, source of supply for domestic purposes." It would, however, be possible for very many medical officers of health to write in similar terms of the shallow wells in their districts but few officers have, we think, been fortunate enough to find practically all such wells actually polluted when the waters have been submitted to chemical examination. Indeed, the Stowmarket experience in this respect stands, we expect, almost, if not quite, by itself, a circumstance which may possibly find explanation in the fact that the waters were examined during an exceptionally dry season. Clearly these wells ought to be closed by virtue of the fact that all of them are dry steened, unprotected from surface pollution, and presumably in dangerous proximity to pervious cesspools, but it is a little difficult to know, assuming that these wells are the only sources of supply, whence a satisfactory supply is to be procured pending the establishment of public works. If, however, there is already a satisfactory public supply there should not, in all the circumstances, be any serious difficulty in persuading all the holders of polluted wells to substitute the public supply for their polluted wells. But it has to be borne in mind that possibly analyses procured specifically for the purpose of taking legal proceedings may not yield such uniformly unsatisfactory results as analyses made during a remarkably dry period. No doubt, however, the wells most obviously liable to pollution would be taken first. What is urgently needed is a modification of the existing laws relating to the closure of wells obviously liable to pollution by the insertion of the words "likely to be so polluted ...... or dangerous to health" into the Public Health Act, 1875. It is a regrettable fact that in many parts of the country eminently unsatisfactory shallow wells are actually being provided at the present time and in only a few districts are any efforts made to induce householders and well-sinkers to provide wells which are properly protected from surrounding pollution. In some rural districts suggestions as to the proper construction of wells have, we believe, been drawn up and circulated but it appears to us that the Local Government Board might well draw up some regulations or recommendations on the subject which would have the effect of gradually doing away with shallow wells which simply invite pollution. Dip-wells and other wells from which water is raised through moveable lids should be properly steened and the walls should be raised above the ground level. In cases where water is raised by means of a pump the mouth of the well should be securely covered and the pump should be some distance from the well. It would be desirable, too, that the suggestions made by Professor Koch should be sometimes acted upon. He proposed that in the case of unsatisfactory shallow wells a pump should be provided and the well itself filled in up to the water level with coarse and fine gravel, there being at least two yards of fine sand above this. By these means any pollution in the neighbourhood of the well would be likely to undergo satisfactory purification before reaching the water level.

THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY OF LONDON.

AMONG the more permanent memorials of the centenary of the Royal Medical and Chirurgical Society of London is a "Chronicle" written at the request of the President and Council for the centenary festival held this year. The authors are Dr. Norman Moore and Mr. Stephen Paget and they have compiled a most interesting book. Like most other organisations the Royal Medical and Chirurgical Society arose out of the (temporary in this case) disorganisation of a similar and pre-existing society—a society which, we hasten to say, now shows no trace of its youthful disorders. The date of the foundation of the Royal Medical and Chirurgical Society was Wednesday, May 22nd, 1805, and the place the Freemasons' Tavern. The first home of the society was in Verulam-buildings where it remained from 1805 to 1810, then it moved to Lincoln's Inn-fields where, though in different houses, it remained until 1834. Then came the move to Berners-street where the society remained from 1835 to 1889, and finally the society took up its present quarters in Hanover-square in 1890. The book is divided into two parts, the first of which contains the history of the society and the second the names of past presidents with the careers of those who are dead. In the first part, also, are short notes on the proceedings at the meetings, *précis* of interesting papers, and other matters, amongst which last is one of special interest to ourselves—namely, the proposal in 1854 (the date 1852 given on p. 104 is obviously a slip) to exclude THE LANCET and the *Medical Circular* from the library. Altogether the retrospect is of great interest and should be studied not only by the Fellows of the society but by other medical men as well.

THE HYGIENE OF THE LONDON STREETS AND MOTOR TRAFFIC.

PEDESTRIANS in the streets of London are already realising that a gradual and remarkable change in the method of vehicular locomotion is taking place. The change has been more marked by the advent of the motor omnibus which represents probably the weightiest motor vehicle for passengers that has been so far employed The traffic of central London—the Strand, Holborn, Oxford-street, and the City—consists mostly of omnibuses and when these cease to run the streets appear comparatively empty. When, therefore, the horse-drawn omnibus is exchanged for a motor omnibus we may regard the motor traffic as practically established so far as the London streets are concerned. With this change of traffic there must be a change in the degree and kind of the pollution of the streets and of the air, for until the motive force for propelling traffic can be created at a distance and stored, as in the case of electricity, there must always take place some kind of pollution of the air of the streets. The old pollution, that of the excreta and emanations of horses, will give way to the new pollution—the products of perfect and imperfect combustion of the petrol of the motor. We may assume, therefore, that the pollution will increase as regards its purely chemical character and will cease as regards its biological qualities. The impurities arising from the incomplete combustion of fuel are much less likely to be pathogenic than the products of physiological combustion and in this respect the displacement of horse traffic by motor traffic is calculated to effect a sanitary improvement. The streets of London are ever full of dust and the bacteriology of this dust, derived so largely as it is from animal traffic, is appalling and decidedly sufficient to account for a number of pathological conditions in those who come into contact with it. Affections of the nose and throat are very common in the pedestrians of busy streets, though it would seem that those who are constantly exposed to the dust of traffic enjoy some immunity and become, so to speak, hardened. The man fresh from the clean country or sea air experiences an irritable condition of the nose and throat after he has been a little while in the London traffic, especially in dry weather. Similarly, on the return from his holidays the Londoner himself is often attacked in the same way. Will what we have termed the new pollution—that is, the pollution of the motor-car—remove this pathogenic factor of horse-drawn vehicles? It is probable; but only perhaps to give place to a fresh element, active in producing headache, depression, and languor. At any rate, we know that the imperfect combustion of volatile hydrocarbons gives rise to poisonous products and the vapour of the hydrocarbon itself or of petrol when inhaled causes distressing symptoms. In this sense therefore the new pollution of the streets may be worse, hygienically speaking, than the old pollution but we may fairly hope that we have not yet seen the ideal motor and that further improvements will tend to the complete utilisation or burning up of the volatile fuel. At times the trail of motor-cars, and especially of motor omnibuses, in the streets is nauseating with smoke and petrol fumes, and if this is the case when only a fraction of the traffic is motor-propelled what will it be like when the horse has been practically banished? Many of us will wish for the horse again if the methods of combustion are not improved in the direction indicated. But perhaps a new motive agent will be found; indeed, could the obvious difficulties be overcome liquid air would be ideal for the purpose, as then not only would the motor traffic not pollute the air but it would actually provide the streets with a fresh supply.

HYPNOTISED WITNESSES.

THE medico-legal relations involved by the practice of hypnotism have several times been discussed in the courts of the United States of America. Quite recently in the case The State *v.* Exum it has been decided that the statement by a witness on cross-examination that she had been thrice hypnotised by the prisoner is admissible as affecting the credibility of her evidence. It was not alleged in this case that the witness was actually in the hypnotic state, for then she would have been held quite incompetent to offer testimony. What counsel sought to prove was that she was then and there the subject of a post-hypnotic suggestion. It is admitted that proof of such a mental condition must be very difficult; the judge, whose function it is to decide the competency of a witness, would have to consider many pertinent facts. Once, however, the state of post-hypnotic suggestion is established there can be little doubt that a witness so obsessed should be ruled unable to testify on behalf of the party responsible for that condition. It must be remembered that possible actions of the victims of *suggestions à longue échéance* are still hotly debated in the French schools of hypnotism: at the Salpêtrière they hold that the educated moral sense is not annulled by a criminal suggestion; at Nancy they have several practical if reprehensible illustrations that when hypnotised the mind does not revolt at a suggestion which leads practically to the performance of a misdemeanour or a crime.

RECURRING PHLEBITIS OF OBSCURE ORIGIN.

IN the *Johns Hopkins Hospital Bulletin* for June Dr. J. B. Briggs has described a form of phlebitis affecting the veins of the extremities which occurs without apparent cause and has received little attention from systematic writers. The cases are rare and show many striking features in common, so that they form a well-defined group. They are characterised by a progressive and relapsing course. They resemble in their main features those described by Sir James Paget and others as gouty phlebitis. But in Dr. Briggs's cases no evidence whatever of gout could be elicited. The following is an example. A healthy student, aged 23 years, who gave no history of gout or rheumatism, awoke one morning in May, 1901, with a sensation of stiffness at the inner side of the left ankle. The sensation disappeared during the day but recurred next morning with increased severity. Examination on the fourth day showed that the left internal saphenous vein formed a firm and tender cord in the lower part of its course. There were in the malleolar region slight superficial redness and œdema. The symptoms subsided in about a fortnight and a tough cord three centimetres in length remained. Careful examination failed to show any infectious process and the general health was excellent. Early in July the patient awoke one morning with sharp pain in the left leg and found a thrombotic cord continuous with the first one extending about six inches above it in the course of the internal saphenous vein. There were considerable œdema of the inner part of the leg and some redness and heat. Tenderness was extreme. Prolonged immersion in a stream of cold water was performed several times a day which relieved the pain and enabled the patient to walk about. After two weeks the symptoms had disappeared and there remained only the firm cord of the occluded vein. The general health was unimpaired even when the pain was greatest, there was never any pyrexia, and the leucocytes were below 8000 per cubic millimetre. A characteristic feature was that the pain was diminished by exercise and increased by rest. Thus on awaking in the morning it was always intense. On walking about it diminished and in the afternoon the patient could play tennis. In August there was another attack affecting the vein as high as the knee; in October one occluding the saphena vein to a point five centimetres above the knee; and in December one continuing the process nearly to Poupart's ligament. The attacks were all precisely similar; they began during the night and the thrombosis never extended beyond the point which it reached at the beginning of the attack. Œdema was never marked and appeared only on the inner part of the leg corresponding to the thrombosed vein. It is noteworthy that embolism did not occur, although the patient walked about even when the inflammation was at its height. Three years after the last attack the obliterated internal saphenous vein could be traced as a fibrous cord up to the middle of the thigh. In April, 1905, another attack occurred. Dr. Briggs describes two other cases and cites five similar ones. In two cases the arms were affected but these cases differed from the others in the fact that there were no relapses. Dr. Briggs does not agree with the view of some writers that this phlebitis is a manifestation of gout, as there was no evidence of this disease. He suggests that it may be due to a sclerotic change in the veins analogous to arterio-sclerosis.

THE UNRESTRICTED SALE OF DANGEROUS DRUGS.

AN inquiry was held recently in Guernsey into the circumstances attending the death of a lady named Bird, when the following facts were elicited, to which attention may well be drawn. Mrs. Bird had been ill for some time and had been treated by Dr. E. V. Gibson who regarded her as on the road to recovery; in fact, she was, in the words of a nurse who had left her on May 11th, nearly convalescent. She had, under the directions of Dr. Gibson, taken veronal but he had not ordered her any for some days previously to her death. It was proved, however, by her letter giving the order that she wrote to Messrs. John Barker and Co. of Kensington for veronal and received from them on a Thursday morning a packet containing an ounce of the drug. On the following Saturday a nurse who was then attending her found her trying to get into bed, when she explained her position by saying that she had fallen out of it and after this she was observed to be drowsy. On the following day her condition attracted the attention of Dr. Gibson who examined her and ordered a search which resulted in the finding of the packet containing veronal. He then did all that was possible to avert death which, however, took place on the following Tuesday. It was shown from the amount remaining that between Thursday and Saturday, probably on Saturday morning, the unfortunate lady had taken about half an ounce of veronal. Not unnaturally Dr. Gibson called attention in his evidence to the fact that so large a quantity of veronal as an ounce, invoiced at 6*s.* 6*d.*, could be transmitted without restriction of any kind to anyone sending an order by post, and the court, very properly, adjourned the inquiry in order that further particulars with regard to the purchase might be proved. This resulted in the production of the letter written by the deceased, together with evidence by His Majesty's Comptroller, who obtained it for the purpose of the inquiry, that he had also received a box of veronal of the kind sent to Mrs. Bird. The important point with regard to this, and one not less serious than the free and unrestricted sale of so large a quantity of the drug, consisted in the fact that the box was stated not to have been accompanied by any instructions or warning with regard to its contents. It is hardly necessary to point out how dangerous the sale of medicinal compounds may be without strict directions as to dosage and it must also be remembered that what may happen in such circumstances is that a medical man may order a medicine to be made up in a mild form suitable to the case of a particular patient and may direct a certain bulk of it to be taken. The patient, however, who happens to have learnt in general terms the description of what has been prescribed may purchase for himself unknowingly a much stronger preparation. If he does so the result of taking the same quantity in bulk that he swallowed before with beneficial result is likely to be serious. We should recommend druggists to exercise discretion in the sale of drugs an overdose of which is likely to lead to fatal results and to refrain from selling them except in accordance with a medical man's prescription. If they decline to do this they should indicate a dose, taking good care to fix it on the safe side; otherwise they must not be surprised to find their names mentioned at inquests and disapproval of their methods expressed. In the case of Mrs. Bird a verdict of "Death by misadventure" was returned, the jury no doubt attaching weight to the omission of directions as to dosage proved before them. Dr. Gibson did good service in calling attention to the matter.

ACETONURIA IN SURGICAL CASES.

ACETONURIA is well known as one of the phenomena of diabetic coma. It has also been observed under a number of other conditions of which the best known is the administration of an anæsthetic. Recently we called attention to a series of cases in the Boston Children's Hospital in which death occurred in peculiar circumstances and acetonuria was present.[1] In most of them an operation had been performed under anæsthesia. The condition in which acetone and diacetic acid appear in the urine has been described as acid auto-intoxication but our knowledge of it is most imperfect. The *Boston Medical and Surgical Journal* of June 29th contains an important contribution to the subject by Dr. J. C. Hubbard. He shows that, like many other conditions described as rare, acetonuria is considered so only because it has not been looked for. His attention was drawn to the subject by the series of cases referred to above and he examined the urine of a number of patients on admission to the Boston City Hospital. The urine of 110 patients was examined for acetone and diacetic acid, that of 35 for acetone alone, and that of five for diacetic acid alone Acetone was found in nine cases, in four of which it was associated with diacetic acid. The following is an outline of the cases. 1. A girl, aged 16 years, had chronic tuberculous adenitis of the neck. The glands were dissected out and the wounds healed. 2. A boy, aged seven years, was admitted with symptoms of concussion of the brain on the day after he was thrown on his head. He was discharged on the following day. 3. A woman, aged 50 years, had an appendicular abscess which was successfully drained. 4. A man, aged 26 years, was admitted with chronic appendicitis and inguinal hernia. An interval operation for appendicitis and Bassini's operation were successfully performed. 5. A boy, aged 10 years, was admitted with symptoms of concussion after falling from a wagon on his head. There was slight mental confusion for 12 hours. 6. A girl, aged eight years, sustained fractures of the humerus and clavicle and vomited much fluid containing blood. 7. A man sustained fracture of the pelvis. 8. A woman, aged 21 years, had symptoms suggesting salpingitis. 9. A woman, aged 21 years, had fracture of both bones of the leg. In none of these cases did the urine contain albumin or sugar. All ran an ordinary course. Thus acetonuria was found in nine out of 135 surgical cases and it must be a much more frequent condition than is generally supposed. In another series composed of five cases the urine was found to contain acetone or diacetic acid on being examined to furnish an explanation for some irregularity in the course of convalescence. The following are two examples: 1. A boy, aged four years, had a fracture of the femur which was set on April 21st, 1904. An attack of measles began on June 18th. On the 20th he was drowsy and there had been an odour of acetone from the breath for five or six days. On May 20th the urine did not contain acetone or diacetic acid; on June 19th both were present. 2. A girl, aged 11 years, had her appendix removed on May 11th. On the 23rd a secondary abscess discharged. On June 17th the urine contained no albumin, sugar, acetone, or diacetic acid. Vomiting began and on June 30th the urine contained a trace of albumin, hyaline and fine granular casts, blood, numerous polynuclear leucocytes, acetone, and diacetic acid. In these five cases the symptoms yielded readily to the administration of bicarbonate of sodium. What the course would have been had the acetonuria not been recognised cannot be said. In two other cases acetonuria was found and death ensued.. 1. A boy, aged nine years, was operated on for appendicitis on May 16th, 1904. The appendix, which was injected and swollen, was removed. Vomiting occurred after the operation and on the following days. On the 18th there was a sweet odour from the breath. On the 28th the temperature was irregularly elevated, nothing was retained by the stomach, and death occurred. Acetone and diacetic acid were found in the urine on the 19th and persisted until death. A girl, aged 12 years, had acute osteomyelitis of the lower end of the right femur. An operation was performed on April 4th, 1904, and pus was found in the medullary cavity. Abscesses developed in various bones which were trephined as follows: April 6th, right femur; 10th, left femur; and 13th, left fibula. On the 25th an abscess of the right parotid was opened. After this convalescence seemed to progress until vomiting began and acetonuria was found. The vomiting persisted until death which occurred on May 20th. In none of the cases was there any glycosuria. Dr. Hubbard concludes that three forms of acetonuria may be distinguished: one without symptoms in which the prognosis is not affected; a second with moderate symptoms and of only slight importance; and a third with severe symptoms and a grave prognosis. Acetonuria occurs most frequently in the young. It is noteworthy that in the two fatal cases the ages were only nine and 12 years. The most prominent symptoms observed in the recorded cases were vomiting, apathy, and the odour of acetone in the breath. The treatment usually adopted was the administration of bicarbonate of sodium in 30-grain doses thrice daily or every four hours.

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[1] THE LANCET, Sept. 17th, 1904, p. 846.

THE SOCIETY OF CHEMICAL INDUSTRY.

DURING the past week a convention was held in London which represents the twenty-third annual meeting of the Society of Chemical Industry and the first international meeting held in this country. The election of Mr. William H. Nichols, M.S., LL.D., D.Sc., a distinguished manufacturing chemist of New York, to the office of President attracted a number of American guests. Amongst many entertainments provided for the visitors was a day at the Wellcome Club and Institute at Dartford, Kent, the meeting serving also to commemorate a quarter of a century's work of the firm of Messrs. Burroughs, Wellcome, and Co. The visitors included a number of distinguished workers in chemical science and in chemical industries throughout the British Empire and America, and the medical profession was also largely represented. The main object of the society is to encourage the application of chemical science to industry and during the 23 years of its existence the progress which has been made in this direction has been very satisfactory. Its extension happily threatens to destroy root and branch the "rule of thumb" methods of antiquated manufacturers. The position which the society takes is that pure science must be the handmaiden of industry if progress is to be made and if our position as an industrial nation is to advance and not to fall back. Money must be spent in training men for the work of special research bearing upon the nature of the industry pursued and trained men of science should in future occupy something more than a mere academic position and should fill the post of adviser, investigator, and controller in the various manufactures of the country. An excellent example has been set in this direction by Messrs. Burroughs and Wellcome who have instituted in connexion with their manufactures admirably equipped chemical and physiological research laboratories. Apart altogether from the decided advantage which the possession of research laboratories gives to the preparation and manufacture of medical and pharmaceutical preparations results are gained also which are from time to time communicated to the learned societies and which are calculated to spread a more exact knowledge of the pharmacology of drugs. Professor H. E. Armstrong, F.R.S., who has pleaded so eloquently for the application of science to industry in this country, in a speech made at the meeting paid a warm tribute to Mr. H. S. Wellcome for his enterprise. It was evident also to the visitors on Saturday that the latter gentleman does not forget that success depends on a harmonious relationship subsisting between the employer and the employé. Every consideration had been extended to the employés as regards their comfort and well-being, as evidenced in the foundation of the club and institute and the spacious and pretty grounds provided for their recreation.

LONDON'S FOREIGN MEAT-SUPPLY.

THE existence of the huge organisations controlled by the Corporation of London in connexion with the importation of live cattle, sheep and oxen, for the supply of the London markets was emphasised recently by a visit of inspection to Deptford made by the Markets Committee which is responsible for the work, and at this visit one of our commissioners was privileged to be present. The dockyard and abattoirs, where the cattle are slaughtered within ten days from the date of landing, are situated in a remote, but extremely picturesque, corner of Deptford. The abattoirs were erected some few years ago upon lines embracing the best features of continental models then extant and, it is almost needless to say, are kept scrupulously clean. The large cattle-boats now running chiefly from America and Canada (the Argentine boats having ceased within the last two years) anchor off Gravesend, seldom coming as far as Deptford owing to the difficulties of navigation. The cattle are transhipped to boats kept for the purpose belonging to the corporation and so expert have the crews become in the work that 500 or 600 head of cattle are transferred from one boat to another in an hour, while the same number can be landed from the boat at Deptford in 50 minutes. The boats have two lower decks divided into compartments fitted with light- and air-shafts and, in addition, possess an electric installation. These cattle decks are lime-whited throughout after each trip. In the centre of the boat is the cattle ladder or gangway by which the beasts reach the lower deck after the reluctance of the leader to descend the ladder has been over-ruled, the others following without much hesitation. Notwithstanding the apparent difficulty attending transhipment accidents to the men employed or to the animals are rare. There is one point, it seems to us, which admits of improvement. The cattle decks might be formed of some impervious material such as asphalt (corrugated) draining into a sump or portable tank. This would permit of these decks being flushed with a hose and would prevent the possibility of the bilge becoming contaminated. The beasts on arrival are duly examined by the veterinary officer in charge. On the occasion of the recent inspection the members of the committee of the three markets—viz., the Central, the Caledonian, and Leadenhall—attended by various officials, including the port sanitary officer, dispersed and inspected the vessel in sections, afterwards meeting in committee on one of the boats to compare notes.

MEDICAL EXCURSIONS FOR STUDENTS OF MEDICINE.

WE are enabled this week to lay before our readers some further information concerning the "Voyages Médicaux" organised by M. E. Bazot. Names should be sent to him at the Service Annexe de l'Œuvre des Voyages Médicaux, 1, Rue de l'Echelle, Paris, as soon as possible, the latest day for their reception being August 2nd, but subscriptions need not be sent in before that date. The money may be sent by money order. The committee of the Association Corporative des Étudiants en Médecine is taking all the measures necessary for the welcome of British fellow students and has organised an informal and friendly reception which will be held on the evening of the day of arrival at Paris. Besides this reception another one is offered by the administrative committee of the Voyages Médicaux. Time, however, is short and as we said last week we greatly fear that but little can be done this summer.

A CASE OF ANGINA PECTORIS WITH UNUSUAL SYMPTOMS.

WE have received a reprint of a paper published in the spring number of *Brain* by Dr. G. A. Gibson of Edinburgh on Some Hitherto Undescribed Symptoms in Angina Pectoris. The case was most carefully observed and presents some features of interest from which Dr. Gibson deduces certain noteworthy conclusions relative to the innervation of the heart. The patient was a strongly built labourer, 45 years of age, with a healthy florid complexion, and was admitted to the Royal Infirmary complaining of pain in the chest and left arm which dated from five weeks before admission and was associated with some breathlessness on exertion. There was no history of alcoholism and the patient's home conditions were healthy and comfortable but his work was heavy. The pain after a time began to show paroxysmal exacerbations, during which the face became pale and the arteries small and hard. The cardiac impulse was situated in the left nipple line four and a half inches from the mid-line of the sternum; there was some enlargement of the area of cardiac dulness. The heart sounds were clear but the aortic second sound was much accentuated. All the superficial arteries were thick and tortuous and the arterial pressure, estimated by Hill and Barnard's sphygmometer, was found to vary between 160 and 170 millimetres of mercury. The unusual features of the case consisted chiefly in the character and distribution of the sensory changes. There was constant pain over the back on the left side as far down as the ninth intercostal space and extending up to the back of the neck, over the clavicle, and down the front of the chest as far as the eighth space. It involved the whole of the shoulder and extended down the outer aspect of the arm and forearm so as to reach the thumb, index and middle fingers. Over the greater part of this area there was hyperæsthesia to all forms of stimuli except over the radial portion of the hand where there was absolute anæsthesia bounded by a small zone of analgesia without anæsthesia. The sterno-mastoid, trapezius, pectoralis, deltoid, biceps, and supinator muscles of the left arm were tender and there was great weakness of the left hand. All these muscles showed a condition of increased electrical excitability when tested by faradism and galvanism. The left eye was more prominent than the right and the left pupil was larger than its fellow. The diagnosis made was that of early arterial sclerosis, probably implicating the coronary arteries and associated with some interstitial changes in the myocardium. The changes in the muscles were attributed to afferent impulses and were regarded as analogous to those seen in arthritic muscular atrophy. The sensory changes found their explanation on Head's well-known law of referred pain. From a consideration of the symptoms Dr. Gibson regards them as confirming conclusions which he has published in his Morison lectures as to afferent impulses from the heart, that they travel by the inferior cardiac nerve to the inferior cervical ganglion of the sympathetic and thence by the grey rami to the seventh and eighth segments of the spinal cord.

RE-AFFORESTING THE APENNINES.

ONE of our correspondents in Italy writes:—"The function of forest growth in maintaining the balance between moist exhalation and beneficent rainfall was nowhere more strikingly illustrated than in Italy, whose 'waving woods' and exuberant soil were among her 'praises' commemorated by Virgil. For centuries, however, persistent tree-felling uncompensated by collateral tree-planting has robbed her of that enviable distinction, and so we find denuded hillsides annually visited by prolonged drought and torrential downpour with progressive injury of agricultural and industrial interests till, all too tardily, the legislature has had to intervene with such remedies as it can devise. Mainly under medical inspiration and initiative societies 'Pro Montibus et Silvis' have cropped up in the present generation and the 'Legge Forestale' of Baccelli marked a step to be followed by others towards the 'consummation devoutly to be wished'—the reclothing of the naked uplands and the return to the normal interchange of gentle evaporation and fertilising shower. Just before Parliament rose for the summer one of its ablest members, Dr. Antonio Celli, professor of hygiene in the Roman University, put a series of questions to the Ministers of Agriculture and Public Works tending to stimulate the 'ricostituzione idraulica forestale dell' Apennino,' but received answers so unsatisfactory that he gave notice of a motion to be tabled at the next meeting of the legislature. It is to be hoped that Dr. Celli's interpellation will bear fruit, there being few reforms so urgent as that contemplated by his motion if Italy is to retain her chief industry—the vine and olive culture—at its normal standard and is not to lose her 'amenity' so seriously compromised in the year now passing."

CONVALESCENT HOMES ASSOCIATION.

THE constitution and rules of this new association were settled at a recent meeting of the council. The object of the association is to coördinate the work of public convalescent homes receiving London convalescent patients, whether from their own homes or from the metropolitan hospitals; to obtain and to disseminate information on the needs of London in respect of convalescent relief and on all other matters of interest or importance to the members of the association; to advise them on equipment, management, and maintenance; to watch over and to protect their rights and interests as they may be affected by legislation or otherwise; to serve as a means of communication and to assist coöperation between convalescent homes and hospitals and other public institutions; and generally to take such action as may be desirable in any matter in which convalescent homes are interested. The council, which is to be the governing body of the association, is to consist of a certain number of representatives according to the number of beds in each convalescent home, representatives of the metropolitan hospitals, and a representative of each of the following public bodies: the Metropolitan Hospital Sunday Fund, the Hospital Saturday Fund, the Central Hospital Council, the Charity Organisation Society, and the Invalid Children's Aid Association. An executive committee will be a committee of the council and will transact the main business of the association. Each convalescent home becoming a member of the association is to contribute a small subscription, the amount depending on the number of beds possessed by the home. All institutions and individuals, not being already subscribers, applying for information or otherwise making use of the association are to pay a minimum fee of 1*s.* for each application. The President of the Royal College of Physicians of London and the President of the Royal College of Surgeons of England are to be *ex officio* vice-presidents of the association. We think that there are very evident uses for such a body as the Convalescent Homes Association and we are glad to see that it is getting into working order. The starting of such an association is an exceedingly troublesome matter, as there are many difficulties to be overcome. Some of the convalescent homes see no need for the new body and fear to do anything which may sacrifice any part of their independence. They need have no such fears, for the association should prove of the greatest assistance to the individual homes and should tend to coördinate them so as to increase greatly their influence and value. We shall look forward with interest to the work of the Convalescent Homes Association.

THE first congress of the International Society of Surgery will be held in Brussels in September under the patronage of His Majesty the King of the Belgians. The congress will be in session from Monday, Sept. 18th, to the following Saturday inclusive, under the presidency of Dr. Theodor Kocher, professor of surgery in the University of Bern. All further information can be obtained from Mr. Reginald Harrison, F.R.C.S., the British delegate, 6, Lower Berkeley-street, London, W.

THE French Académie de Médecine has awarded, through the Minister of the Interior, a silver medal to Dr. Alan B Green, bacteriologist in charge of the vaccine lymph department of the Lister Institute of Preventive Medicine, for his work on "Vaccine," published in the Proceedings of the Royal Society and in the Report of the Medical Officer to the Local Government Board.

THE first International Congress of Physical Therapy will be held at Liége from August 12th to 15th, under the patronage of the Belgian Government and a number of eminent medical men and men of science of all nations. Communications should be addressed to the secretary of the English committee, Mr. W. Deane Butcher, M.R.C.S., Holyrood, Ealing, W.

Professor D. I. Mendeléeff, the distinguished professor of chemistry at the University of St. Petersburg, completed the fiftieth year of his public professional services on June 13th and a celebration of his half a century in Government service will take place on August 30th.

UNIVERSITY OF OXFORD.—An examination for the Radcliffe Travelling Fellowship of the annual value of £200, tenable for three years, will be held in Hilary term, 1906.

Looking Back.

FROM

THE LANCET, *SATURDAY*, July 21, 1827.

THE RESPECTABILITY OF THE COLLEGE OF SURGEONS, AND ITS USEFULNESS IN THE SUPPRESSION OF QUACKERY.

IT has often been observed, that visitors can readily detect abuses, when those who are living within the sphere of their operations are blind to their turpitude. It would appear, from the indifference manifested by some, that the march of improvement in the legislation of corporate bodies, had been so rapid as to leave little to reform; and that our College of Surgeons had really accomplished all that it was designed to do; that it had become the sole protector of "sound chirurgical knowledge;" and that it discountenanced and suppressed everything which had a "contrary tendency."

On looking over a work recently written by a German physician, (Dr. Casper,) describing the state of medicine in England and France, we felt, as we have no doubt others will feel, ashamed of the testimony he has given to his countrymen; but at the same time, being convicted of its truth, we were ashamed that we belonged to a body permitting such dissolute and unrestrained quackery. Having spoken of the excessive disproportion of practitioners to the requirements of the population, he says,

"I was shown an address-book of about the thickness of my two fingers, containing the names of those only who were inscribed as Members of the 'Royal College of Surgeons!' It was by no means rare to find on the house doors, the names of two or more surgeons, with the appendix of a Co., as 'Philips, Sumpton, and Company, surgeons, &c.' My readers will probably not be less surprised than myself at these ostentatious displays, and will be disposed to inquire, as I did, what they could mean; whether the gentlemen treated their patients conjointly; whether it was so contrived that one of the Co. should always be at home, in case of accidents, and so forth? At length the riddle was solved. The whole concern was only a branch of the London quackery. Among the common sort of English, in whom a commercial spirit is not less innate than that of 'Freedom,' the word 'Company' is considered a good assurance for the solidity of a firm; and, by analogy of reasoning, two or more surgeons are supposed to possess more skill when practising in 'Company,' than if alone.

"In London, as in Paris, the punctum saliens of medical quackery is *syphilis*, and here again we find 'Consultation Houses,' and the usual nostrums. But it would offend the vision of the modest and bashful Englishman if such things should be announced on hand-bills at the corners of streets; the quacks in London have therefore invented a different plan to disseminate their boasted skill among the multitude: they employ men to distribute little advertisements to the foot passengers, who at their leisure may read the disgusting contents. Some of them have some enticing motto prefixed, as 'Speedy cure on moderate terms!' others are said to be 'For the benefit of the army, navy, and the public in general!!' I was informed that there were certain 'Medical establishments where men are rescued from perilous diseases without the use of mercury, which has proved the death of thousands, in the hands of *ignorant quacks!*'

"Just in the same style hundreds of similar forms of deceiving the public practised in the capital of a country, which may be proud to call a Hunter, an Abernethy, a Lawrence, a Bell, and a Cooper her sons. According to the pretentions of the advertisers, what wonders are not 'Leake's justly famous pill' capable of accomplishing? Prepared and sold, as the dirty paper announces, by the Taylors, in a street leading to Blackfriars-bridge, who say they are *Members* of the *Royal College of Surgeons!*" Dr. Casper then goes on to sneer at the contents of the papers, detailing the marvellous efficacy of these pills of "immortal and universal fame," and concludes his remarks by congratulating his countrymen on their being free from such disgrace. "Luckily," says he, "Germany can look down upon and laugh at these disgraceful fooleries of her *enlightened* neighbours!!"

THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH, 1505-1905.

THE Royal College of Surgeons of Edinburgh, which has during the present week been commemorating with suitable ceremonial and social entertainment the 400th anniversary of its incorporation, is the oldest surgical or medical corporation in the United Kingdom. The Royal College of Physicians of London, the next in order of age, dates its official birth 13 years later, in 1518. All the other colleges date from a century to three centuries later. There is thus a very special interest attached to the celebration of the fourth centenary of this College, and the readers of THE LANCET will be interested in a sketch, brief though it may be, of its history during the eventful 400 years of its existence.

The precise date of the birth of the College as a corporate body is July 1st, 1505, a date which places it eight years before the battle of Flodden, at a time when Edinburgh was a walled city and when Scotland had not passed through the turmoil of the Reformation.

The charter was granted by the town council of Edinburgh as the result of the presentation of a "Bill of Supplication" to that body by "the kirkmaister and brethren" of the "Surregeanis and Barbouris" within the Burgh of Edinburgh. The charter, or "Seill of Cause," appears to have been granted readily. The main supplication of the surgeons and barbers was that they should be incorporated as one of the burgh crafts, so that they must have formed by that date a considerable body, associated in some way and acting together with some measure of *esprit de corps*. They, however, not only sought incorporation as a craft but in their petition applied for power to admit others into their craft after examination. The inclusion in their petition of the request for an examination to be held by the masters of the craft has been much dwelt upon by some of the historians of the College not only as a praiseworthy arrangement but as a novel and unique condition at the time. The examination, however, was only a means of securing that the monopoly of practising the craft within the burgh should be in the hands of competent men. This is brought out in the words of the petition "thatt na maner of persoun occupie nor use any poyntis of oure saidis craftis of surregerie or barbour craft within this burgh bott gif he be first frieman and burges of the samyn and thatt he be worthy and expert in all the poyntis belongand the saidis craftis deligentlie and avysitlie examinit and admittit be the maisteris of the said craft." That the examination was intended to be a test of such knowledge as the candidate could acquire from the masters of the craft in Edinburgh is evident from the wording of the petition, for it is there specified that "he knaw anatomea nature and complexioun of every member in manis-bodie and in lykewayes he knaw all the vaynis of the same thatt he may mak flewbothomea in dew tyme and als thatt he knaw in quhilk member the signe hes domination for the tyme for every man aucht to knaw the nature and substance of every thing thatt he wirkis or ellis he is negligent." It is thus quite evident that what we now call "professional knowledge" was required of the candidates and that this is to be regarded as the earliest beginning of the system of examination still guarding the portals to the practice of surgery. That those early masters of the craft valued in some degree a knowledge of anatomy is shown by the further request in their petition "that we may have anis in the yeir ane condampnit man efter he be deid to mak anatomea of quhairthrow we may haif experience, ilk one to instruct uthers." And there is added the promise, "And we sall do suffrage for the soule."

SIR PATRICK HERON WATSON,
PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH

While this examination was necessary before admission to the craft it was preceded by a period of apprenticeship to one of the masters extending over a period of five years. Even at the early date of which we write there was what may be taken as the equivalent of the present preliminary examination, for no master was allowed to take an apprentice unless the proposed apprentice could "baith wryte and reid." The charter thus granted by the civic authorities was confirmed in the following year by Royal authority.

For three quarters of a century there appear to be no records of the doings of the newly incorporated craft, but by the year 1589, according to Dr. John Gairdner's investigations, a practice had sprung up of separating in some measure the barbers from the surgeons. By that date it appears that "single" barbers were admitted to the corporation, but not to its full freedom, and were forbidden to practise any "point of chirurgie under pain of tinsell of their fredome."

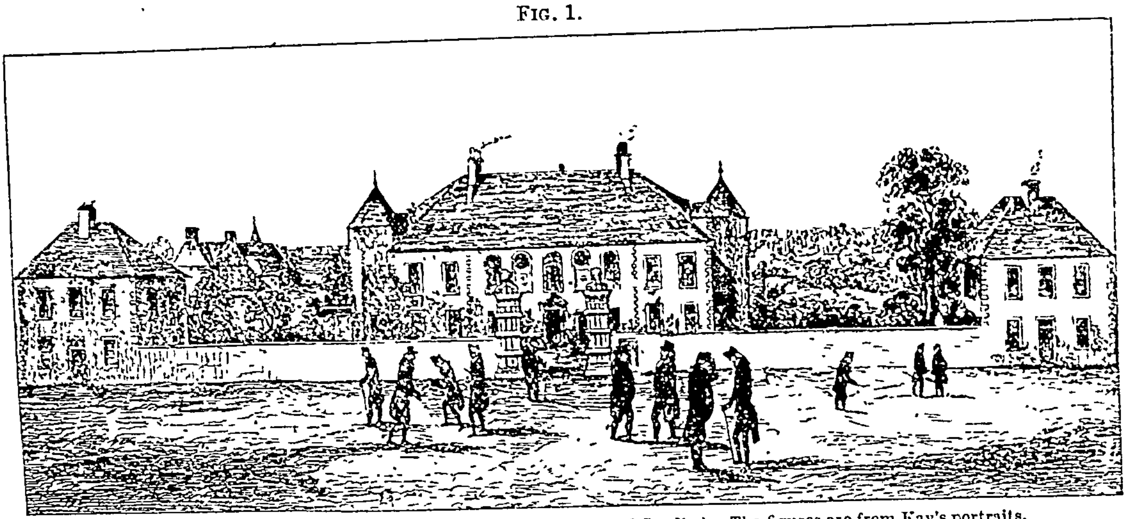
In the time of the Protectorate there existed outside the surgeons and barbers craft a body both of unincorporated physicians and unincorporated apothecaries who threatened to invade the domain which the incorporated craft claimed as their own. There seems to have been great alarm aroused by the aggressive action of those two bodies but the alarm was allayed by the apothecaries abandoning their allies the physicians and coming to terms with the surgeons. The outcome of this was that a "brotherhood of apothecaries and chirurgeon-apothecaries" was constituted. The town council Act establishing the brotherhood bears date Feb. 25th, 1657, and was confirmed by Parliament on August 22nd, 1670. Another Act in 1695 constituted the surgeons "chirurgions and chirurgion apothecaries."

This Act of 1695 was the Parliamentary ratification of a Royal grant received from William and Mary the previous year. It made very important concessions, for whereas by the first charter the privileges of the surgeons and barbers were confined within the city walls this Act empowered the combined surgeons and apothecaries to examine all who practised anatomy, surgery, and pharmacy within the greatly extended bounds of the three Lothians and the counties of Peebles, Selkirk, Roxburgh, Berwick, and Fife.

The year 1694 is a memorable one because of other important developments, for at this date it is clear that the idea of a medical school had definitely appeared. An active member of the incorporation, by name Alexander Monteith, applied individually to the town council for a grant of dead bodies for the purpose of dissection. This petition was granted and also a room in which to make the dissections. The regular apprentices of the surgeons were to be admitted to the dissections at half fee. Following immediately upon the granting of this personal application the incorporation made a like request and was equally successful in having it granted. An important condition was attached to the grant to the surgeons—namely, "that the petitioners shall, before the terme of Michallmes 1697 years, build, repaire, and have in readiness ane anatomicall theatre, where they shall once a year (a subject offering) have ane public anatomicall dissection, as much as can be showen upon one body."

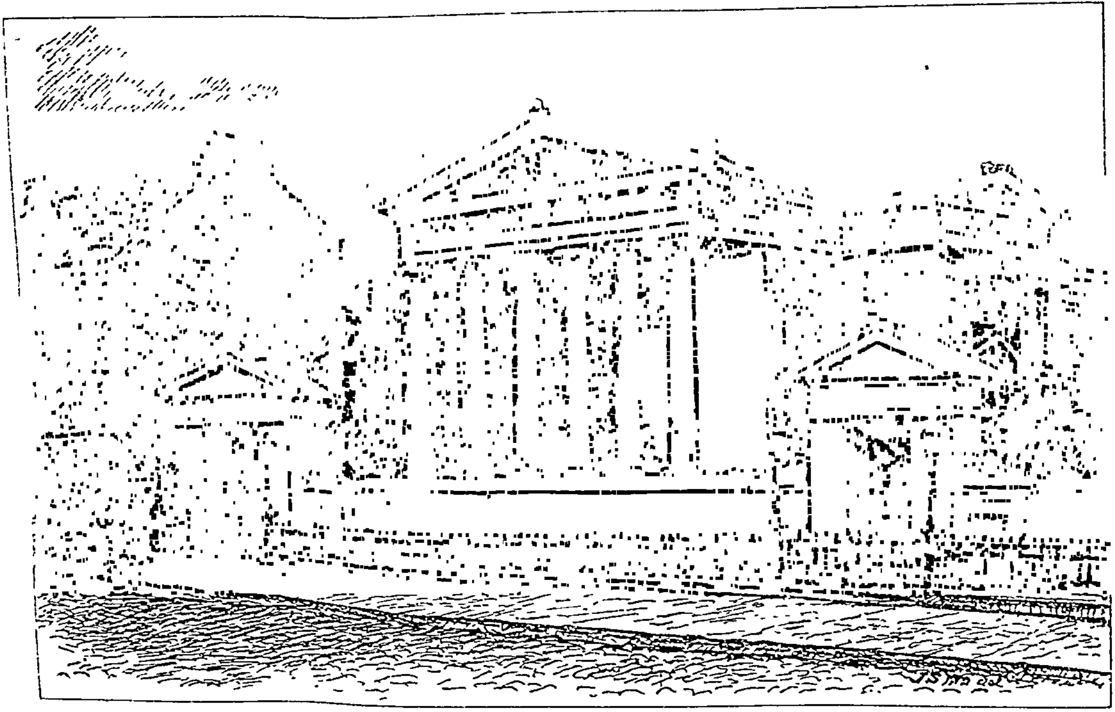
Monteith in the action which he took was prompted by, or at all events associated with, Dr. Archibald Pitcairn who held the nominal office of professor of practice of physic in the University and had recently returned from Leyden imbued with the idea of seeing a school established in Edinburgh. The action of these two men must be regarded as having been the means of initiating a definite school of anatomy in Edinburgh. In December, 1697, the surgeons' anatomical theatre was reported to the town council as completed and the council confirmed its grant of 1694 already mentioned.

FIG. 1.



Old Surgeons' Hall from the north, 1697 (from a drawing by Paul Sandby). The figures are from Kay's portraits.

FIG. 2.



Royal College of Surgeons of Edinburgh, 1905 (from a pen-and ink drawing by J. Smith, M D.). Reproduced with the kind permission of the artist.

The surgeons further appointed a committee to arrange "the methods of the public dissections and the operators." The "operators" were those selected to give the formal course of anatomical instruction and an interesting minute indicates a course extending over ten days, each day being taken by a different "operator."

A new order of things was begun in the year 1705, 200 years after the date of the first charter, by the introduction of a system which doubtless indicated that anatomical and surgical knowledge was advancing too rapidly to be dealt with in the primitive fashion described. In this year the surgeons intrusted the entire duty of teaching to *one* of their members, while the town council conferred upon the same surgeon the appointment of professor of anatomy in the University together with a salary of £15 per annum. For the next 15 years this dual appointment was held by

Robert Elliot, Adam Drummond, and John McGill. In 1720 Drummond and McGill, who had been joint teachers, resigned in favour of Alexander Monro. Up to this time, owing to the close and friendly relations subsisting between the town council and the Incorporation of Surgeons and to the fact that the town council appointed the professors in the University, the arrangement indicated above was evidently carried on to the satisfaction of all concerned.

Following the appointment of Alexander Monro medical education rapidly advanced. Although Monro was only 22 years of age when appointed lecturer on anatomy, he had been under the guidance of his father carefully prepared by study, both in Britain and on the continent, for the post he was called to occupy. He gathered round him at the surgeons' theatre four members of the College of Physicians (established by Royal Charter in the year 1681) who taught the theory and practice of medicine and chemistry. Five years after Monro's appointment he, for reasons which need not be dwelt upon, applied to the town council to be provided with room in the University in order to teach there. This request was granted and soon afterwards his four colleagues at the surgeons' theatre applied to be made professors in the University, a request which was also granted. This was practically the beginning of the medical school of the University.

In the meantime other changes were steadily taking place in the older incorporation. After the union of the surgeons and apothecaries the surgeons drifted apart from their brother craftsmen the barbers, although they retained their former rights as barbers and surgeons. The barbers, as has been already stated, had been for some time admitted to the craft without enjoying the full privileges of barber surgeons; in fact, on their admission they bound themselves not to practise surgery. It was not, however, until 1722 that a definite and formal separation was effected on terms mutually arranged and thereafter accepted and approved by the Court of Session. One of the curious terms in this dissolution of co-partnery was the transference to the barbers of the right to make *aqua vitæ*. This right had been one of the privileges granted to the barber-surgeons by their 1505 Charter, so it was at this time lost to the surgeons. The giving of the privilege to the barbers was regarded as compensation to them for the severance of their surgical connexion. It is of interest to note that a similar separation of the barbers and surgeons in London was effected in 1745.

The year 1778 was signalised by the granting of a new charter by which the Incorporation of Surgeons was raised to the dignity of a Royal College with the designation, "The Royal College of Surgeons of the City of Edinburgh." This charter gave the College a national position, while it did not dissolve its connexion with the civic authorities. The origin of this connexion has been indicated in the foregoing account of the origin of the barber-surgeons' craft. The civic authorities, who had granted the charter of incorporation, continued to have an important voice in the affairs of the College and even had control over the choice of the president. For many years there appears to have been little, if any, friction between the civic authorities and the College or the University, in both of which bodies they held the patronage. In the early part of the nineteenth century, however, the town council exercised its right by excluding from the presidential chair the nominee of the College and this because his politics were not acceptable. In 1833 after much striving, this connexion between the civic authorities and the College was finally severed. The town council could no longer dictate to the College and the College president was no longer required to be a member of the town council, which hitherto he had been.

Even after this separation the surgeons continued to be one of the city incorporations. Indeed, it was not until the comparatively recent date of 1851 that by Act and charter all trace of the civic character of the Royal College was swept away and its position as a national college was secured beyond dispute.

It is of interest to inquire how the College has been housed from the time of its incorporation down to the present time. In the earliest days the meetings of the craftsmen were held in the house of the "deacon," as their chairman or president was then designated. In a very short time, however, they are found renting premises to serve as a special meeting place and paying £40 a year as rent. In 1669 they built for themselves a "convening house," which was altered, added to, and, in part at least, rebuilt in 1697. The Surgeons' Hall of that date is represented in the accompanying illustration (Fig. 1). This building was erected within the south-east angle of the city wall on ground originally belonging to the Dominican Friars and overlooking what is still called "The Pleasance." Other buildings were in process of time added, the whole forming three sides of a square and for many years known as Surgeons'-square. The old "Surgeons' Hall" is properly regarded as the birthplace and the nursery of the Edinburgh Medical School. This venerable building with its curious historical associations was superseded in 1832 by the handsome building represented in another illustration (Fig. 2). The Surgeons' Hall of to-day was designed by W. H. Playfair. It contains a large and valuable museum, the gathering of generations of anatomists and surgeons, including the collections of Bell, Wilson, and Barclay. On the ground floor is the large hall in which the meetings of the College are held, also library, writing, and committee rooms. Some of these rooms are fitted with the oak panelling taken from the older hall, while the valuable portraits belonging to the College adorn their walls. The lecture rooms attached to the College are not seen in the accompanying illustration as they are situated behind the main building.

The relations of the surgeons to medical teaching in Edinburgh are deserving of some special notice. It has already been recounted how the Incorporation of Surgeons came to be the parent of the Medical School in the University by the transference of the lecturers from the one to the other. For some time the University professors continued to deliver their lectures in the theatre attached to Surgeons' Hall, but in the time of the first Monro they removed from there. In 1788 the College of Surgeons feued a piece of their ground adjoining their Hall to John Bell for the purpose of building thereon an anatomical school for himself, granting him permission to use their theatre until his own was built. John Bell was a pupil of the second Monro and was the first to start lecturing on anatomy as a rival to the recognised teacher of that subject. For years the building then erected continued to be a centre of anatomical teaching. The extra-mural teachers, as they are now frequently designated, include the names of John and Charles Bell, of Barclay, Gordon, Cullen, and Knox. It was in the rooms connected with, or gathered round, Surgeons' Hall that the extra-mural school which began with John Bell, and still continues to do so much for medical education in Edinburgh, at first found a home.

Before leaving those old times altogether it will interest some of the readers of this historical sketch to know the position which the surgeons took up in such an important national movement as the Protestant Reformation. An oath was required on entrance to the College binding them to "continue in the profession of Christ's blessed evangell as the same is publicly preached within this realm," and Dr. Gairdner thinks that "these words were clearly intended to exclude Roman Catholics." However that may be, the surgeons of Edinburgh signed the Covenant on August 25th, 1638, and "ordained their haill prenteisses and servands to subscryve the same als weill as themselfis, and that there sall be in no tyme cumming any freeman admittit, either chirurgeon or barbour, nor any buike prenteisses or servands, but sic as shall subscryve the Covenant." Needless to say, these tests have for long been things of the past.

Turning our attention now to more modern times, it is to be noted that the Royal Charter of 1851 not only finally freed the surgeons from their civic thraldom and gave to their corporation the name and title of "The Royal College of Surgeons of Edinburgh" but defined the mode both of admission to its Fellowship and of granting its Licence and gave disciplinary powers over both its Fellows and Licentiates. As a result of the Medical Act of 1858 the Royal College of Surgeons united with its sister college in Edinburgh to confer, after a united examination, a medical and surgical diploma which is still widely known as the Edinburgh double qualification. This conjoint examination was inaugurated at the Royal College of Surgeons in 1859 when the late Sir Douglas Maclagan occupied the presidential chair. In 1884 a further change in the same direction took place. This was the inclusion of the Faculty of Physicians and Surgeons of Glasgow in the foregoing arrangement and the institution of a common examination, the successful passing of which conferred upon the candidate the licences of the three corporations. This is known as the Scottish triple qualification.

After the passing of the Dentists Act of 1878 the College established a Dental Examining Board and a diploma in dental surgery conveying the designation of "Licentiate in Dental Surgery" (L.D.S.) to successful candidates. 11 years later, in 1889, the College, in conjunction with the Royal College of Physicians of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow, instituted a qualification in public health making successful candidates "Diplomates in Public Health" (D.P.H.).

A few words regarding the Fellowship will complete the account of the College as a diploma-granting body. For many years the Fellowship of the College was conferred only on prominent licentiates, or on men who had attained local success or some degree of distinction in the practice of medicine or surgery. It was conferred by the vote of the Fellows. There was no intermediate stage between the Licence and the Fellowship. After discussion, spread over a number of years, the College determined in 1883 to open its Fellowship to examination and this was first acted upon in the following year. The College reserved, however, the power to dispense with the examination in notable and exceptional cases.

The list of distinguished men who have lectured at Surgeons' Hall is a long one and includes the name of Lister. The professoriate of the medical school in the University has been largely supplied by men who have lectured in the extra-mural school of which, as has been said, Surgeons' Hall was the centre. The freedom granted by the University to its students to attend a proportion of their classes under extra-mural lecturers has acted as a great stimulus to teaching in that school, which has reacted beneficially upon the University. The long list of "Deacons" and Presidents contains many names still held in reverence by Edinburgh men and not a few names of men who have left their impress deeply in the annals of progressive medicine.

Such is briefly the history of the College which has this week been celebrating its fourth centenary under the presidency of Sir Patrick Heron Watson, one of the most courtly men in the profession in Scotland and one of the last of the leading surgeons of the Edinburgh School who have practised both as surgeons and as physicians.

In the preparation of this sketch we desire to acknowledge our obligations to the historical researches of Dr. Gairdner, who was President of the College when its present Hall was opened; to Sir John Struthers's account of the Anatomical School of Edinburgh; and, lastly, to the interesting memento of the fourth centenary of the College written by Dr. John Smith, one of the past presidents of the College, and just published. Dr. Smith placed other literary material at our disposal and kindly granted permission to reproduce the view of Surgeons' Hall as it at present appears, which is from his facile pen.

Much might be written on the social qualities of successive generations of Fellows, of their song-writing and their song-singing, their wit and their humour, but those things are of local interest only, though by lightening the daily burden of professional life they have not been without influence on the progress of medical science in Edinburgh.

THE PREVENTION OF EPIDEMIC SMALL-POX.

A Conference on the Prevention of Epidemic Small-pox, which was attended by a great number of provincial mayors and representatives of municipal and rural authorities from all parts of the United Kingdom, was held at the Mansion House, London, on July 18th, the Lord Mayor being in the chair.

Mrs. Elizabeth Garrett Anderson, M.D., the honorary secretary of the Imperial Vaccination League, introduced the subject of the conference to those present in a few words. She stated in detail how extensively a memorial to the Government urgently pleading for obligatory revaccination had been signed by a great number of chief magistrates of towns in England, Scotland, and Ireland, and by chairmen of urban and district councils of places that had suffered from epidemic small-pox in the one and a half years ending July 1st, 1905.

Briefly stated, the reasons put forward in support of systematic revaccination at school age are that by the age of 12 years the protection against small-pox afforded by primary vaccination is in large measure worn out and children of that age when exposed to the contagion of small-pox are liable to take the disease, though for many years longer they would probably only have it lightly. The task of providing an adequate amount of glycerinised lymph would be much simplified by the demand for such lymph being nearly the same year by year. At present there is an enormous demand in epidemic years and a comparatively small demand at other times. Lymph is not prepared quickly or cheaply, and it does not keep for indefinite periods of time. If the Government knew approximately the number of tubes that would be wanted each year the problem of providing what is required would be much simpler than it is at present. Protection from small pox by systematic revaccination would be cheaper and very much more successful than by providing costly small-pox hospitals and attempting to deal with epidemic small-pox by the isolation of patients. There would not be any great practical difficulty in organising general revaccination. In the schools under the London County Council the number of children of the average age of 12·8 years forms 6·25 per cent. of the whole number of children in the schools. This percentage amounts to about 34,000 children who would have to be revaccinated in London each year in 521 separate schools. With whole-time officials the work could be done gradually and without any difficulty. Systematic revaccination has been the rule in Germany for many years, with the result that epidemic small pox is not known there. It has now been adopted also in France. No other means of prevention can be relied upon. The cost of providing isolation hospitals for small-pox patients is enormous and it tends always to increase, owing to the difficulty of getting sites and of working the hospitals at a considerable distance from all other houses. The great economic advantage of preventing the occurrence of epidemic small-pox by the general revaccination of children at school age was therefore urgently pressed upon the attention of the Government.

The conference emphatically endorsed the view expressed in the memorial that epidemic small-pox during the past 18 months had caused much suffering, destruction of property, increase of municipal expenditure, and interference with trade, and discussed from many points of view the great importance attached to the prevention of epidemic small-pox by the systematic revaccination at school age of all but the children relieved under the exemption clause and of those who for a time are excused on the ground of ill-health.

The Lord Mayor of York moved a proposition declaring that the continued recurrence of epidemic small-pox involved much needless suffering, waste of public money, and increase of municipal expenditure, and Sir William Broadbent, in seconding this, observed that if there were vaccination and revaccination as proposed small-pox would become unknown.

The Lord Provost of Glasgow gave statistical reasons in support of the proposition and Dr. J. G. Glover added to the information supplied to the conference by giving details concerning the outbreak of small-pox at Leicester.

After the proposition had been carried unanimously Sir William S. Church found no difficulty in showing that epidemic small-pox ought to be prevented in this country as it has been since 1875 in Germany by the systematic revaccination of children in their thirteenth year and his motion to that effect was seconded by Alderman J. Kilburn of Dewsbury and agreed to by the meeting unanimously.

The Duke of Northumberland, who was announced on the agenda paper as the proposer of a vote of thanks to the Lord Mayor for presiding at the meeting, was the next speaker, but instead of moving the vote of thanks he submitted the following motion which was carried unanimously:—

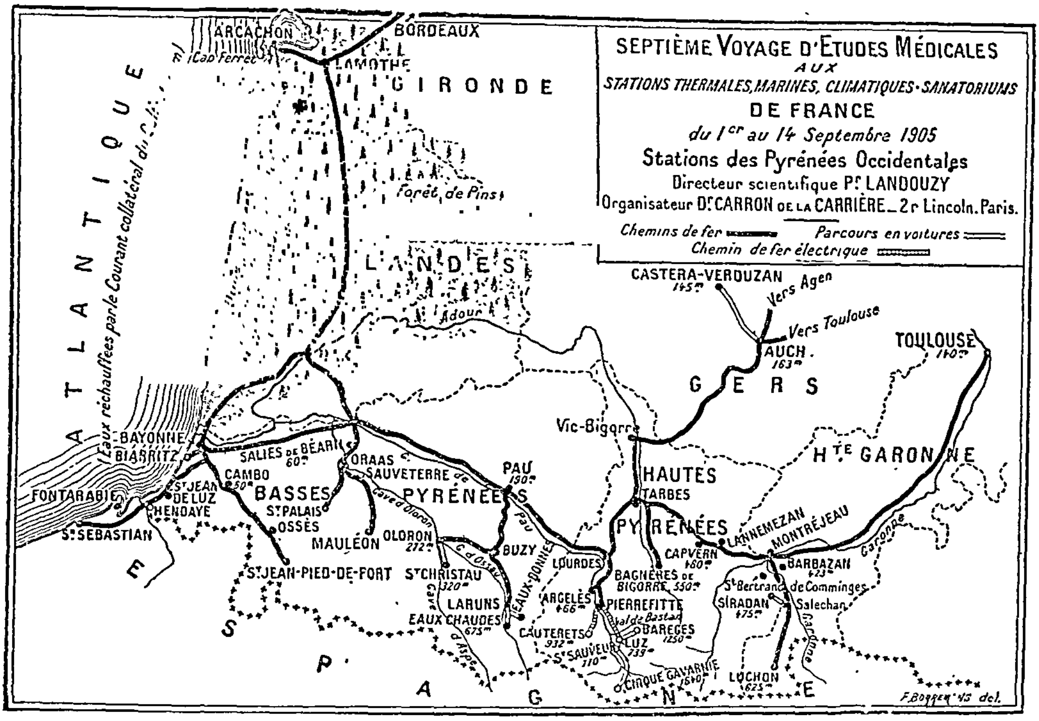
> That this meeting of Lord Mayors and Mayors, Lord Provosts and Provosts, and chairmen of the urban or rural district councils of such towns and localities in Great Britain and Ireland as have suffered collectively from upward of 480 separate epidemics of small-pox within the last 18 months, ventures to urge upon his Majesty's Government the great importance of preventing the recurrence of such epidemics by the systematic revaccination at school age of all but the children relieved under the exemption clause and of those who are for a time excused on the ground of ill-health.

This motion received hearty support from the Mayor of Preston and the Mayor of Birkenhead whose efforts were seconded by Mr R. Brudenell Carter who considered that the amount of security afforded by what were called sanitary precautions taken at Leicester was very inadequate for the requirements of the public. The motion was also supported by Dr. H. E. Armstrong of Newcastle-upon-Tyne.

This influential and important meeting terminated with a cordial vote of thanks to the Lord Mayor for presiding, which was proposed by Dr. E. J. Edwardes, seconded by Mrs. Garrett Anderson, and carried with acclamation.

VOYAGES D'ÉTUDES MÉDICALES.

THIS sketch map of the Western Pyrenees district illustrates the annual "voyage" arranged for Sept. 1st to 14th next and described in THE LANCET of June 24th, p. 1739. Anyone desiring full details of this journey should write to Dr. Leonard Williams, 8, York-street, Portman-square, London, W.



ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY meeting of the Council was held on July 13th, Mr. JOHN TWEEDY, the President, being in the chair.

The PRESIDENT reported that at a meeting of the Fellows held on July 6th Mr. Edmund Owen and Mr. R. J. Godlee were re-elected, and Mr. C. H. Golding-Bird and Mr. Harrison Cripps were elected members of the Council, as already reported in THE LANCET.

The PRESIDENT further stated that Mr. Cripps being fourth on the poll would become substitute member of Council for Sir Alfred Cooper.

Mr. Owen, Mr. Godlee, Mr. Golding Bird, and Mr. Cripps were introduced, made declarations in the terms of the oath prescribed by the Charter of 1800, and took their seats as members of the Council.

It was resolved that the museum should be closed during August and September to allow of the cleaning and re-painting of several of the rooms.

On the recommendation of the Library Committee it was resolved that £100 should be allowed for the repair of bindings of books in the library.

In accordance with the recommendations of the Committee of Management it was resolved that, subject to the condition that a visitor appointed by the Royal College of Physicians of London and the Royal College of Surgeons of England should periodically inspect the examinations, candidates who have received the diploma in medicine and surgery of the Egyptian Government, after passing the required examinations and completing the curriculum of professional study at Cairo extending over four years, shall be admitted to the final examinations of the London Conjoint Board on the completion of one year of additional study at a recognised medical school and hospital in the United Kingdom, during which they shall complete the courses required by the regulations of the Conjoint Board.

The following professors and lecturers were appointed:—Hunterian professors (three lectures each): Mr. J. Warrington Haward, Mr. Arthur Henry Cheatle, Mr. Herbert J. Paterson, and Mr. Charles Gabriel Seligmann. Arris and Gale lecturers: Mr. J. H. Watson (two lectures) and Dr. S. W. Curl (one lecture). Erasmus Wilson lecturer (three lectures): Mr. James Sherren.

It was resolved to direct the removal from the roll of a Member who had previously been removed from the Medical Register.

The PRESIDENT reported the holding of the Fellows' dinner on July 6th and stated that Mr. Thomas Bryant, on behalf of the surviving members of the permanent committee of the Fellows' dinner, formerly held outside the College premises, had presented a loving cup to the College, together with the minute book of the committee giving particulars of the dinners held between 1846 and 1897. A vote of thanks to the permanent committee for these gifts was carried.

The PRESIDENT reported that the College had purchased from Mrs. Trimmer a silver tankard and two goblets, formerly owned by Sir Erasmus Wilson and presented by his executors to the late Mr. Edward Trimmer.

The PRESIDENT reported that as the representative of the College on the court of the University of Sheffield he had attended the opening of the University by His Majesty the King on July 12th and that in his absence the members of the Atlantic Union and other guests of the College had been received by the Vice-Presidents on the occasion of their visit to the museum.

The SECRETARY suggested that the names of the following Fellows, about whom nothing had been known for many years and who were probably dead, should be omitted from future editions of the College Calendar: Theophilus Miller Gunn, Member 1842, Fellow 1858; William Major, Member 1833, Fellow 1853; Frederick John Robinson, Member 1842, Fellow 1859; Thomas Seagram, Member 1833, Fellow 1856; Joseph Webb, Member 1839, Fellow 1856; and Frederick Whitfield, Member 1825, Fellow 1859.

The PRESIDENT reported that questions had recently been raised as to the eligibility of a dental surgeon for call to the Bar but that in the case in question the dental surgeon, who was a Licentiate of the College, was duly called to the Bar on July 5th by the benchers of the Middle Temple.

The Council then proceeded to the election of officers for the ensuing year and (as announced in our columns last week) Mr. Tweedy was re-elected President and Mr. H. T. Butlin and Mr. Owen were elected Vice-Presidents.

A letter was read from Sir Henry G. Howse resigning his membership of the Committee of Management and Mr. Godlee was appointed in his stead.

A letter was read from Dr. S. H. Habershon stating that by the rules of the Convalescent Homes Association it was proposed that the President of the College should *ex officio* be a vice-president of the association and inquiring whether the College would assent to this proposal. It was resolved to approve of this.

It was resolved to send an address of congratulation to the Royal College of Surgeons of Edinburgh on the occasion of its fourth centenary celebration.

It was decided that the next meeting of the Council should be on July 27th.

THE ASSOCIATION OF BRITISH POSTAL MEDICAL OFFICERS: ANNUAL DINNER.

THE annual dinner of this association took place at the Whitehall Rooms, Hôtel Métropole, London, on July 13th. Dr. J. Walton Browne, ex-President, in the unavoidable absence, through an accident, of the President, occupied the chair. After the toast of "The King" had been duly honoured that of "The Imperial Forces" was proposed by Mr. Joseph Walton, M.P., in a vigorous and, as it was afterwards alluded to by Mr. Wason, semi-political speech. Referring to the recent sad accidents to submarines, he thought that their use should be prohibited by international consent as barbarisms. The toast was replied to by Captain Hamilton, R.N., chief officer of the London Fire Brigade, who thought that so long as submarines were used England must have the very best, and by Surgeon-General A. H. Keogh, C.B., Director General of the Army Medical Department, who said, in view of a recent statement given in evidence by a highly competent medical witness that 40 per cent. of the Volunteers were unfit for war, it was necessary to ascertain undoubtedly whether that statement was true. For his own part he did not know but it would certainly be necessary to find out all the facts, for a war taking place in this country would be very different from those with which we had had hitherto to deal. The purpose of the Army Medical Service was to maintain the fighting efficiency of the army and an inefficient Medical Service meant disaster. Efficiency was the thing to be looked for and must be attained at any cost. He referred to the Commission appointed to inquire into and to report upon the care and treatment of the sick and wounded during the South African War and its recommendations and said that every one of those recommendations was being carried out. He gave high praise to the Treasury, remarking that the proposals had received from the Treasury every possible support. He was glad to think that the Army Medical Service was progressing satisfactorily but he would remind the country and he would remind the medical profession that in times of peace no interest was taken in the medical department and he trusted in future that that would be remedied. Colonel S. Raffles Thompson, late assistant secretary to the General Post Office, also replied and strongly supported Mr. Arnold-Forster's recently issued circular with regard to the Volunteers, remarking that it was simply common sense. "The Houses of Parliament" was proposed by Mr. Stanley Leathes, secretary of the Civil Service Commission, and replied to by Mr. J. Henniker-Heaton, M.P. The toast of "The Postmaster-General, the Secretary, and other Executive Officers of the Post Office" was proposed by Dr. R. Paramore and responded to by Mr. C. H. Bundy, assistant secretary to the Post Office, who remarked that in 1854 there were no postal medical officers whatever. In 1855 one was appointed. In 1859 the capitation system came into existence and medical officers were appointed in London. In 1870 this was extended to the provinces. Last year—viz., 1904—however, there were 1830 postal medical officers and 800 more were about to be added, probably in the course of the present year. "The Association of British Postal Medical Officers" was proposed by Mr. Eugene Wason, M.P., who referred to the medical officers as the Intelligence Department of the Post Office and rendered a high tribute to their work and value. The Chairman, in reply, paid a well-deserved compliment to Dr. R Ritchie Giddings, the honorary secretary, and alluded to the social advantages of the Association. "Our Guests" was proposed by Dr. E. L. Adeney and replied to by Sir Robert Hunter, solicitor to the Post Office. During the dinner a programme of music was performed by the Imperial Quintet and the intervals between the speeches were enlivened by songs by Miss Esther Franklin, Miss Clara Walker, and Mr. George Burdge.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the Sanitary Circumstances and Administration of the Urban District of Nantyglo and Blaina and on Prevalence of Infectious Disease in the District, by Dr. W. W. E. FLETCHER.[1]—This report relates to a Monmouthshire colliery district, with a population of about 13,500, in which a variety of difficulties appear to have arisen in connexion with sanitary administration. Notification of infectious diseases did not come into operation here until 1900. During the five years 1900-04 the notified cases of scarlet fever, diphtheria, and enteric fever have been exceptionally numerous—respectively 558, 1174, and 207. Dr. Fletcher gives the figures for notifications and deaths from each of these diseases during various periods in considerable detail and he has also classified them by age groups. These data show that the district must be included among those with a persistently high attack rate from enteric fever and corresponding mortality from this disease. They show also that the scarlet fever prevalence, though noteworthy in certain years, has not been excessive when the whole period is taken. But with regard to diphtheria the conclusions are much more doubtful. Dr. Fletcher raises the question whether this disease has not been notified in a somewhat loose manner by certain of the medical practitioners in the neighbourhood. Five out of 32 practitioners were responsible for the notification of 949 of the 1174 cases of diphtheria; one practitioner alone notified 429. Dr. Fletcher is of opinion that a strong probability that many of these were not diphtheria is afforded by the low case mortality. Antitoxin seems to have been employed freely but the Metropolitan Asylums Board, with all its resources, added to the use of antitoxin, has only succeeded in reducing the case mortality of the county of London to 10·8 per cent. in 1901 and 1902 and to 9·6 per cent. in 1903, whereas, on the notification figures, Nantyglo and Blaina during a period of four and three-quarter years showed a case mortality of only 4 per cent. It should be noticed also that swabbings from the throat were examined bacteriologically in only one instance. Dr. Fletcher is of opinion that although it may be proper to regard every case of throat illness during the prevalence of diphtheria as a potential source of diphtheria, capable of conveying infection, and consequently requiring isolation and careful watching, yet it would be difficult to justify the notification of every such case, and adds that he feels sure that local medical practitioners will agree on studying the facts set forth that diphtheria cannot have been as prevalent as the notifications suggest. Another difficulty in this district is occasioned by the large scale on which works of sewerage have to be undertaken. The district is now to be drained by the Western Valleys Sewerage Board and it is estimated that its share in the scheme of this board will entail a cost of about £45,000, a heavy burden to be placed on an assessable value of £41,000, even when spread over a long period of years.

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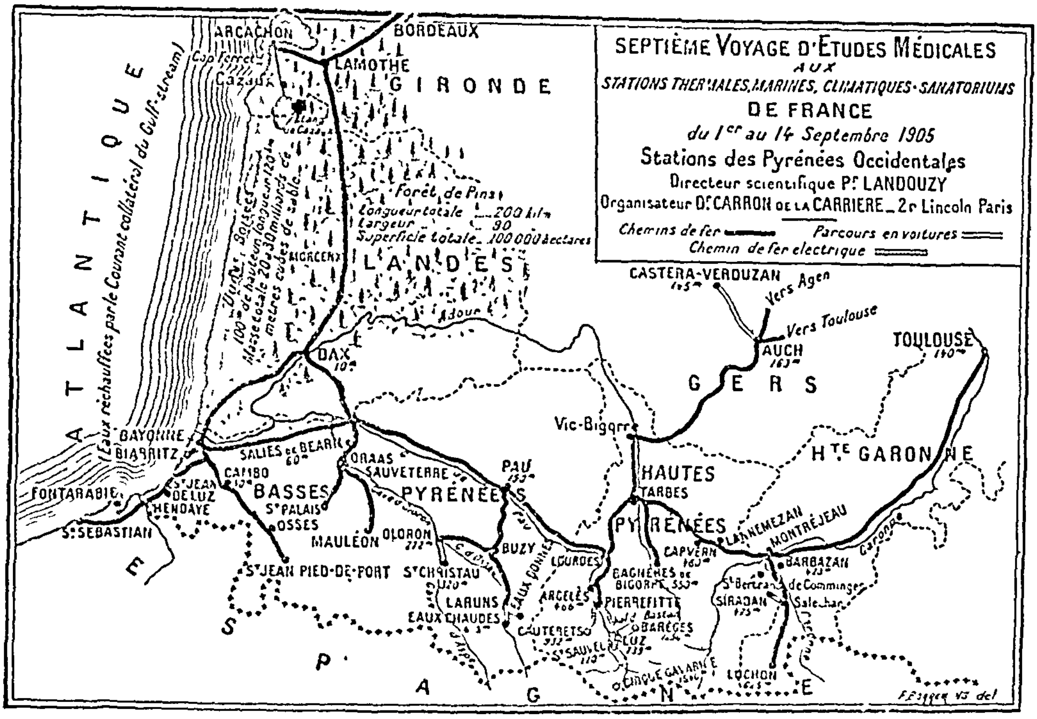
[1] London, Wyman and Sons, Fetter-lane; Edinburgh, Oliver and Boyd; and Dublin, E. Ponsonby. No. 212. Price 3d.

VOYAGES D'ÉTUDES MÉDICALES.

THIS sketch map of the Western Pyrenees district illustrates the annual "voyage" arranged for Sept. 1st to 14th next and described in THE LANCET of June 24th, p. 1739. Anyone desiring full details of this journey should write to Dr. Leonard Williams, 8, York-street, Portman-square, London, W.



ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY meeting of the Council was held on July 13th, Mr. JOHN TWEEDY, the President, being in the chair.

The PRESIDENT reported that at a meeting of the Fellows held on July 6th Mr. Edmund Owen and Mr. R. J. Godlee were re-elected, and Mr. C. H. Golding-Bird and Mr. Harrison Cripps were elected members of the Council, as already reported in THE LANCET.

The PRESIDENT further stated that Mr. Cripps being fourth on the poll would become substitute member of Council for Sir Alfred Cooper.

Mr. Owen, Mr. Godlee, Mr. Golding Bird, and Mr. Cripps were introduced, made declarations in the terms of the oath prescribed by the Charter of 1800, and took their seats as members of the Council.

It was resolved that the museum should be closed during August and September to allow of the cleaning and re-painting of several of the rooms.

On the recommendation of the Library Committee it was resolved that £100 should be allowed for the repair of bindings of books in the library.

In accordance with the recommendations of the Committee of Management it was resolved that, subject to the condition that a visitor appointed by the Royal College of Physicians of London and the Royal College of Surgeons of England should periodically inspect the examinations, candidates who have received the diploma in medicine and surgery of the Egyptian Government, after passing the required examinations and completing the curriculum of professional study at Cairo extending over four years, shall be admitted to the final examinations of the London Conjoint Board on the completion of one year of additional study at a recognised medical school and hospital in the United Kingdom, during which they shall complete the courses required by the regulations of the Conjoint Board.

The following professors and lecturers were appointed:—Hunterian professors (three lectures each): Mr. J. Warrington Haward, Mr. Arthur Henry Cheatle, Mr. Herbert J. Paterson, and Mr. Charles Gabriel Seligmann. Arris and Gale lecturers: Mr. J. H. Watson (two lectures) and Dr. S. W. Curl (one lecture). Erasmus Wilson lecturer (three lectures): Mr. James Sherren.

It was resolved to direct the removal from the roll of a Member who had previously been removed from the Medical Register.

The PRESIDENT reported the holding of the Fellows' dinner on July 6th and stated that Mr. Thomas Bryant, on behalf of the surviving members of the permanent committee of the Fellows' dinner, formerly held outside the College premises, had presented a loving cup to the College, together with the minute book of the committee giving particulars of the dinners held between 1846 and 1897. A vote of thanks to the permanent committee for these gifts was carried.

The PRESIDENT reported that the College had purchased from Mrs. Trimmer a silver tankard and two goblets, formerly owned by Sir Erasmus Wilson and presented by his executors to the late Mr. Edward Trimmer.

The PRESIDENT reported that as the representative of the College on the court of the University of Sheffield he had attended the opening of the University by His Majesty the King on July 12th and that in his absence the members of the Atlantic Union and other guests of the College had been received by the Vice-Presidents on the occasion of their visit to the museum.

The SECRETARY suggested that the names of the following Fellows, about whom nothing had been known for many years and who were probably dead, should be omitted from future editions of the College Calendar: Theophilus Miller Gunn, Member 1842, Fellow 1858; William Major, Member 1833, Fellow 1853; Frederick John Robinson, Member 1842, Fellow 1859; Thomas Seagram, Member 1833, Fellow 1856; Joseph Webb, Member 1839, Fellow 1856; and Frederick Whitfield, Member 1825, Fellow 1859.

The PRESIDENT reported that questions had recently been "fever," and one to diphtheria, but not any to small-pox or scarlet fever. In all 55 deaths resulted from these principal infectious diseases last week, against 60, 65, and 57 in the three preceding weeks. These 55 deaths were equal to an annual rate of 1·6 per 1000, which was also the mean rate last week from the principal infectious diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 18, 31, and 26 in the three preceding weeks, declined again last week to 25, of which 15 occurred in Glasgow, four in Edinburgh, two in Dundee, and two in Aberdeen. The deaths from measles, which had been 13, 17, and 14 in the three preceding weeks, rose again to 19 last week, and included 11 in Glasgow, six in Edinburgh, and two in Perth. The fatal cases of diarrhœa, which had been 15, 14, and 13 in the three preceding weeks, further declined last week to seven, of which three were registered in Leith and two in Glasgow. The deaths from "fever," which had been three, two, and none in the three preceding weeks, rose again to three last week and all occurred in Greenock. The deaths referred to diseases of the respiratory system, which had been 74, 68, and 65 in the three preceding weeks, were again 65 last week, and were 16 above the number in the corresponding period of last year. The causes of 13, or nearly 3 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 17·9, 14·9, and 16·9 per 1000 in the three preceding weeks, rose again to 19·7 per 1000 during the week ending July 15th. During the past four weeks the death-rate has averaged 17·4 per 1000, the rates during the same period being 11·7 in London and 15·1 in Edinburgh. The 143 deaths of persons belonging to Dublin registered during the week under notice were 20 in excess of the number in the preceding week and included 17 which were referred to the principal infectious diseases, against six, seven, and eight in the three preceding weeks; of these, 14 resulted from diarrhœa, two from whooping-cough, and one from measles, but not any from small-pox, scarlet fever, diphtheria, or "fever." These 17 deaths were equal to an annual rate of 2·3 per 1000, the death-rates last week from the principal infectious diseases being 1·3 in London and 1·5 in Edinburgh. The fatal cases of diarrhœa, which had been two, two, and six in the three preceding weeks, increased last week to 17. The 143 deaths in Dublin last week included 45 of children under one year of age and 28 of persons aged 60 years and upwards; the deaths of infants were considerably in excess of the number in the preceding week, while those of elderly persons showed a slight decline. Four inquest cases and six deaths from violence were registered; and 61, or more than two-fifths, of the deaths occurred in public institutions. The causes of nine, or more than 6 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: E. B. Pickthorn to the *Iris*; G. H. Foott to the *Venerable* and C. G. Matthew to the *Resolution*, both on recommissioning: C. Strickland to the *Amphitrite*, on recommissioning; and J. W. O. Underhill to the *Hindustan*, on recommissioning. Staff Surgeons: A. Maclean, to the *Sappho*; B. F. Parish to the *Ariadne*, on recommissioning: and F. H. A. Clayton to the *Victory*, lent to the *Brilliant*. Surgeons: A. A. Chancellor to the *Venerable*, on recommissioning; J. W. Myles to the *Flora*, on completing; and W. G. Edwards and W. E. Ormsby to the *Victory*.

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet-Surgeon Arthur Stanley Nance has been placed on the retired list, at his own request (dated July 8th, 1905).

ROYAL ARMY MEDICAL CORPS.

The undermentioned Majors to be Lieutenant-Colonels (dated May 30th, 1905):—Brevet Lieutenant-Colonel Samuel Hickson, Henry J. Fletcher, Edward Davis, Simpson Powell, Frederick W. C. Jones, James Meek, Arthur E. Morris, Robert E. Molesworth, Charles L. Josling, William T. Swan, Robert L. R. Macleod, Gofton G. Adams, James M. F. Shine, William B. Day, Charles T. Blackwell, Nicholas C. Ferguson, C.M.G., Samuel R. Wills, Michael L. Hearn, Richard H. Hall, Richard G. Hanley, Gerald Cree, Samuel C. Philson, John M. Nicolls, Frederick W. H. D. Harris, and James H. Curtis. The undermentioned Lieutenants are confirmed in that rank:—Robert G. Anderson, Charles P. Thomson, Robert J. B. Buchanan, George B. F. Churchill, George S. Wallace, William S. Nealor, Richard G. Meredith, Frederick E. Roberts, Arthur A. McNeight, Thomas H. Gibbon, James E. Hoar, Ernest B. Booth, Wilfred Parsons, Cecil D. M. Holbrooke, Ernest G. R. Lithgow, Pierce Power, James S. Pascoe, Charles W. O'Brien, George G. Tabuteau, Richard E. Humfrey, and William G. Maydon. Lieutenant-Colonel Frederick W. H. D. Harris retires on retired pay (dated July 19th, 1905).

INDIAN MEDICAL SERVICE.

A Royal Warrant has been issued, dated June 28th, amending the rules for promotion and precedence in the Indian Medical Service. The Royal Warrant dated Nov. 28th, 1903, is to be amended thus:—

The following is to be added to Article 1: "The Director-General of Our Indian Medical Service shall hold the substantive rank of surgeon-general, but may rank as lieutenant-general when approved by Our Secretary of State for India in Council."

The following is to be substituted for Articles 3 and 4:—"3. Except as otherwise herein provided, a captain shall be promoted to the rank of major on completing 12 years' full pay service, but this period may be reduced by six months in the case of an officer who produces satisfactory evidence of progress in any branch of knowledge which is likely to increase his efficiency. 4. Except as otherwise herein provided, a major shall be promoted to the rank of lieutenant-colonel on completing eight years' full pay service in the rank of major."

The following is to be added to Article 10: "An officer below the rank of colonel, who may be appointed as Our honorary physician or surgeon after retirement from the Service, shall be granted the honorary rank of colonel."

The following is to be inserted in Article 12 at the head of the table of ages at which officers shall be placed on the retired list: "Director-General, 62."

ROYAL ARMY MEDICAL CORPS (MILITIA).

Supernumerary Lieutenant (Honorary Lieutenant in the Army) W. H. G. H. Best to be Captain and to remain seconded (dated April 30th, 1905); Supernumerary Lieutenant (Honorary Lieutenant in the Army) H. Fox to be Captain and to remain seconded (dated May 28th, 1905).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain J. T. K. Thomson, having resigned his commission in the Volunteers, ceases to belong to the Army Medical Reserve of Officers (dated July 19th, 1905).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Ayrshire and Galloway: Surgeon-Lieutenant R. C. Robertson resigns his commission (dated July 15th, 1905). 2nd Lancashire: Surgeon-Captain H. R. Jones resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated July 15th, 1905).

Royal Engineers (Volunteers): 1st Middlesex: Surgeon-Lieutenant T. H. Chittenden to be Surgeon-Captain (dated June 26th, 1905).

Rifle: 2nd Volunteer Battalion the Loyal North Lancashire Regiment: Surgeon-Lieutenant H. J. Taylor to be Surgeon-Captain (dated July 15th, 1905).

DEATHS IN THE SERVICES.

The *Army List* for this month contains a notice of the death of an army medical officer who may be correctly termed a veteran of that department, Deputy Surgeon-General Andrew Semple, M.D., who died at Edinburgh on May 16th at the age of 76 years. This officer, who was a man of kindly disposition, had led since his retirement from the service a very quiet and unobtrusive life but, as will be noticed from the following record, he had seen a good deal of active service in his time. Deputy Surgeon-General A. Semple, Army Medical Department, joined the army in November, 1854, and retired in 1881. He served in the Crimean campaign, 1854–55, and was present at the siege and fall of Sebastopol and at the attacks on the Redan of June 7th and 18th (mentioned in despatches, medal with clasp). He also served in the

Practically all the old privies in the district have been replaced by water-closets but the district council has not insisted upon satisfactory closets being provided. Most of the latter are "hand flushed" and nearly all have been put in by unskilled workmen. The result has been the comparatively recent creation of a series of nuisances which in their degree are as objectionable as those which were caused by the privies. Dr. Fletcher points out the necessity of better administration in these and many other matters, such as housing, both for the general improvement in the sanitary state of the place and for diminution in the prevalence of enteric fever. The office of medical officer of health is miserably paid and Dr. Fletcher urges the advantages of a combination of districts in this part of Monmouthshire to secure the services of a health officer who is independent of private practice.

On an Outbreak of Enteric Fever at Denaby Main, in the Doncaster Rural District, by Dr. R. A. FARRAR.[2]—Denaby Main is a colliery settlement near Doncaster, occupied mainly by men employed at the Cadeby and Denaby Main Collieries. It consists of two portions, separated from each other by a wide open space—New Conisborough, with 936 houses and a population of 4830; and Denaby, with 698 houses and 3490 inhabitants. The houses are of good and comparatively modern construction; there is a constant and satisfactory public water-supply from deep wells at Cadeby Pit; an efficient system of sewers has been provided. In the autumn of 1904 enteric fever was prevalent in certain villages in the Doncaster rural district and attacked Denaby Main with considerable intensity. In New Conisborough 59 cases were notified between August 4th and Nov 6th—one other had been notified on July 16th. Of these 60 cases 43 were males and 17 were females; nine deaths occurred. In Denaby 25 cases occurred between August 16th and Oct. 7th. The interesting point of these outbreaks is their limited range. In New Conisborough nearly all the cases occurred in dwellings situated in two adjoining and parallel streets and in Denaby a similar limitation to a small portion of the settlement was noted. Dr. Farrar discusses the etiological questions involved in considerable detail. At first it appeared possible that the local water supply of the two streets affected in New Conisborough was at fault. These streets, or parts of them, receive their water from a branch main which, near its origin, was found to have been left exposed for several months before August, when a small portion of it was relaid and it was covered up. The result of Dr. Farrar's inquiries as to the opportunities of insuction of infectious matter into this branch main, in consequence of this interference or otherwise, was, however, negative. He was also able definitely to exclude milk as a source of infection. The probable origin of the New Conisborough outbreak, he concludes, was the presence in certain of the capacious privy middens of the affected streets of specifically infected matters derived from the earliest cases which occurred. There was evidence that flies were present in great abundance in the village during the autumn months and Dr. Farrar suggests that the effect of flies settling on these middens and afterwards carrying infection to articles of food may have been limited in its results to the houses near the middens in question. As he says, our knowledge of the range of flight of the house fly is very limited, but it is possible that when food is abundant this range is very short. Something of the kind has been shown to occur in the case of mosquitoes. Dr. Farrar finds that the second localised outbreak, in Denaby, would be explicable in a similar way. In the affected streets at Denaby the privy-midden nuisance was as great as in New Conisborough and the testimony of householders to the unusual prevalence of flies was still more emphatic.

Reports on the Sanitary Circumstances and Administration of Districts appointing more than one Medical Officer of Health.—It is the custom of certain rural district councils to divide the area under their control between two or more medical officers of health, usually paying small or nominal salaries in each case. The Local Government Board appears recently to have given special attention to the sanitary conditions and the administration of rural districts in which these arrangements are made and has lately issued reports on inquiries by Dr. L. W. Darra Mair in respect of the Wrexham district (No. 210), by Dr W. W. E. Fletcher for Halstead district (No. 211), and by Dr. R. A. Farrar for Durham district (No. 213). In each of these reports the system of multiple medical officers of health is considered to be unsatisfactory and recommendations are made either for the appointment of a single health officer, or preferably for combination of the rural district with its neighbours for the purpose of securing a medical officer of health who is not also in private practice and is able to give sufficient time to public health duties.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8196 births and 3860 deaths were registered during the week ending July 15th. The annual rate of mortality in these towns, which had been 12·9, 12·7, and 11·6 per 1000 in the three preceding weeks, rose again to 12·9 per 1000 last week. In London the death-rate was 11·7 per 1000, while it averaged 13·4 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 3·7 in Hornsey, 4·5 in Kings Norton, 5·0 in Burton-on-Trent, 7·2 in Walthamstow, 7·4 in Reading, 7·6 in Handsworth (Staffs.), 7·7 in Southampton, and 8·0 in Great Yarmouth; the highest rates were 18·2 in Barrow-in-Furness, 18·4 in Merthyr Tydfil, 18·5 in Salford, 18·6 in Stockport, 19·1 in Bootle, 20·5 in Burnley and in Sunderland, and 23·1 in West Bromwich. The 3860 deaths in these towns last week included 486 which were referred to the principal infectious diseases, against 348, 371, and 388 in the three preceding weeks; of these 486 deaths, 241 resulted from diarrhœa, 99 from measles, 70 from whooping-cough, 34 from scarlet fever, 26 from diphtheria, and 16 from "fever" (principally enteric), but not any from small-pox. In Brighton, Reading, Coventry, St. Helens, Cardiff, and in nine other smaller towns no death from any of the principal infectious diseases was registered; among the other towns they caused the highest death-rates in Wolverhampton, West Bromwich, Aston Manor, Stockport, Birkenhead, Bootle, Barrow-in-Furness, Middlesbrough, and Rhondda. The greatest proportional mortality from measles occurred in Bristol, West Bromwich, Barrow-in-Furness, and Sunderland; from scarlet fever in Devonport and in Blackburn; from diphtheria in Barrow-in-Furness; from whooping-cough in Hornsey, Walthamstow, Aston Manor, and West Hartlepool; from "fever" in Devonport; and from diarrhœa in Norwich, Aston Manor, Stockport, Birkenhead, Liverpool, Bootle, Middlesbrough, and Rhondda. No fatal case of small-pox was registered either in London or in any of the large provincial towns. The number of small-pox cases remaining under treatment in the Metropolitan Asylums Hospitals, which had been six, four, and five at the end of the three preceding weeks, had declined again to four at the end of last week; two new cases were admitted during the week, against one, one, and two in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2520, against 2427, 2473, and 2499 at the end of the three preceding weeks; 356 new cases were admitted during the week, against 325, 334, and 354 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 144, 140, and 90 in the three preceding weeks, rose again last week to 104, but were 51 below the number in the corresponding period of last year. The causes of 50, or 1·3 per cent., of the deaths in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Bradford, Leeds, Hull, Newcastle-on-Tyne, and in 47 other smaller towns; while the largest proportions of uncertified deaths were registered in Brighton, Norwich, Birmingham, Leicester, Liverpool, St. Helens, and Blackburn.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 15·1, 16·5, and 14·7 per 1000 in the three preceding weeks, further fell to 14·3 per 1000 during the week ending July 15th, but was 1·4 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·2 in Leith and 11·5 in Aberdeen to 22·9 in Perth and 29·7 in Greenock. The 481 deaths in these towns included 25 which were referred to whooping-cough, 19 to measles, seven to diarrhœa, three to does, exist without any of these properties. That the particular gametoid tissue associated with cancer possesses them no one, we think, is likely to dispute. Thirdly, it is stated that "they particularise their meaning by drawing an analogy with what they have described in apospory where the new prothallus (reduced tissue) is said to eat its way backwards along the fern frond from which it has arisen." With regard to the first part of this statement the General Superintendent is obviously under some misconception. We have never made any original contributions to apospory in *this relation. The phenomenon* has been generally described by Professor Bower and others. It is well known to fern fanciers and Dr. E. F. Bashford is apparently not acquainted with the fact that prothallial tissue is sometimes formed without any reduction taking place. With regard to the latter part, we have pointed out that in different parts of certain tumours cells of somatic, heterotype, and homotype characters are markedly in evidence, which is something very different in form and in substance from the above assertion. Besides which, all these facts were subsequently confirmed by the observations published by the Superintendent of Research himself. Fourthly, it is stated that:—

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[2] Ibid., No. 216, price 9d.

> An integral part of their explanation of cancer is based upon their view that the reproductive tissues proper arise merely by a transformation of somatic tissue. A similar change occurring at abnormal sites and times gives rise to the modified reproductive 'gametoid tissue, which is cancer.

To begin with, the discovery that reproductive tissue arises by a transformation of somatic cells is in no way due to us. In the young soma of various animals the reproductive tissue becomes differentiated from it at various periods. With regard to the latter part of the above statement, we never supposed, since it does not appear to be the case, that similar changes in abnormal sites necessarily give rise to cancer, for example, Bidder's organ in the male toad. It will thus have become obvious that instead of the epitome of the gametoid theory contained in the report under consideration presenting an accurate statement of our views, of the four principal statements into which it is divisible it may be said: The first is inaccurate. The second is inaccurate. The *third* and fourth are equally inaccurate and that together they constitute nothing more nor less than a complete misrepresentation of the position we have taken up.

These somewhat necessary corrections having been accomplished we would gladly have left the whole report for some more edifying occupation, but, as will be found in its concluding pages, the General Superintendent posts up a number of alleged characteristics which *he definitely states* collectively embody the fundamental characters of cancer and to which all hypotheses and theories whatsoever must necessarily conform. Without more than stopping to suggest the fact that where observations do not agree with the alleged characteristics of anything it is generally so much the worse for the alleged characteristics, we append these statements as they stand with the author's comments upon his own misrepresentation of our views on the right-hand side and lettered A to H for reference.

A.	Circumscribed nature of primary area or areas.	This was not clearly realised by the authors. The hypothesis implies a progressive transformation of somatic into modified reproductive tissue.
B.	Relative independence.	Tissue, with half the somatic number of chromosomes has this property in plants, and independence is postulated *for* the similar tissue alleged to constitute the essential part of malignant new growths.
C.	Power of continuous growth.	Postulated for the "gametoid tissue" of cancer.
D.	Infiltrative and destructive character.	The authors recognise an analogy for the infiltrative and destructive character of cancer in the similar behaviour of tissue with half the normal number of chromosomes in plants, and at the same time admit that the infiltrating margin of malignant new growths in man consists of cells with the normal number of chromosomes.
E.	Metastasis formation.	It is said to be due to the continuous introduction of cells which have undergone the change into "gametoid tissue."
F.	Age incidence.	This is not explained by the hypothesis.
G.	Single differentiation.	This has not been realised by the authors. The cells are stated to *assume the appearance of indifferent germ tissue.*
H.	Transmission with all its limitations.	Its limitations and nature are not taken into account. Actual contact. Continuous introduction of cells. Continuous application of suitable stimulus under very peculiar conditions.

(A) This was, and is, one of the characters of cancer with which we have been primarily concerned. After much consideration we are not clear what hypothesis is meant, but no suggestion of ours implies anything of this sort.

(B) Tissue with half the somatic number of chromosomes has sometimes, but not always, this property in plants. Reduced tissue is not regarded by us as constituting the essential part of malignant new growths.

(C) Power of continuous growth is not a peculiar property of cancer. Poplar and pear tree grafts exhibit it admirably. Consequently, in accordance with the dictates of prudence and discretion, no such postulate was made by us. In this connexion one may go further. The unlimited powers of growth, recognised by everyone in cancer, are paraded through the long length of the report as one of the chief attributes of the disease and the discernment of it as one of the chief results of the work in the laboratory of which Dr. Bashford is in charge. To us this so-called discovery seems nothing better than a needless recognition of what has been known to biologists for years.

(D) This paragraph might stand, but it would be better were the word "state" substituted for the word "admit."

(E) No statement that we have made involves "continuous introduction of cells."

(F) One was under the impression that the researches of Maupas, Hertwig, and others on the senility occurring under certain conditions in protozoon swarms brought this matter into conformity with the interpretation that we have put upon our observations.

(G) This matter was fully considered and whether as in some cases the cells do or do not assume the characters of young tissues is from our point of view of no importance.

(H) Its limitations are interesting in themselves, but in no way affect our position.

It might seem that since the epitome of the gametoid theory was previously shown to contain nothing but an inefficient travesty of the views it professes to portray comment upon the involved statements in the above table was unnecessary. A little consideration will, however, show that this is not the case. In the table hypotheses attributed to us are criticised in relation to a number of *formulæ*, some of which, like the continuous growth statement, have no significance and all of which are open to the most obvious objections. Consequently it is most necessary to make clear the manner in which assumptions that are not ours are made to appear as if governed by criteria we should instantly repudiate. In other words, the Superintendent criticises as ours statements we never made, and then tries them by tests which, had we made such statements, we should certainly not admit as having any value. Moreover, it appears that Dr. Bashford cannot have apprehended the logical termination of his own assertions. It should be pointed out that, provided his own observations upon the alleged fusion of the nuclei of cancer cells be valid, his acceptance of the gametoid theory is a logical necessity. Such fusions, preceded by the heterotype and homotype mitoses we originally observed, observations which he himself has subsequently figured and confirmed, are without meaning unless the original tissues in which reduction has occurred are assumed to have acquired the characters of reproductive elements, to be able to fertilise each other—that is, to have become gametoid in process.

Either Dr. Bashford and Dr. J. A. Murray are wrong in their observations upon nuclear fusion, or they have themselves produced the trump card in the gametoid theory they

Abyssinian campaign, 1867–68 (medal); and in the Zulu campaign, 1879, when he was present at the battle of Ulundi (mentioned in despatches, medal with clasp). Deputy Surgeon-General Semple was unmarried and, owing to his modest and retiring habits, was a man of far more learning and culture than might have been supposed by those who did not know him well.

THE QUEEN AND THE RED CROSS.

It having been recently decided, at the suggestion and under the auspices of their Majesties the King and Queen, that it was most desirable to form a new Red Cross Society, in view of coördinating all existing societies which are concerned with the succour of the sick and wounded in war, a council under the presidency of the Queen has been appointed for that purpose. On the occasion of the first meeting of this council at Buckingham Palace on July 17th, at which the Queen personally presided, Her Majesty made a very graceful speech setting forth the nature and the objects of the new scheme. The Queen appealed to all the women of the empire to assist in carrying it out on the ground of its being essentially a woman's mission and work and the only practical way in which they could lend aid and succour to the army and navy in time of war. The purpose of the new movement is to incorporate the Red Cross Society, established some 35 years ago, with the National Aid Society. There is no need at the present time to set forth the vast benefits which have accrued from such societies. Their aims naturally appeal to our instincts of humanity. But to get the best obtainable results from them it is essential that there should be careful preparation and organised unified effort beforehand. The council appointed by their Majesties, under the presidency of the Queen, has Lord Rothschild as chairman and Lord Knutsford, Lord Esher, Lord Cheylesmore, and Mr. A. K. Loyd, M.P., as vice-chairmen.

THE QUEEN'S VISIT TO THE ARMY HOSPITAL, MILLBANK.

The Queen paid a surprise visit to the military hospital at Millbank on the afternoon of July 18th. Her Majesty was accompanied by their Royal Highnesses the Princess Victoria, the Duchess of Sparta, and Princess Frederick Charles of Hesse. The Hon. Sidney Greville was in attendance.

MEDICAL HISTORY SHEETS IN USE IN THE ROYAL NAVY.

In view of the importance of the medical history sheet for the purpose of diagnosis and of deciding claims for pension or gratuity in the case of invaliding the Admiralty has approved of the following rules being observed for the better security of these documents: "1. The medical history sheet should always accompany the parchment certificate until the man has been discharged from the service, when the history sheet should be sent to the Medical Department of the Admiralty. If a history sheet is missing the fact is to be at once made known to the ship or depôt whence the history should have been received, which will be held responsible for its being replaced. 2. All ships, depôts, and hospitals not already having them will in due course be supplied with locked cupboards, with pigeon-holes alphabetically arranged, for the custody of the medical history sheets. 3. Medical history sheets are never to be allowed in the possession of any petty or non-commissioned officer, man, or boy. 4. At inspections the senior officer is to insert on the paper of inspection a note as to whether the rules respecting medical history sheets are properly observed."

THE WAR IN THE FAR EAST.

All that need be said regarding the news, which is mainly of a military and non-medical nature, from the theatre of war is that the island of Sakhalin is once more in Japanese hands, that General Linievitch's forces in Manchuria are stated to have been reinforced strongly, that Marshal Oyama's forces still remain relatively inactive, and that their Russian adversary is said to have relinquished the idea of making a big offensive movement in favour of one of a defensive character and has accordingly been concentrating his efforts in strengthening the works and position in this respect. It is feared that the railway from Harbin to Vladivostok will be cut within a short time by the Japanese. The heat is at present described as being great and the rainy season, so inimical to any active military operations, has set in. So far as we have any statements about the sanitary and health conditions of the enormous armies in the field the soldiers comprising General Linievitch's forces are said to have been suffering of late a good deal in health but the accounts are conflicting and untrustworthy. There would seem to be a widely prevalent and possibly growing feeling of disaffection and unrest in Russia and Russian Poland, and it is not to be wondered at that under existing conditions fears of coming famine and epidemic sickness have been expressed. Meanwhile arrangements are going on for the projected peace conference with varying statements from time to time, hopefully confident or otherwise, as to their progress.

Correspondence.

"Audi alteram partem."

SCIENTIFIC REPORT OF THE IMPERIAL CANCER RESEARCH FUND.

To the Editors of THE LANCET.

SIRS,—It is in no way our present purpose to comment upon the long statistical sections of the report recently issued by the executive committee of the Imperial Cancer Research Fund, for these, though of no special import in the present, will undoubtedly be useful at some future time. In the concluding paragraphs, on the other hand, we find what professes to be an epitome of the work of various authors, and here the matter is of a very different kind. The General Superintendent of Research produces a number of short statements which are intended to convey, for reference and for study, the conceptions of individual investigators, and these are prefaced by the following remarks:—"It will serve to delimit the directions in which the explanation of the growth of cancer must be sought if we review the various theories and hypotheses which still find currency as explanations of the nature and origin of cancer, and incidentally of its powers of growth." That such an undertaking is desirable no one is likely to dispute, but in order that it may have any value it is necessary that it should be not only an accessible, but also an accurate, statement of the works with which it deals. In view of the importance of the last condition it consequently appears necessary to draw the attention of your readers to the manner in which it is fulfilled in what professes to be a statement of the conceptions of Professor J. B. Farmer and ourselves regarding the "gametoid" nature of malignant growths. In thus limiting the discussion it is not in any way implied that we agree with the preceding matter of the report. We desire simply to draw attention to the character of a single section. After quoting a portion of a preliminary communication made in 1903 in the Proceedings of the Royal Society and without any reference to subsequent papers by ourselves, the General Superintendent proceeds as follows:—

> The views Prof. Farmer and his colleagues have elaborated amount to stating that malignant new growths arise by the transformation of the differentiated body tissues into reproductive tissue of modified character, which they specify by the term "gametoid," to distinguish it from the true gametogenic or reproductive tissue. They ascribe powers of proliferation, independence, and malignancy to this "gametoid tissue," whic [illegible] tissue, i.e., with half the somatic num [illegible] the surrounding tissues. [illegible] an analogy with what they [illegible] prothallus (reduced tissue) is said to eat its way backwards along the fern frond from which it h [illegible] detail in a malignant new growth three zo [illegible] to the spermatogonia, spermatocytes, and [illegible]

Firstly, then, and this is a very minor point, we are stated to ascribe the origin of malignant new growths to the transformation of differentiated body tissues into reproductive tissue of *modified* character. That is to say, we regard cancerous tissue as transformed reproductive tissue, for to be "modified" is to be altered or transformed. We may say that we never entertained any such idea. What we did say was that on the assumption of malignancy, tissues presented some of the characteristic features of reproductive cells—i.e., heterotypical and other mitoses with reduced numbers of chromosomes. In itself the use of the term gametoid implies that we regard these cells of malignant tissue as like, but not identical with, reproductive cells. Secondly, we are said to ascribe powers of proliferation, independency, and malignancy to gametoid tissue. We make no such general postulate. For anything that our observations indicate, gametoid tissue might, and possibly

THE USE OF PHENYLHYDRAZIN IN THE EXAMINATION OF URINE.

To the Editors of THE LANCET.

SIRS,—Dr. P. J. Cammidge in his recent paper[1] discourages the use of the water bath in using the phenylhydrazin test. This is an attitude not to be lightly assumed by one in the position occupied by Dr. Cammidge, for the water bath method has been so strongly insisted on by von Jaksch, Hirschl, and other authorities as a means of preventing the osazone compound of glycuronic acid from being precipitated in a crystalline form—a compound so likely to be mistaken for dextrosazone. According to Dr Cammidge this adventitious precipitation occurred in 4 per cent. of his cases when the water bath was used and only six times with the free flame. This experience is quite contrary to mine, for although I have not kept statistics on this point I find that I practically never meet with it since using the water bath, whereas when I used the free flame I used to meet with it occasionally. That the water bath method has advantages over the rapid method he admits when dealing with the microscopic examination of the crystals, for in referring to lactosazone he says: "In preparations made by the rapid method the individual crystals are not usually as distinct as those formed after prolonged heating in the water bath," and with regard to maltosazone he also says "preparations made by heating in the free flame are less characteristic." Both of these statements I can vouch for; indeed, the same is true of all the sugars. Surely the method whereby the best crystals are obtained is the one to adopt, for the identification of a sugar by means of the microscopic appearance of its osazone is practically relied on by clinicians. This, I need not add, does not apply to lævulosazone, for lævulose is the isomer of dextrose and their osazones are indistinguishable.

Dr. Cammidge also says that "in the water bath even an hour is not sufficient to obtain a satisfactory yield with maltose, lactose, and pentose, an hour and a half or two hours being required to demonstrate their presence satisfactorily, especially when the solution is weak." Here I quite disagree with him, for I find that half an hour in the water bath gives a good crop of crystals on cooling with aqueous solutions of these bodies of only 0·3 per cent. strength. Dr. Cammidge contradicts himself when dealing with the rate of osazone formation, for he says that "the osazones of maltose, lactose, and the pentoses only form after much more prolonged heating," whilst in the next sentence he says: "In my experience the rapid method of performing the phenylhydrazin test gives a reaction with all sugar." In dealing with the melting points Dr. Cammidge omits to give that of the glycuronic acid compound and the comparatively low melting point of 115° C. is one of its most distinctive features. I am, Sirs, yours faithfully,

L. C. S. BROUGHTON.

Langley Green, Birmingham, July 11th, 1905.

MOTOR SIGNALLING.

To the Editors of THE LANCET.

SIRS,—Will you give your valuable help towards getting an extended mode of signalling between drivers of motors and riders and drivers of horses? At present, in the day-time, there is only one signal—the uplifted hand. At night, the most important and dangerous time to the medical profession, there is none. When riding or driving a nervous horse in the day-time one does not want to bring every motor-car to a dead stop. It is often easier to drive such a horse past a slowly moving car than past one which is stationary and which has its engine going. I suppose the horse, like some sanitarians, thinks a moving smell less objectionable than a fixed one. In the day-time when meeting a driver I know I extend my arm at right angles to the trunk if I want him to slow down. At night the best way I have found for attracting a driver's notice is by covering the right lamp with the hand, using it like a "flash light" at sea. When meeting a motor in the dark this could be made to signify: right lamp covered once, go slow; twice, stop. In the case of a car coming up behind, the red light at the back could be used in the same way. It should now be made compulsory for all gig lamps to show a good red light behind. By a very simple method the driving lamp could be made to show any coloured light "fore and aft" and could be easily worked by the driver. There is no reason why good feeling should not exist between all users of the King's highway. Motors mean to stay, so we must make the best of them. If we can create a healthy public opinion the road hog (the present curse) will die of inanition.

I am, Sirs, yours faithfully,

Thrapston, July 17th, 1905. T. W. BUCKLEY, M.D. Durh.

THE PREVENTIVE TREATMENT OF CONSUMPTION IN AUSTRALIA.

To the Editors of THE LANCET.

SIRS,—I ask for a small part of your space to correct an error in the letter of "your own correspondent" in Australia published in THE LANCET of April 22nd. In a paragraph headed "Prevention and Treatment of Consumption" he writes, "Dr. Philip Sydney Jones recently gave an address ...... in which he advocated the isolation of every consumptive." I did not recommend so sweeping a measure as the isolation of *all* consumptives. What I did say was that the Government of the State should make provision for the isolation of advanced cases occurring among the poorer classes of the people and thus remove from our midst dangerous foci of infection. Your correspondent probably derived his information from one of our local newspapers which fell into the same error.

I am, Sirs, yours faithfully,

Sydney, May 30th, 1905. P. SYDNEY JONES, M.D. Lond.

FREEMAN *v.* APPERLY.

To the Editors of THE LANCET.

SIRS,—I am anxious through the medium of THE LANCET to thank most heartily those members of the London and Counties Medical Protection Society who have so kindly contributed to the fund raised to help me with the very heavy expenses entailed by the recent action for damages brought against me in the Gloucester county court. Though not a member of the above society until after the operation which resulted in this action I received most valuable help from its officers, both in advice and in the matter of witnesses, and now the society, though not liable in any way, has raised a fund among its members as a help towards my expenses. I do not wish what I intend as a letter of simple but warmest thanks to the generous members and officers of the society who have done so much to help me should resolve itself into a eulogy of the society itself, but I feel that it is only right that I should publicly acknowledge the kindness and generosity of its committee and officers, especially mentioning the names of Mr. A. G. R. Foulerton and Mr. C. W. Glassington, who have given so much time and have taken so much trouble on my behalf.

I am, Sirs, yours faithfully,

Mandeville-place, W., July 12th, 1905. E. APPERLY.

THE INFLUENCE OF FRUIT ON THE PRECIPITATION OF THE URIC ACID OF THE URINE.

To the Editors of THE LANCET.

SIRS,—I shall be much obliged if you will do me the favour of allowing me to state in your next issue that, through an oversight on my part, the word *is* appears instead of *may be* in the passage "the quantity thrown down *is* independent of this" (page 142) in my article with this title. I am, Sirs, yours faithfully,

Oxford, July 17th, 1905. WILLIAM J. SMITH JEROME.

MOUNT VERNON SANATORIUM AT NORTHWOOD.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of July 8th you say with reference to the report of Dr. A. W. J. MacFadden, medical officer of health of Edmonton, that "it seems almost a pity that some of the beds at the Mount Vernon Sanatorium at Northwood cannot be utilised by the sanitary authorities in Middlesex." As there it is, it does seem a great pity for some reasons that the whole of the Northwood institution is not set apart for are attempting to repudiate. In these circumstances it is not without a sensation of amusement that we offer them our opinion upon this matter, since it may deliver them from the horns of a dilemma between which they are at present absolutely pent up. We have never encountered anything in the least suggesting the fusions they have described and the figures and preparations of this process they have hitherto exhibited would convince no one who, having dealt with similar cytological matters, is familiar with the immense difficulty of observation and the abundant sources of misconception that are involved. On the other hand, the extraordinary behaviour of certain leucocytes in the earliest examples of malignant growths appears to supply this missing term in the gametoid theory. They are, however, wholly dissimilar in nature and position to the processes referred to above.

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[1] THE LANCET, July 1st, 1905, p. 14.

Here, again, we would gladly have broken off and left others to form their own opinion of the final passages of this singular report, but since in these general biology is involved it seems necessary to lodge some protest against statements the true perspective of which may not be apparent to those who have assailed the cancer problem from its medical approach. It is here, moreover, that a curious unintelligibility often characteristic of the verbiage of the report breaks into full bloom. For example, on page 95 we read :—

Circumscribed nature of primary areas or area.	Proved to be an adequate explanation, by the reproduction of all the characters of sporadic growths by transplanted tumours.

On the left we have a statement posted as embodying an attribute of cancer. In the comment on the right this attribute is said to be an explanation of itself. One has encountered the apostle of the obvious but without exaggeration the present statement is equivalent to saying :—

Copper kettles have the characters of kettles made of copper.	Proved to be an adequate explanation by the production of copper kettles out of copper.

Again, on the same page—

Power of continuous growth.	Experimental propagation is a manifestation of this power of the parenchyma. Its unlimited, nature has been revealed by propagation, and indicates that an explanation of the amount of growth which suffices to kill the individual primarily affected, may be inadequate to explain the power of cell division which resides in malignant tissue as such.

We freely admit our limitations and state frankly that much study has failed to enable us to make out any kind of meaning in what is written in the right-hand column. One can only protest again that continuous growth is *not* a special character of cancer cells.

Again, on the same page :—

Infiltrative and destructive character.	Shown to be separable from mere growth of which it is probably a consequence.

To most people the assertion that thing B is a consequence of thing A implies that they are bound together, while mere growth, as in the case of a fibroma, does not of itself endow cells with the properties of infiltration and destructiveness.

It would be quite unnecessary, and certainly tedious, to go further, and there remains only the necessity to draw attention to one final passage of the report in which the author says :—

> The fresh light thus thrown on all the features of cancer has enabled us to prove what has long been surmised. The attributes of cancer are the mere consequences of its growth, which is its only constant property.

There is a triumphant and prophetic ring about the former of these statements, yet we have looked in vain through the pages of the report for the promised light. All that one finds is, "The attributes of cancer are the mere consequences of its growth"! We readily credit Dr. Bashford with the possibility that this sentence as it stands does not express his actual meaning. If it does we can only remark that it appears to be a wholly erroneous assertion. Surely the reducing divisions, the existence of "Plimmer's bodies" corresponding to the archoplasmic vesicles of sperm cells, and so on, are all attributes of cancer, but in what possible way can these be regarded as "mere consequences of its growth"? The statement is unintelligible.

In conclusion, let us, however, say that we regret, as much as any of your readers can do, the necessity for these criticisms, and that though sorely tempted we have endeavoured to keep what has been said within the limits of propriety. Some explanation is, however unavoidable. The reports of the Imperial Cancer Research Fund are widely read and nothing sticks like the mud of misconception when it is allowed to creep unchallenged into the publications of what ought to be an authoritative source.

We are, Sirs, yours faithfully,
J. E. S. MOORE,
Director of the Cancer Research, University of Liverpool.
C. E. WALKER.
July 10th, 1905.

THE PRINCIPLES OF HEREDITY.

To the Editors of THE LANCET.

SIRS,—In his recent Romanes lecture, entitled "Nature and Man," Professor Ray Lankester (page 28 and note 7) points out that in extra-human nature disease is a minor phenomenon; that individuals alone survive who can tolerate disease without injury, thus establishing immune races; that diseases are unknown as constant and normal phenomena except in man and domesticated races; that when diseases do become prevalent in nature they have been introduced by man or his domesticated herds. Thus the trypanosome lives in the blood of wild game and rats without producing mischief: the hosts are tolerant of the parasite. It is only when domesticated races are introduced, say into Africa, that disease becomes mischievous, so much so as in some regions to exterminate the big game. The disease does not establish itself as a scourge against which the diseased organism incessantly contends. It either obliterates its victims or settles with it into relations of reciprocal toleration.

In dealing with malaria Mr. D. M. Eder[1] says that it was formerly prevalent in England and that it is not now so presumably because, if Dr. Archdall Reid's reasoning be correct, the food-supply of the parasite has been exhausted and thus all Englishmen should be immune. That they are not immune is proved by Englishmen still suffering from malaria in our colonies. Without questioning what extent of England formerly suffered from malaria, nor whether the banishment of the disease is due to drainage, one is led to question whether Mr. Eder has really tried to understand the subject. Dr. Reid has pointed out that there are two diseases (tuberculosis and leprosy) immunity against which is inborn. For the other zymotics evolution has proceeded along lines of "an inborn capacity of acquiring capabilities for making resistance." This does not imply that those who are capable of acquiring immunity are insusceptible to infection. What it does imply is that those who have this power, other things being equal, are more likely to survive and continue the race. Nay, more, Dr. Reid has explicitly stated that though immunity against malaria may be acquired it is swiftly lapsed and thus re-infection is perhaps the normal condition. That immunity is not a question of food-supply is proven by microbes flourishing in the serum withdrawn from the body of an immune animal. As presumably each individual in West Africa suffers from malaria Mr. Eder's argument as to the food-supply breaks down. Again, surely Mr. Eder forgets or ignores the law enunciated by Dr. Reid that sexual reproduction is for the production of regression and if this is so how can a race become so immune that any disease by which it was formerly afflicted dies out?

Mr. Eder, in support of his contention that the Spaniards of unmixed descent are heavy drinkers—that is, drink for the mental effect—quotes the British Vice-Consul as saying "that intemperance is general among the working classes" of Oruro, Bolivia.[2] Yes, but Mr. Eder forgot to quote the preceding sentence that "the *half-breed* is the labourer of the country." With regard to the Jews Mr. Eder's experience seems to be unique. It is certainly the opposite of my own many years ago in Old Ford, and it is the opposite of those who practise largely in the Jewish district in Liverpool. If Mr. Eder has met so many Jewish alcoholics surely others must have met them also. Against a mass of evidence that can be adduced we have Mr. Eder's assertion. Which are we to believe?—I am, Sirs, yours faithfully,

C. R. NIVEN.
Liverpool, July 9th, 1905.

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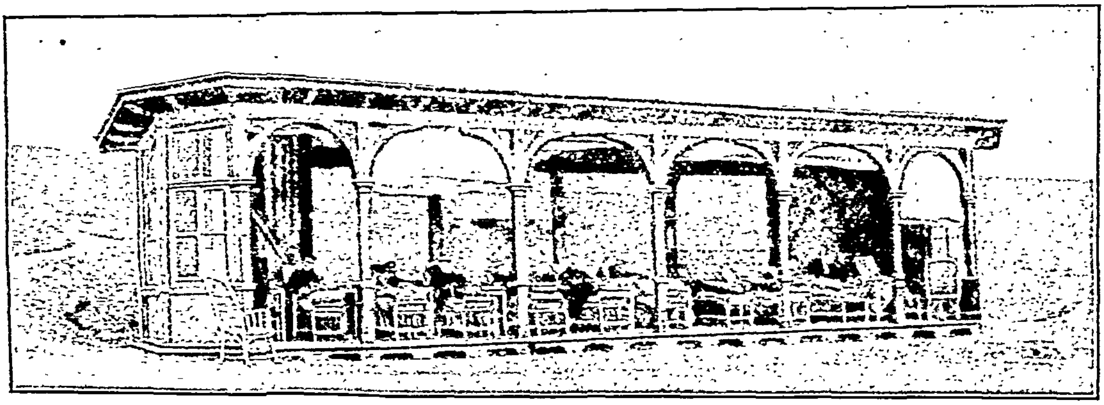
[1] THE LANCET, June 17th, 1905, p. 1676.
[2] THE LANCET, June

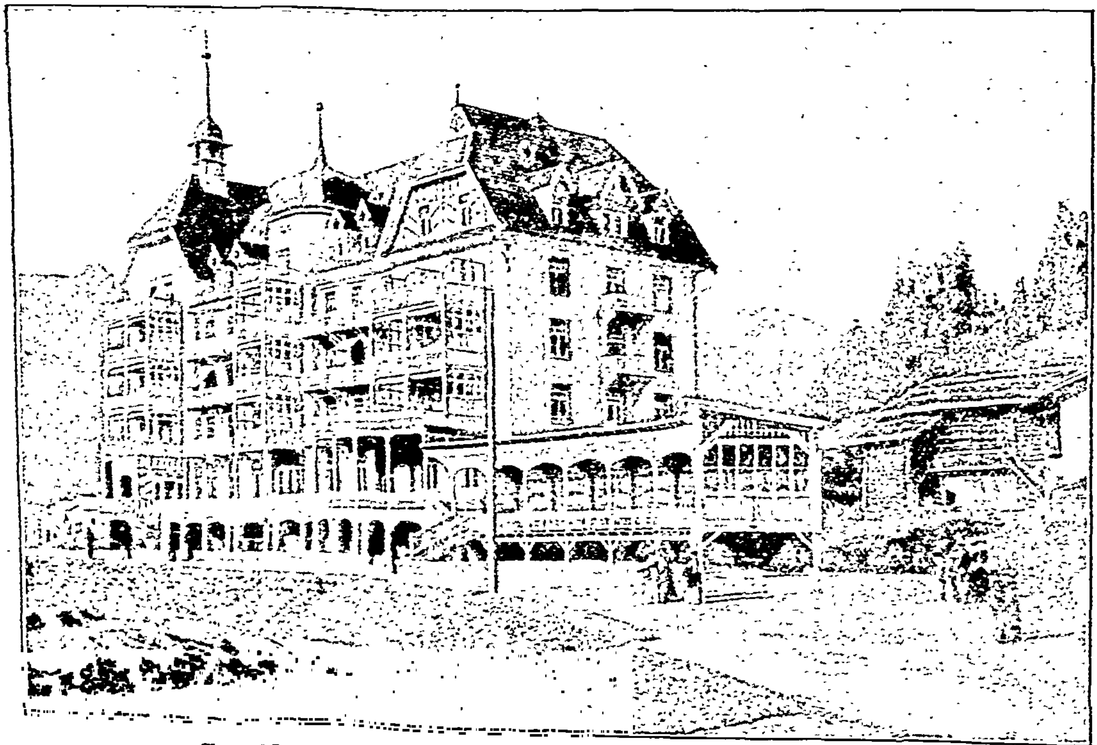
be opened or shut according to the direction of the wind. Thus while the amount of exposure to wind can be modified and the scorching rays of sunshine checked by canvas blinds, still the open air is enjoyed by the patients as they lie on good horsehair mattresses spread over their couches. Altogether in this sanatorium there is room for 90 couches in the open air and above them there is an electric light and by their side an electric bell. The estate on which the sanatorium stands consists of some 28 acres d there paths are carefully measured and have a fall rying from 4 to 10 per cent. Every 300 feet there are mbered benches for rest and the exercise prescribed can ns be measured out very accurately. The patient is told e number of the bench to which he must walk. On turning from this exercise he enters the cloak room where e hangs his overcoat or wraps in a partition made of well-led, pine-wood. Here the clothes of the different patients are kept apart; there is no contact. Under the clothes in the partition there is a zinc tray for damp boots or goloshes. The floors of the sanatorium are covered with linoleum resting on felt which deadens the sound. The walls are enamelled and only wet or moist dusting is allowed. The principle is that of the exaggerated washing of occupied rooms and of immediate disinfection when the patient leaves. What, however, impressed me most favourably was the kitchen. It may be said that as much—indeed, more—care has been bestowed on the kitchen than on the drawing room. In any case it is on the same floor, is quite as lofty, has, if anything, more windows, and is certainly quite as clean and bright in appearance. Two sides are all window, there is a window in the third wall, while the fourth wall separates the kitchen from the dining room.

FIG. 1.



Dr. Turban's Sanatorium at Davos-Platz: a shelter placed some distance in front of the main building.

FIG. 2.



Clavadel Sanatorium, Davos-Platz, showing broad balconies for the treatment of patients.

One and a half miles to the south of Davos-Platz, where the valley of the Sertig meets the Davos valley and at an altithe county in which it is situated. Middlesex could support it if it were placed under the management of its supporters but such control is a *sine quâ non*, as without it the support could not be obtained, nor if the money were available could the desired end be carried out. The worst of it is that Northwood is not an "open-air" sanatorium properly so-called; it is far too sumptuous to be suitable for working-class patients and it must be far more expensive to carry on than a more suitable building.

I am, Sirs, yours faithfully,
GERARD CLARK,
Honorary Secretary, Middlesex Open-air Sanatorium.
Ealing, W., July 12th, 1905.

PREGNANCY LATE IN LIFE.

To the Editors of THE LANCET.

SIRS,—Your article last week has suggested this communication, bearing mainly on the legal side of this matter.

Contrary to many foreign codes the common law of England allows no presumption that a woman (be she a spinster, a wife, or a widow) has passed an age when she can procreate and bear children. To the physiologist this is a matter of fact, dependent in most cases upon the menstrual climacteric, a phenomenon which is never "judicially noted as the invariable course of nature." For the purposes of forensic construction a woman, like a man, must be treated as capable of procreating children all her life, for the courts boast in this matter that they will never deprive a single living person of a possible interest or benefit. Lord Coke in 1624 stated a case relative to certain dowers which accrued if issue was born "albeit the wife be 100 years old ...... or the husband at his death was but four or seven years old, so as she had no possibility to have issue by him; yet seeing the law saith, that if the wife be above the age of nine years at the death of her husband she shall be endowed, and that women in ancient times have had children at that age whereunto no woman doth now attain, the law cannot judge that impossible which by nature was possible. And in my time a woman above threescore years old hath had a child—*ideo non definitur in jure.*" Lord Coke would have us refer apparently to Genesis xviii. 11, and I. Timothy v. 9. In legal practice the question arises to-day in several classes of cases. It may be requested that money shall be paid out of court to those contingently entitled to it in the event of a certain woman not having children, she being well past the alleged age of child-bearing; as a matter of practical convenience the court has gradually recognised the high degree of improbability of issue and early last century, in the case of a woman aged 69 years, a trust fund was disbursed, "the parties entering into sufficient security by recognisances." Gradually the age limit has been reduced until it is now about 54 years and lately security has been dispensed with. The plea, however, is never allowed to infringe the inviolable "rule against perpetuities." A similar question arose in the old ecclesiastical courts where a husband pleaded sterility in his newly married but aged wife; he was not allowed a decree of nullity of marriage, as it was affirmed that he had presumably taken her *tanquam soror*. Actuaries meet the problem in insurances against child-birth and policies taken out by women under 50 years of age. Cases of pseudocyesis are pertinent, as with Joanna Southcote in 1814, who was 64 years old when she claimed to be supernaturally pregnant. Disputes as to legitimacy and supposititious children occasionally occur in connexion with women past mid-age. To the medical mind it appears *primâ facie* that a medical certificate could, as a rule, summarily settle the facts. But the legal mind considers the admission of such a practice as well indecent as capable of too wide extension. In 1787 Lord Kenyon, then Master of the Rolls, when asked to declare that a septuagenarian couple were past the age for procreation, declared: "If this can be done in one case it may in another, and it is a very dangerous experiment, and introductive of the greatest inconvenience to give a latitude to such sort of conjecture." He was evidently suggesting that should medical evidence be admissible the principle could be applied to much younger women, sterilised perhaps by surgical means, and *pro tanto* to men. In matters marital the law will not often inquire beyond *habilitas ad matrimonium*, the practical test of which is mutual ability to consummate marriage.

I am, Sirs, yours faithfully,
LEGALIS.
July 18th, 1905.

DAVOS-PLATZ.

PRIVATE SANATORIUMS; PUBLIC AND POPULAR SANATORIUMS.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

II.[1]

IN dealing with the sanatoriums at Davos it is not my purpose to criticise at any length those numerous and luxurious establishments which cater for paying patients. Doubtless they are open to not a few abuses but in any case if, in the desire not to displease good customers, patients are allowed more freedom than is good for their health, the law, as already described, takes care that they shall not injure or imperil others than themselves. There is at Davos-Platz and Davos-Dorf a great variety of hotels and sanatoriums. There are, as already mentioned, hotels for the exclusive use of healthy travellers and tourists, and these may be distinguished by the fact that they have no verandahs or broad balconies for patients to lie out in the open air and sunshine. Indeed, what is called at Davos "the cure" seems to consist, in the main, of what on the Riviera is called "a sun bath." The principal difference is that in the former place there is generally an accompaniment of snow. As a consequence, the method of taking the "sun bath" differs. On the Riviera the patient simply strolls out, generally to the sea front, takes his seat on a bench, faces the south, and allows the hot rays of the sun to pour down upon him. At Davos there is a verandah or balcony which shelters him from the cold wind but is open in front to the rays and the heat of the sun. Therefore the sanatoriums have to be built facing the south. Then in the verandah there are deck chairs or couches. But the cold is so intense that ordinary rugs do not suffice and very generally a sort of fur bag is employed in which the patient places his legs. The lying out in the cold, freezing air, with the bright sunshine in mitigation, is the main feature of the cure. There are therefore hotels and boarding-houses which simply provide their lodgers with board, bedroom, and a balcony or verandah where the patients may lie down in the open as long as they like. Such places can hardly be called sanatoriums. A patient may do well there if he receives good advice and carries out the instructions but there is no discipline or surveillance. These are merely hotels which admit patients. Other establishments are genuine sanatoriums under the direction of a medical man who has a staff of medical men and trained nurses to assist him. In fact, they are hospitals, luxurious hospitals, with drawing room, billiard room, music room, and library, with everything that can help to render life pleasant, but where, nevertheless, a strict discipline is enforced and the patients are only allowed such pleasures and relaxation as will not interfere with their cure.

Of these, one of the largest and best known is Dr. Turban's Sanatorium. Here every minute of the day is provided for. When not taking his prescribed walk the patient must be lying down in one of the "cure galleries" or sitting out in the garden, or else he is partaking of one of the six meals served during the course of the day. Of these two are heavy meals and, contrary to the practice at Nordrach Colonie, no exercise is allowed immediately after the more substantial meals. The *régime* is one of moderate overfeeding. The galleries, or verandahs, where the patients lie and breathe the open air measure in all some 330 feet in length. In front there is a band stand, so that occasionally music is provided as a diversion. Some years ago the air in these "cure galleries" was examined and it was not found to be affected by the presence of the patients. The ideal gallery is that which is built away from the main building. (Fig. 1.) On the southern side there are blinds only; on the northern side there are wooden partitions or shutters that may be lowered or closed according to the weather or the condition of the patients. In one part of the shelter the back wall, so to speak, may be lowered altogether, so that the patient may be left with only the roof over his head and the dry wooden floor beneath his feet which is raised a little above the ground. The next patient may have the partition raised above his body but still open overhead and this opening may be more or less wide or closed altogether. At the two extremities there are glass windows which may found disobeying orders in this or other respects run the risk of being expelled from the sanatorium and a threat to this effect generally suffices to secure the necessary obedience and discipline. They would not easily find elsewhere equally beautiful and healthy surroundings, medical care, and generous diet. They have two breakfasts—coffee, milk, bread, jam, and butter at 7.30 A.M.; and more bread, butter, cheese, and milk, alone or with a little coffee, at 10.30 A.M. Then there is dinner at 1 P.M., which consists of soup, meat, potatoes, and green vegetables, followed by stewed fruits and a special cake or pudding on Sundays. At 4 P.M. there are afternoon coffee, milk, and, on this occasion only, dry bread. At 7 P.M. they have supper consisting of soup and hot meat. The object is to make the patients eat a great deal.

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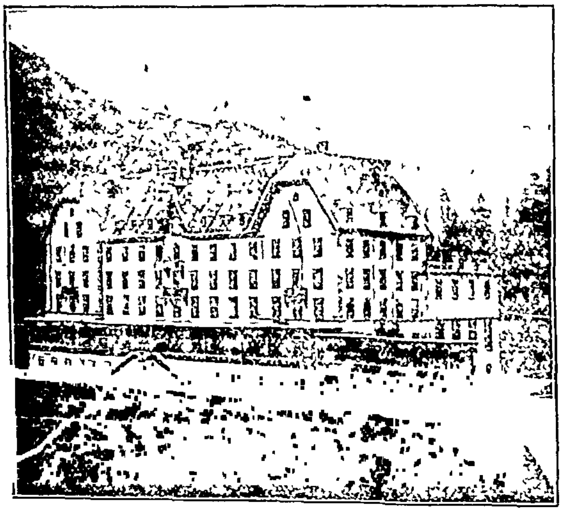
[1] No. I. was published in THE LANCET of July 8th, 1905, p. 113.

FIG. 4.



The Basle Popular Sanatorium at Davos Platz.

As far as possible only patients in the early stage of disease are taken in, nevertheless some are sent who have already reached an advanced stage but who are without fever. The sanatorium has been open both summer and winter for eight years and excepting during the first few months has always been quite full. The strongest patients are given douches in the morning in a well-fitted bathing room, and at fixed hours, especially before meals, they are made to lie in the shelters and breathe quietly the pure air. Those who have no throat trouble may lie out of doors until 10 P.M. Indoors they sleep with their windows open and it is only when the weather is intensely cold that the lower part of the window is closed. Some of the bedrooms contain four patients but a separate room is given to natives of Basle for whom a payment of 4*s.* per day is made. For others the payment is 5*s.* 7*d.* All the walls are oil-painted and can be washed easily, though they are not enamelled. There is no difference in the food whatever payment may be made for the patients, the only difference being in the bedroom accommodation. In the dining room there are three rows of tables and the paying patients sit at the middle table. The medical and the managing staff and chaplain all take their meals with the patients and are content with the same food. There are always two—sometimes three—resident physicians. The kitchen has windows on both sides. The ceiling seemed rather low but the kitchen is above ground and large with plenty of room and air. The dining room also has windows on both sides so that a through draught can be easily established. There are several sitting rooms and a reading room. The partition can be removed in one case so that two rooms can be thrown into one, thus giving space enough for a prayer meeting or a concert or other entertainment. Outside there are a tennis ground, a shooting range, places for various games, and a carpenter's shop for those who wish to divert themselves by a little handicraft work.

FIG. 5

The Basle Popular Sanatorium at Davos Platz, showing surrounding scenery.

There now comes the great question of cost. It has been calculated that in 1902 and 1903 the average consumption of meat per day per head was 364 and 362 grammes respectively; bread, 224 and 221 grammes; butter, 28 and 26 grammes; cheese, 36 and 40 grammes; milk, 1·8 and 1·8 litre; and egg, 0·5 and 0·4. Thus, with the exception of milk and cheese there was a slight reduction in the amount consumed in 1903 as compared with 1902. The milk costs 2*d.* per litre and some 68,000 litres are consumed in the course of the year. The food actually eaten is supposed to cost on an average 1*s.* 8¾*d.* per day, but the general working expenses are put down at 3*s.* 0½*d.* per day per head. Though here and there a patient may pay 4*s.* a day most of the institutions that send patients to this sanatorium can only pay less than 3*s.* a day. 2*s.* a day is more like the usual figure, so that there is a constant deficit. The deficit would be still greater if an adequate sum was paid for interest and a sinking fund in regard to the capital expenditure. Consequently, frequent appeals have to be made for donations and charitable contributions. In 1903, 99 male and 102 female patients resided in the sanatorium. The proportion of deaths was equal to 0·9 per cent. and of those who derived no benefit 7·3 per cent. Of the 91·7 per cent. of those who were benefited 66·6 per cent. experienced what is described as the full economical effect of the cure. This means that they were able to return to their usual work. Others, to the extent of 20·2 per cent., were able to work but in a much less satisfactory manner, while 12·3 per cent. were not able to work at all.

It is satisfactory to know that an attempt is now being made on behalf of the English-speaking people to imitate the example given by the Germans, Dutch, and Swiss. A site has been purchased on which will be built what has already been denominated the Queen Alexandra Sanatorium. The cost of the land was £2918 and at the commencement of this year £7882 had been collected. It will be necessary to obtain more donations before a suitable structure can be erected; however, this will doubtless be accomplished in time and the British sanatorium will be able to profit by the experience already acquired in the immediate neighbourhood. Nor should there be any delay in the accomplishment of so useful and humane a work.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Royal Visit to Manchester and Salford.

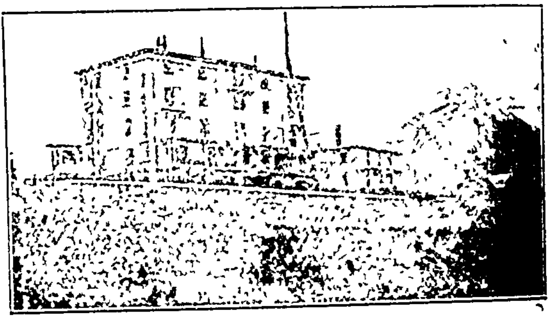
AFTER a most successful visit to Sheffield the King and Queen honoured Manchester and Salford with their presence on July 13th, where the whole population had for some time been full of eager and loyal expectation. London, tude of 5530 feet above the sea, is the ideally situated sanatorium of Clavadel. (Fig. 2.) The beauty of the surrounding scenery, the climatic advantages, the innumerable walks in the pine and larch forests, and the shelter which the mountains give are all topographical advantages that can only be found in these favoured Alpine valleys. At this spot the native population consists of five persons, aged from 70 to 91 and whose aggregate age is 407 years. This seems to speak well for the climate. The question, however, was to see what could be imitated elsewhere and especially in popular sanatoriums. First, I would say that here, as at Dr. Turban's Sanatorium, I was delighted with the kitchen which was above ground, lofty, and bathed with light. Here the cutlery was pointed out to me as of special make. The arrangement for the handles is such that repeated exposure to jets of steam under pressure will not make them fall to pieces. Thus the knives, the spoons, and the forks are not only washed but disinfected. The same naturally may be said of the plates and the cups. Excepting the hall and the dining room, where there is an oak parquet, the floors are made with a coating of cement, some felt, and then linoleum with three inches of excess in size so as to turn up on nearing the walls and thus to round off the angles. The walls and the ceilings are varnished and painted so as to be washable and the wood of the furniture is painted with white enamel. But here there is an important omission. Underneath and inside the chairs, tables, or drawers in the dark, shaded, and unseen places, where particles of dust are more likely to be dangerous, there is no enamel paint but the bare porous wood. It is difficult to make an ordinary upholsterer understand that from the health point of view it is precisely what cannot be seen that is the most important. The rooms are without hangings or carpets and that is a very good thing. Then the windows are large and lofty and can be opened at the top when the patient cannot endure the throwing open of the entire window.

The rooms looking in a southerly direction have balconies but some of them have balconies of exceptional size. Indeed, they constitute a sort of supplementary room which may be considered as being partially out of doors. But excepting at the top floor, where there can be no balcony overhead, these very broad balconies throw their shade on the window of the floor below and, to a large extent, prevent the rays of the sun entering the room beneath. (Fig. 2.) It is true that at Clavadel these very broad balconies are only attached to large corner rooms which have two windows but elsewhere this is not always the case. It is therefore not amiss to notice the fact that while it is very tempting to offer a patient the great convenience of full outdoor treatment on a balcony outside his own bedroom window, this may have the serious inconvenience of preventing the full light of the sun penetrating the room below. The gallery built as a wing on one side of the sanatorium is admirably placed and is not in the way of any inhabited quarters. Yet it can be reached from the main building without leaving the cover of a roof, though the patients are in the open air.

The sanatorium is intended for the serious treatment of patients. It is not a pleasure resort and is so far from the dances, theatricals, concerts, and sports of Davos-Platz that there is no chance for reckless patients to commit an imprudence. On the other hand, the isolation is not absolute. There is some 300 yards away the "Curhaus Clavadel" with 27 bedrooms and two pensions of from six to seven rooms each, which do not profess to be sanatoriums but where the friends of patients and ordinary tourists can board for from 5*s*. to 8*s*. a day. Then there are the three or four peasants' cottages where the natives live to such a ripe old age. At the sanatorium board and medical advice, baths, douches, and massages are charged 8*s*. 10*d*. per day, but this does not include the cost of wines, mineral waters, medicines, or of the rooms. The rent of the rooms is charged separately and varies from 1*s*. 8*d*. to 5*s*. a day. Then every patient must pay 8*s*. for the disinfection of his room when he leaves. The fact that this last item is marked down in all the prospectuses is decidedly encouraging. It shows how thoroughly the necessity of disinfection is recognised and has become a part of the everyday customs and habits of the people.

Having thus said a few words concerning two well-known and typical private sanatoriums for paying patients, there remains the more complicated and more important question of the popular sanatoriums. Outside Davos-Platz, at some considerable distance and on the farthest side of the beautiful Davosersee, the Germans have established a popular sanatorium with 80 beds. In Davos itself, perhaps too near the centre of the town, is the Dutch popular sanatorium. (Fig. 3.) This, so far as the building is concerned, cannot be considered a model institution. It is not very far from the main road close to the point where Davos-Platz merges into Davos-Dorf, and though the building stands by itself with a good sized field before and behind nevertheless there are other houses close at hand. The invalids when they go out are near the main street, cafés and small taverns, and the other disturbing influences of town life. This, I take it, is not the ideal. On the other hand, there is nothing to prevent the patients enjoying the full advantages of the Alpine climate. The hills, mountains, and pine forests are close at hand, and those who have come all the way from Holland to this beautiful place must indeed deem themselves fortunate. The house is a great square building evidently not constructed for a sanatorium though it might suit as a hotel. Terraces or broad balconies have been built in front to enable the patients to lie in the open air and sunshine but there are bedrooms at the back where little or no sun can be enjoyed. Nevertheless, and reckoning this sanatorium as containing 50 patients, the cost of the building amounted to £150 per bed. The cost of maintenance is estimated at 5 fr. 56 c. (4*s*. 5½*d*.) per day. The patients are charged 4 fr. 90 c. (3*s*. 11*d*.) per day, which they pay themselves either out of their own pockets or through a benefit fund, or else by the intermediary of some charity. It will be seen, therefore, that there must be a deficit and consequently appeals for help have constantly to be made. There is but one resident physician who has, however, to see each patient at least once every day and more frequently when necessary. There are a few small rooms with but one bed but the majority of the rooms are larger and contain two or three beds. The usual diet consists of tea, milk, bread-and butter, and cheese, or some sort of porridge made with boiled milk, given at 8 o'clock in the morning. At noon dinner is served and consists of soup, meat, vegetables, a sweet dish, and dessert. At 3 P.M. there is afternoon tea or a glass of milk. At 6 P.M. supper is served, which consists of meat, bread, butter, cheese, jam or honey, with coffee and milk. At 8 P.M. more milk is given. The diet, therefore, seems plentiful and the cost of the establishment moderate.

FIG. 3.



The Dutch Popular Sanatorium at Davos-Platz.

But more interesting, and serving better as a model, is the sanatorium founded by the Society of Public Utility of Basle. (Figs. 4 and 5.) This was opened on Dec. 14th. 1896. It contains 86 beds and cost £22,642, or £263 pe bed. Here we have a vast building erected especially a a sanatorium and this on an ideal site. It is away from the town on the other side of the Davos valley. It nestle under the shelter of a pine-covered hill which supplies not only shelter but the best of exercis and close at hand. In front there is the open valley with the su pouring its vivifying rays on to the façade of the building. Here the vast terraces form arms on each side of the building that stretch out as if to embrace the light and warmth. There is no lack of room for the patients to lie out unde shelter and yet be in the open air. They will not inconvenience anyone. They are well out of sight nor will any nois or dust reach them. Of course the more healthy and stron could walk as far as the main street of Davos-Dorf or Davos-Platz and even without going that distance might find café or taverns to their liking. The patients, however, who ar to the industrial school. Of the 64 boys examined there were six with sound mouths and the remainder had an average of three decayed teeth each. It is of interest to compare these results with those found among the boys attending the public elementary schools. In the industrial school 9·3 per cent. of the boys had sound mouths while in the public schools the percentage was 3·3. The public school boys averaged 3·7 decayed teeth per boy, compared with 2·7 in the case of the boys in the industrial school. Mr. Morgan expresses the opinion that this difference is due to the fact that the boys at the latter school are less pampered than the children attending the public schools, that they have harder food to eat and thus make use of the muscles of the jaw to a greater extent, so improving the nutrition of the gums, and that they rarely have any spare cash to spend at the sweetstuff shop. In view of the fact that many of the industrial school boys will enter the army and the navy he urges the importance of a periodical examination by a dental surgeon.

Winsley Sanatorium.

At a meeting of the Bristol and Bath branch of the British Medical Association which was held at the Winsley Sanatorium on July 12th Dr. Lionel A. Weatherly gave some interesting details of the institution since the first patients were received last December. During the period indicated 57 of the 60 beds have been occupied. Altogether 85 patients have been treated and 31 have been discharged. Of the latter number seven have returned to their ordinary employment and 11 have found lighter work than they had previously been accustomed to. Eight patients were sent home without any signs of improvement, nine were very much improved, and in 14 instances the arrest of the disease was practically complete. Dr. Weatherly stated that the cases were roughly classified as (1) those in which they expected to get complete arrest of the disease; (2) those in which they might reasonably expect to get what would be practically a cure; (3) those in which they could hope for some little improvement and help the patients on for a few years; and (4) those which were unsuitable and for which from the moment they came in it was seen that little good could be done. He also spoke of the difficulty there was in finding suitable work with proper surroundings for those who had been treated in the sanatorium and suggested the formation of an after-care association for the purpose of dealing with such cases as needed to be dealt with.

Careless Conveyance of Arsenic Ore.

At the meeting of the Redruth (Cornwall) rural district council held on July 14th a discussion occurred in reference to the danger caused by the dropping of arsenic ore on the public roads from wagons belonging to a local mining company. The clerk stated that the attention of the company had been drawn to the matter but the nuisance had not been abated. It was eventually decided to invite the Redruth and Camborne urban councils to take joint action in the matter.

Taunton Isolation Hospital.

At the meeting of the Taunton town council held on July 11th a discussion took place in reference to the management of the isolation hospital. The subject has been already alluded to in THE LANCET. Eventually the council members of the hospital committee declined to serve on the joint committee with the rural district council any longer and the whole matter was adjourned pending the decision of the Local Government Board as to whether the town council or the rural district council would carry on the hospital as a single authority.

July 17th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The late Principal Sir William Muir.

Sir William Muir, K.C.S.I., late Principal of the University of Edinburgh, died at his residence, Dean Park House, Edinburgh, on July 11th. Until about a fortnight previously to that date he had been able to take regular carriage exercise but had latterly been confined to his bed. Sir William Muir was 86 years of age at the time of his death, having been born in Glasgow in 1819. His father, who was a merchant in that city and a member of the town council, died in 1821 and his widow with her four young sons then removed to Kilmarnock. Each of the four boys subsequently entered the service of the East India Company. Sir William Muir studied in the Universities of Edinburgh and Glasgow and subsequently spent two years in the East India Company's College at Haileybury. He then proceeded to India where he remained for 39 years. From the outset his administrative abilities were recognised and they were increasingly demonstrated as the appointments which he held became more important. As a young lad he was employed in connexion with the land assessment in Cawnpore and Bundelbund. In 1843 he was appointed to the magistracy and collectorship of Suttehpore, where he remained until 1846. During the Mutiny Sir William and Lady Muir, with some of their children, were among the Europeans shut up in the fort at Agra. After the Mutiny was subdued he became secretary to the Viceroy, Lord Canning, at Allahabad. In 1864 he was appointed a member of the Imperial Legislative Council of India and soon thereafter he became Secretary for Foreign Affairs to the Government of India. From 1868 to 1874 he held the important office of Lieutenant-Governor of the North-Western Provinces. During his rule over this district he made his influence strongly felt, especially in the departments of public instruction, sanitation, and economic progress. The Muir College and Allahabad University stand as monuments to his memory. In 1874 he became finance member of council. After holding this post for two years he retired from the Indian service, but for the following nine years he continued to work as a member of the Indian Council in London. He very much disliked the opium trade and strongly opposed the extension of opium cultivation. When the office of Principal of the University of Edinburgh became vacant on the death of Sir Alexander Grant the curators in 1885 elected Sir William Muir and for 18 years he exerted in Edinburgh the influence which intellectual ability combined with courtesy of disposition and a genuine uprightness of character is bound to produce. During his period of office various important developments occurred. The Universities Act of 1889 and the Universities Commission made alterations respectively in the constitution of the University and in the scheme of studies. Further, the Students' Union was built and the Students' Representative Council was formed. Later, by the erection of the M'Ewan Hall the University was provided with a building suitable for public ceremonial occasions. In 1902, after a period of ill-health, he intimated his resignation of the principalship and the University Court in accepting it entered on its minutes a high appreciation of the services which he had rendered in that capacity. Sir William Muir produced a number of important literary works, among which may be mentioned "The Life of Mahomet," "The Caliphate," "Mameluke Dynasty," "The Coran, its Composition and Teaching, and the Testimony it bears to the Holy Scriptures," "The Mohammedan Controversy, 1897," "The Apology of Al-Kindy," "The Rise and Decline of Islam," and "The Lord's Supper; a Witness to the Death of Christ." In recognition of his literary eminence he received honorary degrees from the Universities of Edinburgh, Glasgow, and Oxford. He also had the degree of Ph.D. of Bologna. The funeral, which took place at the Dean Cemetery, Edinburgh, on July 15th, was, in accordance with the wishes of the family, as far as possible of a private nature. The University Court, the Senatus, the Students' Representative Council, and the University Union were the only public bodies formally represented. On Sunday, July 16th, a memorial service, conducted by Professor W. P. Paterson, D.D., and the Rev. John Kelman, M.A., was held in the M'Ewan Hall under the auspices of the Students' Representative Council. It was attended by a large number of the professors of the University, by the executive committee of the Students' Representative Council, and by a large number of students.

The School of Medicine of the Royal Colleges, Edinburgh.

At a meeting of the governing board of the School of Medicine of the Royal Colleges, Edinburgh, the secretary and registrar, Mr. R. N. Ramsay, reported that the number of students attending the school during the winter session, 1904–05, was 1122 and during the summer session, 1905, the number was 1237.

University of Aberdeen: Interesting Memorials.

The portrait medallion, in marble of the late Principal with its frequent opportunities of seeing royalty both informally and in all the pomp of ceremonial pageantry, can perhaps scarcely enter into the feelings and emotions of our far-away northern towns when the pent-up loyalty of the people finds expression on the rare occasion of a Royal visit. In Manchester everything had been put aside so that full and fitting preparation could be made for showing the fervent loyalty pervading all classes of the people. Without attempting any explanation of the fact, it is as true in these democratic days as in old times that there is something in the associations surrounding an ancient reigning family which touches the imagination and the emotions; and when to this are added the respect and affection inspired by lives dedicated to the good purposes which have ever held a foremost place in the careers of King Edward VII. and Queen Alexandra, all such sentiments are deepened and intensified. The one event in the undistinguished and but too sombre lives of many of the tens of thousands who looked on their King and Queen probably for the first and last time that will never be forgotten is the glimpse they had of them on Thursday last and they will, perhaps, cherish the conviction that a smile or a bow was specially for them. It was a busy day. From the station at Hunt's Bank the procession drove up Market-street and in front of the infirmary in Piccadilly 30,000 children and more cheered and waved 30,000 flags, blue, white, and red. In Princess-street 8000 more children gave joyous evidence of their presence and in Albert-square as the King and Queen entered the town-hall the thousands of people assembled cheered again and again. Here addresses were given and responded to. Near the entrance to the town-hall 200 old soldiers of the Crimean war were drawn up. Among them were the halt, the lame, and the blind, but almost all of them marched past and saluted their Majesties as they were about to start for the Ship Canal. With half a dozen sergeants the King and Queen shook hands while "Where are the boys of the old brigade?" was asked musically by the volunteer band. Of course there were children everywhere and in front of the blind asylum there were some thousands and at the deaf and dumb school one of them who, though deaf, had been taught to speak, presented the Queen with a bouquet and the youngest child in the blind school, who was lifted up to the carriage, asked the Queen's acceptance of a "bunch of flowers" on behalf of the inmates of the blind asylum which she took with "tears in her eyes." After the ceremony of opening the new dock, said to be one of the largest in existence, the procession went on to Peel Park in Salford, where an address was presented, and at Oldfield-road, opposite the Salford Royal Hospital, the King, at the request of Colonel Sir Lees Knowles, M.P., unveiled a memorial erected by Salford to "many brave men who served their sovereign and country in South Africa in 1899-1902, and particularly in honour of the Volunteer Active Service Companies of the Lancashire Fusiliers." The next move was to the Victoria station, which was left by the Royal train at 4.45 for Knowsley. There was no hitch in the proceedings and no serious accident occurred in the seven miles of the route traversed by the Royal procession.

The Case of Plague at Manchester.

All cause of fear that the case of plague which recently occurred at Manchester would be followed by others seems now to be removed. The medical officer of health reported to the Tees port authority at a meeting held last week that on hearing of the death at Manchester he again inspected the ship in which the man who died came over and found all well. He also found the men who had been paid off and had gone into the town quite well and the inquiries he had made as to those who had gone to their homes were satisfactory. The man who had accompanied the poor fellow who died to Manchester returned to Middlesbrough wearing the dead man's silk scarf and a few days afterwards fell ill and, "showing all the symptoms of plague, was removed to the isolation hospital." Blood taken from this man was sent to London for examination and was reported free from any signs of plague. Shortly afterwards he and the others in the hospital were discharged and the ship left a day or two later for London. All on board the ship and those of the crew in the town had been removed to the hospital and a rat-catcher had cleared the ship of rats both dead and alive. These were sent to London for examination and were also reported to be healthy—i.e., free from any signs of plague.

Degree Day at the University of Manchester.

The conferring of degrees at the University of Manchester took place on July 8th in the Whitworth Hall. Lord Spencer, the Chancellor, was resplendent in Court dress with Garter and Ribbon and over it the violet gold-braided robe of the Chancellor with a violet and gold academic cap. This magnificence of attire, with "the splendid dignity of the Chancellor's entry," is supposed to have filled the students with awe as they were not so frolicsome as usual, only manifesting the spirit within them by giving a cheer when the Chancellor said he did not intend to make a long speech. The Bishop, with other members of the University Court, was on the platform, and also a distinguished American authority on education, Dr. Nicholas Murray Butler, President of the Columbia University of New York, upon whom was conferred the degree of Doctor of Laws. The passage of the Chancellor's address most interesting to the medical profession was that in which he spoke of the great scourge—yellow fever—which year after year carried off hundreds and thousands of victims in the West Indies. But now a work which can be traced directly to educational influences has been done by the American Government which has freed Cuba from the scourge, so that now it can be said that yellow fever no longer exists there. Lord Spencer was frank enough to say that he had "only this morning" heard of that great work and one wonders, therefore, whether he has heard of the self-denying and devoted labour by British workers, not by the British Government, in the investigation and treatment of tropical diseases. After receiving his degree Dr. Butler gave an eloquent address, in which he spoke of the two chief aims which he thought a university should serve in such a population as that of Manchester. "First to keep lighted the fires of letters and scholarship and to make plain that the vast material growth and expansion that we see on every hand has but added to the value of the old truths and ideals that have elevated mankind out of his barbarism to the civilisation of which we are so justly proud. ...... And next ...... to show the urban community and those depending upon it how their interests, their health, their growth, their education, and their prosperity may best be increased and furthered by the application of scientific truth and scientific method to the needs and necessities of the moment." The degree of Doctor of Medicine was conferred on the following gentlemen who were presented by the Dean of the Faculty of Medicine:—Miles Bracewell Arnold, Andrew Campbell Clarke, Mercier Gamble, Edmund Albert Goulden, John Percival Handel Greenhalgh, Charles Paget Lapage, Arthur Francis Martin, Samson George Moore, Harry William Russell, Claude William Scott Saberton, Samuel Woodhouse Thomson, and Thomas Tierney. A graduate scholarship in medicine was awarded to Thomas Wingate Todd and the gold medal among the Doctors of Medicine to Mercier Gamble and Harry William Russell. In the afternoon a garden party, largely attended, was given at Fallowfield.

Would-be Suicides.

At the Salford borough sessions the other week the Recorder stated that out of the 18 names on the calendar eight of the number were charged with attempted suicide. Family troubles, lack of employment, ill-health, and drink were the causes given for these attempts. He thought that this state of things was very serious and not creditable to the borough, while the problem of how to deal with the people was a very difficult one. In some places, both in this country and on the continent, the hot weather seems to have driven people to suicide and, of course, the accidental deaths from drowning have increased, as they usually do.

Cumberland Hospital Sunday and Saturday.

The total amount collected for the Cumberland Hospital Sunday and Saturday Funds is £1406.

July 18th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

The Teeth of School Children.

SOME time ago Mr. E. Rice Morgan, one of the medical officers of the Swansea education committee, prepared a report upon the teeth of boys and girls attending five of the public elementary schools in the borough (an account of this report appeared in THE LANCET of Feb. 4th, 1905, p. 328), and at the end of last June he published the results of more extended observations in the same direction applied very serious and expensive problem. Two courses are open: one is to continue to construct bacteria beds with the idea of purifying the sewage before it enters the lough, and the other is to carry a sewer down on each side of the lough for miles so as to open into the sea at the mouth of the lough. The latter is the more expensive but it is really the only thorough solution of the question.

The Central Midwives Board.

The reply given by Mr. Long, Chief Secretary for Ireland, in the House of Commons to Mr. C. C. Craig, M.P., on July 6th in answer to a question asking why the Central Midwives Board of England had refused to place upon the roll of certified midwives nurses trained at the Belfast Maternity Hospital previously to March 31st, 1905, while it had placed on this roll nurses trained under similar conditions and up to the same date at the Dublin Maternity Hospitals, at the Cork Maternity Hospital, and at the Maternity Hospital in Limerick, has excited considerable surprise in Belfast. The Belfast Maternity Hospital was not recognised, he said, owing to its failure to apply in time. Now in the memorial presented to the Central Midwives Board by the board of governors and medical staff of the Belfast Maternity Hospital it is stated: "We have been informed that our request has been refused because it ought to have been made earlier. In reply, we beg to state that the delay arose on our part owing to the building of our new maternity hospital—the largest of its kind in Ireland outside Dublin—and in reply to a letter written to the chairman of the Central Midwives Board by a member of the medical staff, asking if it would do to apply after we had entered our new hospital, he was informed in a letter dated Oct. 14th, 1904, 'If you apply when your new hospital is ready the Board will consider the matter without delay'; we entered our new hospital at the end of last year and on Feb. 14th, 1905, we made formal application, so that the argument of not having applied in time does not hold." The date up to which nurses could apply was March 31st, 1905, so that the reason furnished to the Lord President of the Council for the Chief Secretary as an answer to Mr. Craig's question is totally inaccurate. But the Central Midwives Board will now have to reckon not only with the Belfast Maternity Hospital but with the Ulster Hospital for Women and with the maternity associated with the Belfast union infirmary, the authorities of all of which are complaining at the extraordinary action of the Central Midwives Board, and at a meeting of the Council of the British Medical Association held in London on July 5th it was decided to request the Central Midwives Board to reconsider the question "so that nurses trained in the Belfast Maternity Hospitals prior to March 31st, 1905, and who present certificates of having passed the examination at the end of their practical training shall be placed in the same position as nurses trained under similar conditions in the Dublin Maternity Hospitals and in the Lying-in Hospitals of Cork and Limerick, and who, up to March 31st, 1905, have been placed on the roll of certified midwives." The Central Midwives Board is by its action in this matter raising a great deal of opposition both among the public as well as among the members of the medical profession.

The Belfast Court-house.

A proposition was adopted by the Belfast grand jury on July 17th expressing gratitude to the high sheriff (Dr. H. O'Neill) for his efforts to bring about a better state of affairs in the building, sanitary and otherwise, for the accommodation of judges, advocates, jurors, and witnesses. The Lord Chief Baron endorsed the vote of thanks to the high sheriff.

July 18th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A Watering place Committee.

THE Minister of the Interior has just issued an order by which there is constituted as part of his department a permanent committee dealing with the watering places and climatic stations of France. This committee's duty will be to examine into the general needs of such places, to be, so far as it can, a body devoted to their interests, and generally to protect and to develop them. The Minister of the Interior is the honorary president of the committee. The mayors and the medical men of the various watering places, the directors and the committees of *sociétés thermales* are liable each in his turn to be summoned to serve on the committee but only for a period of three years. Extraordinary meetings may be summoned by the minister or on the demand of one-third of the members. The president of the committee is M. Armand Gautier, member of the Academy of Medicine; the vice-presidents are M. A. Carnot, inspector-general of mines; M. Cazeneuve, deputy; M. Chautemps, senator; and Dr. Lannelongue and Dr. Robin, both of whom are members of the Academy of Medicine. The secretary-general is Dr. Huchard and there are some 60 ordinary members of committee.

Municipalities and the Public Health.

At the meeting of the Academy of Medicine held on July 4th Dr. Poupinol, mayor of the commune of Saint-Arnoult, and Dr. Camescasse, a local medical man, contributed a most interesting paper showing how the public health law is administered in some districts. An epidemic of diphtheria broke out and Roux's serum was used with such success that there were no fatal cases. Of the total number of cases in which it was used 29 were undoubtedly diphtheria, nine were doubtful, and in 89 the serum was used as a prophylactic. The municipality refused to help in defraying the expenses of the treatment and the sub-prefect who in a preliminary note recommended the use of the serum, in a second note refused to procure it saying that the method was a private therapeutic method and not a means of protecting the public health. The mayor, being a medical man, was naturally annoyed and brought the contents of the note before the Academy of Medicine.

A Case of Relapse in Pneumonia.

At the meeting of the Hospitals Medical Society held on July 7th M. Antony reported the following case. The patient was a *garde républicain*, aged 29 years, who developed an ordinary pneumonia of the base of the right lung. Consolidation gradually extended upwards and forwards and the crisis arrived on the eighth day, being accompanied with polyuria. Eight days later the base of the left lung became affected and four days after this the second crisis took place also accompanied with polyuria. The patient completely recovered by the twenty-first day after invasion.

White Swelling of the Knee successfully treated without Resection.

At the meeting of the Surgical Society held on July 5th M. Walther showed a young girl who had been under his care for 18 months suffering from white swelling of the knee with almost complete backward displacement of the tibia. The patient was treated with simple extension, continued for some time together with the application of the *méthode sclérogène.* The result was eminently satisfactory, the tuberculous process being apparently quite extinguished and the patient was able to walk well with a stiff joint, the limb being quite straight. M. Lucas-Championnière, M. Arrou, and M. Routier, however, gave it as their opinion that although the result obtained by M. Walther was so good, it would have been better and quicker to have resected the knee-joint.

Sympathetic Ophthalmia.

At a recent meeting of the Ophthalmological Society M. Chevallereau reported the case of a child, aged 11 years, who six weeks after receiving a severe injury to the left eye presented marked symptoms of sympathetic ophthalmia of the right eye. The injured eye was removed and by the second day after the operation the right eye cleared up. The mercurial innunctions which had been begun before the enucleation were continued and in a very short time the eye recovered all the visual acuity which it had possessed previously to the onset of the sympathetic ophthalmia. M. Chevallereau drew attention to the two most noticeable points, first, the successive appearance at a very short interval of the two most common forms of sympathetic ophthalmia—namely, irido-choroiditis and optic neuritis, and, secondly, the complete and rapid disappearance of the sympathetic symptoms after enucleation of the injured eye.

Rabies following a Bite from a Mouse.

At the meeting of the Biological Society held on July 1st M. Remlinger of Constantinople read a paper concerning the case of a young girl who was bitten on the finger by a mouse and who died six months later from acute rabies. As the patient had never been bitten or licked by a rabid dog or cat or by one even suspected of rabies, it seemed only rational to attribute the rabies in her case to the bite of the mouse.

Sir William Geddes, by Mr. Pittendrigh Macgillivray, R.S.A., has now been completed and will during the vacation be placed in the recess reserved for it in the Geddes transept of the library at King's College. The medallion is an admirable work of art and the likeness is very striking. The sole inscription consists of the words "William Duguid Geddes" and the last line of the eleventh book of the "Odyssey" in the original Greek (suggested by Lady Geddes as a saying which the late principal delighted to quote as an incitement to his students). The translation of the line is: "First the toil at the oar and then the favouring breeze." The medallion will probably be unveiled at the opening of next winter session. At the same time the memorial to the late Professor John Fyfe will, it is hoped, be in position. This consists of a design by Mr. Douglas Strachan to be placed in one of the windows of the King's College library. The design symbolises bibliography, being one of a series suggested by Mr. Strachan to fill the seven main windows in the south side of the library and to represent theology, philosophy, literature, mathematics, fine arts, &c. The only lettering, in addition to the dedicatory inscription, consists of the verse from Proverbs, "Wisdom hath builded her house; she hath hewn out her seven pillars." A meeting of the committee having charge of the proposed memorial to the late Professor James Nicol was held in Marischal College on July 15th, Professor J. W. H. Trail being in the chair. Dr. William Mackie (Elgin), the honorary secretary, read a large amount of correspondence with geologists and old pupils of Professor Nicol, the general tenor of which favoured the placing in the geological museum of a portrait tablet in bronze, similar to those recently erected in memory of Professor Macgillivray and Professor Alleyne Nicholson. The amount received is nearly sufficient to meet the cost of such a tablet, and it is hoped that a few additional subscriptions will be intimated to Dr. Mackie before it is necessary to close the list. The committee aims at a formal inauguration of the memorial during the quater-centenary ceremonies next year, when many pupils of Professor Nicol will be in Aberdeen.

The Cost of Kingseat Asylum, Aberdeen.

The following is a statement of the payments to contractors and others up to date in connexion with the Kingseat Asylum. I send you these details because the figures in relation to the Kingseat Asylum are often quoted.

	£	s.	d.
Purchase of lands and cost of improvements, &c.	12,428	1	1
Improvement of ground	2,267	5	5
Mason	27,742	6	10
Carpenter	17,933	4	1
Plumber	7,017	11	1
Slater	2,689	5	0
Lath, plaster, and tile work	6,370	0	0
Painting, glazing, and papering...	2,704	5	7
Iron, smith, and founder work	2,810	7	10
Heating and ventilating	6,827	17	2
Architect and clerk of works	4,997		6
Draining, fencing, &c.	2,01	4	1
Waterworks...	4,789	10	10
Roads	2,449	5	7
Electric installation	5,786	3	0
Sewage purification works	1,889	4	1
Laundry machinery and cold storage plant	2,844	10	0
Household furnishings	183	8	10
Ironmongery and cutlery	477	15	4
Bed-coverings	1,934	0	11
Table linen and towelling	220	6	9
Mattresses and upholstery	1,148	1	3
Carpeting, floorcloth, &c.	651	2	11
Joiner and cabinet work...	4,523	3	4
Stoneware and glass...	142	3	7
Minor furnishings	1,580	16	6
Payments to others than contractors, including salaries of officials and preparing buildings for occupation	910	17	9
Total	£125,335	19	4

The accounts for the year show that there were paid for interest on loans £4002 18*s*. 9*d*.; instalments of sinking fund, £3893 11*s*. 5*d*.; taxes and assessment, £379 19*s*. 10*d*.; repairs and upkeep of the asylum buildings, £250 4*s*. 1*d*.; printing, &c., £178 0*s*. 5*d*.; and office rent, £60; making with other payments a total of £9207 13*s* 8*d*. In the farm account for the year there is a deficit of £586 17*s*. 9*d*., and in the general account the deficit is stated to be £2862 18*s*. 6*d*. The maintenance of patients and expenses came to the substantial sum of £10,993 16*s*. 3*d*., the chief items being the following: butcher's meat, £638; milk, £616; butter, £220; bread, £573; clothing, £2036; boots and shoes, £338; fuel, £1409; salaries and wages, £2588; carriage of articles and conveyance, £297; and incidental expenses, £217. In the estimates for the coming year the cost of maintenance is put down at £10,807 0*s*. 5*d*., which with the debit balance for last year of £2862 18*s*. 6*d*. makes a grand total of £13,669 18*s*. 11*d*. It is estimated that the number of patients for the coming year will be 390 and that the average cost of maintenance per annum will be £35 1*s*.

July 18th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Serious Illness of Sir Antony Macdonnell.

THE Under Secretary, Sir Antony Macdonnell, has been suffering for some weeks. On Saturday, July 15th, he was removed from the Chief Secretary's Lodge in Phœnix Park and conveyed by an ambulance to the private hospital in Tower Mount-street where an operation was performed by Sir William Thomson. The bulletin of this evening, July 18th, states that the patient's strength is well maintained and his progress satisfactory. Telegrams of inquiry have been received from the King and also from the Pope.

Professorship of Chemistry to the Apothecaries' Hall.

The position of professor of chemistry to the Pharmaceutical Society's School of Ireland has just been filled by the appointment of Mr. P. Kelly, M.P.S.I., Dublin. He was formerly lecturer in pharmacy at the Ledwich School of Medicine and has since devoted his time to the study of pharmaceutical chemistry. He now succeeds the late Professor Tichborne, LL.D., L.R.C.S. Irel., who was long well known to the medical profession in Dublin as president of the Royal Pharmaceutical Society of Ireland, Government analyst for many counties, and for some years member of the General Medical Council.

Death of Mr. W. Duncan, L.F.P.S. Glasg.

Mr. William Duncan, who for the past 14 years has been in practice in Belfast, died on July 11th after a lingering pulmonary illness. He was only 46 years of age and owing to his skill, genial disposition, and sympathetic nature he enjoyed a large practice among the working classes of Belfast. He leaves a widow and family. He was buried in Castledawson, Co. Derry, on July 14th.

Health of Belfast.

At a meeting of the public health committee held on July 13th considerable discussion arose as to the high death-rate for the week ending July 8th, which was from all causes, 18·9, the highest amongst the great cities of the kingdom; and from the principal zymotic diseases, 1·9. This high death-rate was ascribed to irregular registration of deaths and the usual weekly fluctuations. For instance, in the week ending June 24th the death-rate from all causes was 12·6 (the lowest in Ireland), whereas it jumped up to 17·6 and 18·9 respectively in the two weeks following. Taking into consideration the nature of the occupations of the people, the medical officer of health contended that the health of Belfast was fairly satisfactory.

The Foreshore Nuisance in Belfast Lough.

The Select Committee of the House of Commons, after hearing evidence, decided on July 14th to confirm without any modification the provisional order made by the Local Government Board, under which a joint board is formed, representative of Belfast, Castlereagh, and Holywood, to prevent the pollution of Belfast Lough by sewage and decaying seaweed. There is a general feeling that the Belfast corporation would have been wiser not to have opposed the scheme; and as a result it has gained nothing but has spent a large amount of the ratepayers' money in a useless piece of opposition. The fact of the matter is that with the constant discharge into Belfast Lough of the sewage from 270,000 inhabitants it is rapidly becoming little better than a vast cesspool. This year, with such exceptionally warm weather on both sides of the lough, the stench is far worse than ever and is being felt at an even greater distance down the lough than before. The inhabitants on both sides of the lough are complaining more than ever and as a result the Belfast corporation is faced with a

The long incubation period (six months) and the long duration of the attack (nine days) pointed to the inoculation of a very small quantity of virus and not to its attenuation by passage through the mouse. Both rats and mice are very susceptible of the poison of rabies and possibly bites from them may explain the so-called spontaneous cases of rabies which have been observed both in men and in animals.

The Heredity of the Stigmata of Degeneration in Reigning Families.

M. Galippe has been carrying out a research into this subject and he chose reigning families because their archives are complete for several centuries and not because they have an exclusive privilege in degeneration. Among them he fixed upon the house of Hapsburg because this family possesses one stigma which is easily observed and which, moreover, is transmitted not merely in the Hapsburg line proper but in families allied with it. The stigma in question is prognathism of the lower jaw, together with certain secondary anomalies which accompany it. By the aid of illustrated documents which he criticises M. Galippe has been able to trace the hereditary transmission of this stigma of degeneration from the fifteenth century up to our own times. He notes that the female side is chiefly concerned in this transmission and gives historical examples, such as that of the King of Rome who was a Hapsburg, both from the physical and the moral point of view. Founding his contention upon the heredity of certain characteristics of physiognomy M. Galippe proves the pedigree of Don John of Austria, natural son of the Emperor Charles V., as well as the legitimacy of the claims of the pseudo-Louis XVII., *alias* Naundorff. M. Galippe communicated his work to the Academy of Medicine on July 4th.

The Course of Medical Study.

The Minister of Public Instruction has just sent out to all University Rectors a circular relating to medical studies. After referring to the fact that medical studies have been for some years past the target for lively criticisms the minister points out that the technical studies of the future medical practitioner are on an assured basis but that their professional training does not seem sufficiently practical. It is of little use simply to acquire a mass of information; those about to enter the medical profession should have a taste for observation of such a kind that they will be fitted to act with decision and prudence in the many very responsible circumstances in which they may find themselves. The minister makes a special recommendation that the chief place should be given to the practice of medicine during the stage of hospital work. He suggests that the rectors should have a consultation on the subject with the Faculty of Medicine attached to their respective jurisdictions (*ressorts*). Finally, he asks whether the present system of examinations shall be retained, whether the examinations at the end of each year shall be re-established, or whether they shall be grouped at the end of the third or of the fourth year. The minister requests that answers to these questions may be sent to him before Jan. 1st, 1906.

Painful Mastitis: Operation by the Æsthetic Method of Morestin.

At the meeting of the Society of Anatomy held on July 7th M. Péraire showed a mammary tumour, a pure fibroma. He had removed it on account of the pain to which it gave rise, this pain being more acute at each menstrual period. The patient's age was 23 years and she had noticed the growth for about a year. It had no connexion with lactation nor was there any history of injury. The growth was apparently continuous with the gland substance. M. Péraire employed the axillary incision of Morestin by which the shape of the breast was unaffected.

July 17th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The German Practitioners' Association.

THE annual meeting of the German Practitioners' Association (*Deutscher Aerztetag*) was held on June 26th and 27th at Strasburg in Alsace, Professor Loebker of Bochum being in the chair. The principal subject of discussion consisted of questions connected with the medical academies, to which I have referred on a former occasion. These academies, which are attached to the hospitals of the larger towns, will supply practitioners with opportunities for post-graduate study and will facilitate the training of specialists. Students may also be admitted to the academies for their "practical year," in accordance with the new regulations relating to medical examinations. Hitherto only one academy has been opened—namely, at Cologne, but it is the intention of the Government to establish similar institutions in other towns also, Düsseldorf and perhaps Frankfort being the next places chosen for that purpose. The creation of the academies has from the beginning met with the disapproval of the medical profession for several reasons. First, because the whole question was settled without opportunities for discussing it being given to the official representatives of the profession; and, secondly, because the aims and the work of the academies were undisclosed except for vague rumours which found their way into the newspapers. A further difficulty was that not only the medical profession but also certain political combinations looked askance at the projected institutions, fearing that the Government might then have an opportunity to interfere with the administration of the municipal hospitals and the appointment of the medical officers and might in that way encroach on the powers up to that time exercised exclusively by the local municipal authorities. The apprehensions expressed previously to the establishment of the academies proved to be well founded in the case of the academy at Cologne. Apart from the above-mentioned objections, the medical profession of Cologne felt it to be a special grievance that out-patient departments on a large scale were attached to the academies and took away patients from the local practitioners. Moreover, the fact that several assistantships were reserved for members of the Army Medical Corps was much opposed, the same being the case with certain professors of the neighbouring University of Bonn who were appointed lecturers to the academy and went regularly several times a week to Cologne to deliver lectures and to perform operations. The medical societies of Rhenish Prussia and Westphalia therefore passed resolutions against the academies on several occasions and it was by their representatives that the matter was brought before the meeting of the Practitioners' Association. In order to mitigate this hostility representatives of the Government declared a few days ago at a meeting of the Association for Post-Graduate Study that no other medical academies would be established without the approval of the medical profession and that no further steps would be taken until experience had shown the nature of the results obtained in the academy at Cologne. Notwithstanding these declarations the matter was fully discussed by the Practitioners' Association and the objections alleged against the academy at Cologne were explained by the local representatives. The meeting eventually, by a large majority, adopted a proposition moved by Dr. Mugdan, a member of the German Parliament, to the effect that the academies were not well adapted for the purposes of post-graduate study which had hitherto been undertaken by the spontaneous initiative of the medical profession; that they would prejudice the interests of the medical profession; and that for those reasons the meeting disapproved of any further creation of such academies. The other subjects discussed before the meeting were of minor interest and concerned unqualified practice, sick clubs, and the support of invalid members of the profession and their families.

Professor Koch in South Africa.

A letter written by Professor Koch to a friend and published in the German newspapers gives some particulars of the work on which he is now engaged. He is at present in South Africa and writes from Fringa in Ubebe that he has succeeded in discovering the origin of the tsetse-fly disease from which many cattle die on their way from Ubebe to the coast. He has not only found trypanosomes within the tsetse-fly but has also ascertained that these parasites undergo therein a peculiar development. Professor Koch describes the climate of Ubebe as very healthy and fit for European colonisation. The air is bracing and cool, somewhat suggesting that of the Alps and Norway.

The Effects of Smoke on Firemen.

Some interesting facts are stated in the recently published report of the chief medical officer of the Berlin fire brigade. A great number of the men suffered from the effects of the inhalation of smoke, an affection which is especially prejudicial owing to its long duration, its sequelæ including neurasthenia and cardiac neurosis. Of the men discharged with a retiring allowance one-third suffered from symptoms due to this cause. In addition to the ordinary effects of smoke, fires in chemical works were especially dangerous to the health of the men. In several instances fire broke out in celluloid factories where fumes containing prussic acid developed, leading to syncope and myocarditis among the men. In 1897, when the extensive premises known as the Schering Chemical Works were consumed by fire, serious effects were produced on a large number of men, including the chief officer who recently died from myocarditis.

July 17th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Is Enough being Done for the Sufferings Caused by the Epidemics of Plague in India?

MANY sections of the Anglo-Indian as well as the home press have drawn attention to the apparent want of policy in regard to the plague in India and to the small amount of relief in any form which is offered to the people. The Secretary of State simply reflects the views of the Government of India when he says: "It is not the case that in combating plague the Government of India is without a policy" but it is the Government of India which is blamed for not doing more. It is said that "every practicable measure that gives prospects of success and that is not utterly opposed to the habits and the sentiments of the people has been, and will continue to be, tried." The facts of the case, however, are that at the present moment all the provincial governments in India are carrying out a policy of *laissez-faire*. There are no compulsory removal to hospital, no segregation of "contacts," little or no restriction of movement of patients from one place to another, only in a few out-of-the way districts any attempt at evacuation of infected premises, and no inducements offered to take advantage of the benefits of inoculation. In a few towns the local authorities have done what they could to effect a destruction of rats (but this has never been a Government measure) and hospital treatment has been given to those who seek it. The only measure which can be said to be in force is disinfection and this is carried out in different parts in very various ways and it is very doubtful whether it is of any value at all. The Plague Research Expedition is said to be supplemental to the medical organisation already existing in India and is in no way to supersede it. The Government might well be asked, What research concerning plague is being done in India? The manufacture of the prophylactic cannot be called research and the medical profession would like to know where experiments are being made and who are doing them. Nothing original has been published for years in India and all our latest information concerning plague comes from abroad. The Government in its communications quotes Hong-Kong, Natal, Sydney, and other places where a few cases of plague have been sufficient to base valuable experiments upon and yet India, with 1,000,000 deaths in the year, has contributed nothing. The real truth is that the Government has not chosen the right men or enough men for research work and even with regard to treatment it has been left to individual practioners to purchase serum from Paris. All plague measures have lapsed.

A Parsi General Hospital for Bombay.

For some years past a general hospital for Parsis in Bombay has been talked about and now the scheme has been revived. It is proposed to begin in a modest way by renting a building and converting it and as funds come in to extend or to rebuild it. It is estimated that three lakhs of rupees (£20,000) will be necessary for a commencement and that four lakhs of rupees will be required for an endowment. For this 40 patients could be treated. To equip a hospital for 100 patients would cost eight and a half lakhs of rupees. I have had from time to time to speak favourably of the Parsi Lying-in Hospital in Bombay and I feel sure with the medical reputation of the Parsi physicians and surgeons that a general hospital would prove a success.

The Small-pox Hospital Scandal in Bombay.

The Bombay small-pox hospital scandal has brought an official inquiry and an order for reform. The physician in charge attempted to traverse every item of complaint and practically would not admit that anything was wrong. The acting surgeon-general, however, admits a large number of makeshifts and want of comfort for the sick and the Government has resolved that although the complaints were exaggerated there were defects which might have been prevented by closer supervision and has ordered that the deficiencies in equipment should be immediately supplied. The outbreak of small-pox doubtless proved a great strain on the system of hospital administration and perhaps funds were served out niggardly but the Government resolution and the statement of the officiating surgeon-general that "much could have been done to have made the place neater and more orderly" show that the management of the institution was at fault. There is one point I must allude to with regret. The Government, in publishing the correspondence, has thought fit to omit No. 6 paragraph of the officiating surgeon-general's conclusions. The obvious inference is that it contained an important justification of the complaints which have been made or that it reflected upon the conduct of some particular individual.

June 30th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Bubonic Plague.

THE plague continues in New South Wales, though Dr. J. Ashburton Thompson, President of the Board of Health, is of opinion that the outbreak is nearing its end because no plague-infected rats have been caught in Sydney since May 4th. 53 cases have occurred in New South Wales since March 16th, distributed as follows: Sydney, 16; Newcastle, 12; Clarence River, 12; Lismore, nine; and Ballina, four. The last reported case was at Newcastle. In Queensland several cases have occurred in or near Brisbane and at Ipswich. The New South Wales Government has imposed stringent restrictions on fodder from Queensland. A public meeting was held in Brisbane to object to these restrictions and it urged the Government of Queensland to take action. In consequence of representations on the subject from the Premier of Queensland the Premier of New South Wales agreed that the President of the New South Wales Board of Health should visit Brisbane and discuss the matter with the Queensland authorities.

Dengue in Queensland.

The epidemic of dengue in Queensland is diminishing. The report of the Government statistician stated that there were 63 more deaths in Brisbane last month than in the same month last year and that the epidemic of dengue was largely responsible for the increase, having directly caused 39 and hastened the end of a number of persons suffering from chronic affections.

Cerebro-spinal Meningitis.

Two sporadic cases of cerebro-spinal meningitis have been reported in Victoria, one in Bendigo and one in Castlemaine. The latter proved on investigation to be an ordinary case of traumatic meningitis.

Vital Statistics of New South Wales.

The Government statistician has furnished a preliminary statement of the vital statistics of New South Wales for the year 1904. The increase of population during the year was 29,869, of which 23,307 was due to excess of births over deaths. The deaths during the year numbered 15,360, equivalent to a rate of 10·62 per 1000 of the population, which is 1·07 below the mean rate for the last ten years, and is also the lowest rate on record, this pleasing state of affairs being almost entirely due to the decrease in the number of deaths from diseases to which young children are particularly liable. The number of children under one year of age who died was 3187, equal to 82 per 1000 births. To this the metropolis contributed 1300, or 98 per 1000 births, and the remainder of the State 1887, or 74 per 1000 births. This is the lowest rate of the last ten years and is nearly 25 per cent. below the mean. The effects of illegitimacy on infantile mortality will be seen when it is explained that of children under one year the death-rate for illegitimates is nearly three times larger than that for legitimates.

Hospital Affairs.

The twenty-fifth annual meeting of the supporters of the Sydney Hospital for Children, now called the Royal Alexandra Hospital, was held on May 22nd. The report stated that during the year 619 cases were treated at the institution, with a mortality of 8·8 per cent. In the out-patient department at Valentine-street the work was stated to be increasing rapidly and the time is not far distant when another storey will have to be added to the present building. In this department there were 27,481 cases treated, as compared with 15,638 the previous year. In the diphtheria cottage 154 patients were treated. It is expected that the new building will be completed by the middle of next year. —The committee of the Melbourne Hospital has decided to reopen a ward, once used as a lock ward, for female surgical cases. It was stated that the cost per bed of these additional beds would be only £35, as against £70, the average cost per bed in the institution.—The authorities of the infectious diseases hospital at Melbourne have decided to erect temporary tents to accommodate cases of measles, an epidemic of this disease prevailing just now in Melbourne.

Patent Medicines.

A meeting was recently held in Sydney, convened by the Manufacturing Chemists' and Proprietors' Association, to protest against the revised regulations issued by the New Zealand Government with regard to patent and proprietary medicines. The chairman reviewed the New Zealand legislation affecting manufacturing chemists. An Act of Parliament had been passed that would have a far-reaching effect. Patent and proprietary medicines were dealt with in the Health Act and it contained two clauses to which strong exception was taken. The first was that the formula had to be printed on the bottle of all patent and proprietary medicines; the other was that if the contents contained an infinitesimal portion of poison it had to be labeled accordingly. In consequence of strong protests the change as to the formula had been modified, and instead of being printed on the bottle it was to be lodged with the health department. The manufacturers did not intend to conform to this modified regulation. The formulæ represented the goodwill and firms who had spent thousands of pounds in building up a trade were not going to give up their goodwill in such a light manner. They would withdraw their medicines from New Zealand and their agents in New South Wales who did a large trade would suffer. The following motion was carried:—

> That, as the modified regulations concerning patent medicines in New Zealand will tend to lessen the amount of business done by residents in New South Wales with New Zealand, this meeting protests against the same coming into force.

Assurance on Infantile Lives.

At the annual meeting of the Australian Mutual Provident Society the president stated that the society was hampered in its operations by the fact that assurance on infantile lives was at present illegal within the Commonwealth, although it was the only country in which that disability existed.

The Burial System in New South Wales.

The city coroner for Sydney recently ordered the exhumation of the body of a child and said his "object in holding an inquest in the case was to disclose a serious defect in the burial system of the State." A document, he continued, purporting to be a statement by a midwife that a child has been stillborn, is handed to an undertaker. He buries, as a matter of course, without prior or subsequent registration, and there the matter ends. The law does not require him to verify the document in any particular, and as a matter of practice he does not do so, and for all he knows the statements therein may be absolutely false and have emanated from the most disreputable person in the community. In the case investigated a premature child died soon after birth, the mother gave a certificate that it was stillborn, on which the body was buried. The necropsy showed that the child died from failure of respiration which had not been sufficiently established. A verdict of "Death from natural causes" was returned.

The Value of Alcohol.

Dr. T. H. Fiaschi of Sydney gave evidence before the Tariff Commission recently in the dual capacity of surgeon and *vigneron*. He stated that alcohol was a valuable stimulant and that good Australian wines helped digestion. He would be sorry as a medical man to have to dispense with the use of spirits. The brandy used in disease should be pure, from grape juice. He never prescribed whisky.

A Medical Man charged with Drunkenness.

At the Castlemaine police court recently a middle-aged medical man was charged with being drunk and disorderly. He was discharged on promising the bench to look after himself in future. He explained that he had been kept without sleep and rest from overwork and worry and drink was not altogether responsible for his condition.

June 5th.

Obituary.

MAJOR-GENERAL PETRONIO COSTETTI.

IT is not often that romance and hard work are so intimately blended as in the long professional career of this eminent army surgeon. Born in Bologna in 1819 he had, with his family, to migrate to Florence in 1831—the year in which many of the Bolognesi, the Costettis included, were compromised in the abortive revolution. At Florence he began his medical studies and took his degree, *summâ cum laude*, at Pisa. In 1848—another year of revolution—he served in the *guarde mobile* of Tuscany under the Marchese Niccolino Antinori and saw some sharp fighting at Montanara. We next find him an army surgeon in the Tuscan forces, espousing the Liberal cause and attending the meetings of the party in the Florentine Casa Bartolommei. It was he who, on the historical 25th of April, gave clandestine shelter in his quarters in the fortress Belvedere to the Marchese Ferdinando Bartolommei who wanted to know how far he could count upon the coöperation of the officers in the pacific revolution, two days afterwards successfully consummated. On the eventful morning the Tuscan archduke proceeded from the Pitti Palace to the *fortezza*, thence to give orders to bombard the city, but only to receive from the officers the reply that while ready to protect the lives of their princes, they could not serve the anti-national cause. While the *pourparlers* were in progress young Costetti ordered some green curtains to be taken down from the windows of the hospital in the *fortezza* and adding to them the Tuscan colours, red and white, he hoisted the improvised "tricolor" on the terrace of the *fortezza* before the eyes of the grand duchess who, in needless panic, had taken refuge in that stronghold. It was that banner which announced to the people, assembled not many yards off in the Piazza dell' Indipendenza, that the Tuscan revolution, peaceful and bloodless, was a *fait accompli*.

Dr. Costetti, continuing his career as an army surgeon, with the rank of captain, took part in the campaign against Austria in 1859. Promoted again for distinguished services in 1862 he rose to be major-general and was appointed director-in-chief of the great military hospitals of the now united kingdom. Of late years advancing age had constrained him to give up professional work but he still placed his powers and energies at the disposal of his fellow citizens of Bologna, where he had resumed residence, and as communal councillor and assessor on the board of hygiene he wrought many salutary innovations on the backward equipment of the city, the improved drainage being one of his many contributions to its sanitary provisions. Till within two years ago he was the life and soul of the Spedale della Vita for Bolognese youth and maintained to the last his interest, and where possible his coöperation, in rehabilitating the health conditions of the "mother city of universities." At 86, a youthful spirit, reflected in a fresh, even florid, complexion and a prompt, not to say brisk, address, made him as popular as he was familiar among his compatriots who all showed something of personal loss when on the evening of June 30th he passed peacefully away.

DANIEL MURPHY, M.B., B.CH., B.A.O., R.U.I.

IT was with sincere regret that members of the medical profession in Cork learned that Dr. Daniel Murphy died on July 6th at one of the seaside resorts in the neighbourhood of the city. He received his medical education at the Cork Queen's College and took his degrees at the Royal University in the year 1893. Soon afterwards he was appointed resident physician to the Cork Fever Hospital where he discharged his duties to the entire satisfaction of the committee and patients. Whilst occupying that position he unfortunately suffered from an attack of appendicitis which necessitated operation but apparently he made a good recovery. Afterwards he was appointed house surgeon at the Cork North Infirmary but held the position only a short time, as he was elected to the more important post of physician to the Cork City Dispensary. About this time his health commenced to fail and his medical advisers *recommended him to go to* a sanatorium at Nordrach. Hopes were entertained at first but pulmonary tuberculosis steadily did its work. Feeling that his end was at hand he hurried home and arrived only about a week before death put an end to his sufferings. In the earlier days of "the Battle of the Clubs" Dr. Murphy was a very regular attendant at the meetings of the profession. Though a young man he held and expressed very decided views, but always with the greatest courtesy, and he was rightly regarded by his colleagues as a most loyal and zealous champion of the interests of the profession. The time of the arrival of his funeral in the city was quite uncertain but nevertheless a large number of his medical brethren assembled to pay a last tribute to one who during his all too short life did much to maintain the honour and dignity of the profession and whose amiable and genial disposition had endeared him to all who had the privilege of knowing him.

Medical News.

UNIVERSITY OF LONDON.—At examinations for the D.Sc. degree in the Faculty of Science the following candidates were successful :—

[illegible]: Ida Smedley, Central Technical [illegible] William Horace Sodeau, Davy Faraday [illegible]ivate study.

[illegible] David Ellis, University of Marburg and Lister Institute of Preventive Medicine.

Geology.—External student: Felix Arthur Clair Oswald, B.A., private study.

UNIVERSITY OF EDINBURGH.—The following candidates have passed the examination in clinical medicine for the degree of Doctor of Medicine :—

W. Anderson, H. E. Arbuckle, Mary S. Arbuckle, C. M. Begg, R. A. Belilios, A. J. Brock, Alfred Brown, R. A. Chambers, O. H. Chapman, K. J. S. Clark, H. L. Cumming, Henry Curwen, J. M. Darling, H. S. Davidson, James Davidson, G. A. Davies, J. L. Dick, J. M. Dupont, A. N. Fell, Robert Gibson, Sidney Gilford, Archibald Gillespie, J. M. Graham, W. W. Greer, A. A. Hall, William Hamilton, P. W. Hampton, P. A. Harry, C. H. Houghton, A. M. Hutchison, R. W. Johnstone, I. C. Keir, G. F. S. Landon, A. J. Lewis, James Lochhead, R. J. M'Clelland, J. C. M'Conaghy, J. P. M'Gowan, William M'Lachlan, R. M. White Manwaring, C. A. Mayne, G. R. Mill, L. S. Milne, C. R. P. Mitchell, R. C. Monnington, F. W. More, Ernest Muir, W. H. Nutt, A. H. Pirie, J. J. H. Pirie, H. S. Reid, C. M. Richardson, H. M. Roberts, J. K. A. Robertson, S. M. Ross, D. J. Scott, S. R. Sibbald, A. B. Slater, E. W. Smyth, R. A. L. van Someren, F. S. Stanwell, D. A. Stewart, H. A. Stewart, W. Ward Smith, D. P. D. Willie, and F. A. Willie.

UNIVERSITY OF GLASGOW.—The following candidates have passed the fourth (final) *professional* examination :—

M.B., Ch.B.—Andrew Blair Aitken, §George Allison Allan, William Smith Allan, §Andrew Allison, Andrew Woodroffe Anderson, John Bain, M.A.; Annie Agnes Baird, M.A.; †James Henderson Baird, B.A.; Hugh Barr, Andrew Farm Bell, Ethel Lily Chapman, *Jeannie Thomson Clark, Robert Wilson Dale, M.A.; David William Davidson, Robert Scott Dewar, M.A.; Hugh M'Millan Donaldson, Allan Campbell Douglas, §John Shaw Dunn, M.A.; Eric John Dyke, Hamilton William Dyke, Alexander Burns Ferguson, Mary Theresa Gallagher, William Gilchrist, William Harold Gillatt, William Macmillan Gilmour, Joseph Glaister, Louis Leisler Greig, William Grier, Alexander Roberstson Forrest Hay, James Waugh Hay, Ralph Vincent Howell, John Moonette Huey, James Hunter, Harry Stewart Hutchison, B.Sc.; §Arthur Innes, §William Boyd Jack, Arnold Ernest Jones, Robert Dallas Kennedy, William Love Kirkwood, Alexander Leggat, George Hugh Logan, William Jamieson Logie, John Bertram M'Cabe, Walter George Macdonald, M.A.; Duncan M'Ewan, ‖Hugh Allan Macewen, Robert Maxwell Macfarlane, James Denniston Macfie, Milne M'Intyre, John M'Millan, *Peter Maguire, William Blair Morton Martin, Robert [illegible] Frank Andersor[illegible] Macdonald Munro, Henry Sherwo[illegible], David Penman, Thomson Rankii[illegible] Rankin, Thomas [illegible]n, William Rolland, Alexander Cappie Russell, Frank Donald Scott, Jane Reid Shaw, Lily Smellie, James Alexander Somerville, Arthur Anderson Stewart, Daniel Stewart, §John Logan Stewart, M.A.; William Alexander Stuart, Joseph Roderick Sutherland, Elizabeth Taylor Talbert, §John Taylor, William Lind Walker, M.A.; Robert Wallace, Alexander MacMillan Watson, Archibald Crombie West, and Archibald Simpson Wilson.

Passed with distinction: *In surgery and clinical surgery and practice of medicine and clinical medicine; † in surgery and clinical surgery and midwifery; ‡ in surgery and clinical surgery; § in medicine and clinical medicine.

UNIVERSITY OF ABERDEEN.—The following candidates have been successful in the examinations indicated :—

First Professional Examination.—William Allan, William Balenoch, David M. Baillie, John A. Beattie, William Chapman, J. G. Christie, Robert G. Davidson, Arthur H. Duckett, William Duguid, James Elder, G. C. Grant, John Inkster, Harold G. R. Jamieson, John Johnston, John A. Macarthur Clement R. MacLeod, Norman Macphail, Frank S. Maxwell, G. S. Melvin, Robert J. Merson, Herbert S. Milne, John Mitchell, A. D. Reid, Finlay G. M. Ross, Arthur C. L. Smith, Herbert A. Smith, W. L. Stephen, Francis W. Stuart, John K. Thompson, Charles C. Twort, John T. Watt, Alfred J. Williamson, and Alexander Wilson.

Portion of the First Professional Examination.—Hugh G. Bruce, G. P. Burr, Joseph P. Cameron, Robert M. Chance, James Conner, Ernest W. H. Cruickshank, Henry Duguid, Robert W. Eddie, James R. G. Garbutt, Thomas C. Halley, Robert Kellas, Charles A. Macdonald, Allan J. Macleod, John M'Pherson, A. Mitchell, Robert W. S. Murray, Donald O. Riddel, John Ritchie, Arthur C. M. Savege, G. E. Scroggie, Henry E. Shortt, Colin F. Simpson, Ronald Sinclair, William Smith, and David J. S. Stephen.

Second Professional Examination.—Thomas Clapperton, James A. Davidson, Thomas Donaldson, James Leask, George H. C. Lumsden, William J. Mackintosh, John F. MacLeod, James M. M'Queen, John P. Mitchell, A. E. C. Myers, Patrick Nicol, Alfred J. Pirie, David E. Rae, James Robertson, Robert W. A. Salmond, Arthur Shepherd, Alexander Stewart, John P. Stuart, James E. G. Thomson, Ernest Walker, and William A. Watson.

First Portion of the Second Professional Examination.—Robert W. Chalmers, Stephen Goodbrand, James A. Hendry, William Mearns, James A. Milne, Douglas Porter, George E. Shand, and Walter R. Stephen.

Third Professional Examination.—Francis J. Browne, Theodore Chalmers, George Cooper, James Donaldson, Herbert W. Glashan, Theodore G. Gray, R. M. Gunn, George P. J. Hendry, Adam Johnston, James Laing, James M. MacDonald, John G. M'Gregor, Stanley W. Munro, Alexander Robertson, George L. Ress, Henry Smit, John R. Stewart, and Arthur G. Troup.

Final Professional Examination.—James M. Adams, William Campbell, Alexander M. Donaldson, Robert R. Duncan, Richard Eager, William M. Ferguson, George J. Forgie, Reginald A. Forster, Charles B. Gerrard, George Hall, Alexander W. Laing, James M'Intosh, James Mackenzie, Kenneth Mackinnon, George Milne, John A. Milne, Harry R. Neilson, Paul B. Roth, Robert F. Russell, James Silver, Charles M. Smith, John H. Stephen, Isaac F. B. de Villiers, Frederick H. Welsh, Cristina Wilson, and Douglas A. Wood.

TRINITY COLLEGE, DUBLIN.—At the medical scholarship examination held in Trinity term the following awards were made :—

Anatomy and Institutes of Medicine.—William Pearson, Trinity College Scholarship, and Robert E. Wright, Stewart Scholarship.

Physics, Chemistry, Botany, and Zoology.—Richard P. Hadden, Trinity College Scholarship, and Hugh R. M. Ferguson, Stewart Scholarship.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—At a meeting of the President and Fellows held on July 14th Sir Richard Douglas Powell, Bart., K.C.V.O., M.D., President of the Royal College of Physicians of London, was unanimously elected an Honorary Fellow of the College. At the same meeting Dr. David J. O'Connor was admitted to the Membership of the College and the licence to practice in midwifery was granted to Dr. Stephen Garvin.

INFANTILE MORTALITY.—In order to lessen the heavy infantile mortality which inevitably occurs every summer that is at all hot, the committee of the Hospital for Sick Children, Great Ormond-street, has been accustomed to set aside an extra number of cots in each ward for the reception of children under the age of two years. This year, in addition to the usual number provided in this manner, the committee has decided to open an entire ward for children of an age liable to be attacked by a prevailing summer epidemic. The committee has just received a timely donation of 100 guineas from the Worshipful Company of Mercers.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors was held on July 12th, Mr. Christopher Heath, the President, being in the chair. 12 directors were present. One death and one resignation had occurred among the members since the last court. Three new members were elected. The death of a widow was reported who had been an annuitant of the society since 1886 and had received in grants the sum of £1063 5*s.*; her husband had paid £52 10*s.* in subscriptions. An application for relief had been received from a widow of a deceased member and a grant at the rate of £50 per annum was voted. 53 widows and 16 orphans are now in receipt of relief, the total sum for the half-yearly grants being £1324. The secretary reported that during the past three months 15 letters had been received from widows of medical men soliciting grants and relief; they had to be refused in every case, owing to the fact that their late husbands had not been members of the society. The annual election of the secretary took place and Mr. Edward J. Blackett was appointed to the post.

BRITISH ELECTRO-THERAPEUTIC SOCIETY.—A provincial meeting of this society will be held at Leicester in the library of the Young Men's Christian Association building on Wednesday, Thursday, and Friday, July 26th, 27th, and 28th, at 10 30 A.M. on each day. The programme, which will be found in full in our advertisement columns, includes a discussion on the Present Position of the Treatment of Carcinoma and Sarcoma by Electrical Methods, which will be opened by Dr. H. Lewis Jones; a paper on Neurasthenia by the President, Dr. Donald Baynes, a paper, illustrated with lantern slides, on the X Rays in the Diagnosis of Pulmonary Disease, by Dr. A Stanley Green; and a paper on Stereoscopic Radiography, illustrated with lantern slides, by Mr. A D. Reid Dr Lewis Jones will give a further report on the Milliamperemeter as a Measure of X Ray Production All medical men are invited to attend the meetings and to take part in the discussions and those wishing to read papers or to bring forward communications should address themselves to the honorary secretary, Dr E Reginald Morton, 22, Queen Anne street, Cavendish-square, London, W.

ST. BARTHOLOMEW'S HOSPITAL.—The following is the list of scholarships awarded at the above-mentioned hospital.—The Jeaffreson entrance exhibition in arts, K. C. Bomford The junior entrance scholarships in science, T. S. Lukis and G. R. Lynn (the preliminary scientific exhibition) The senior entrance scholarships in science, E P Cumberbatch and G. Graham The Shuter entrance scholarship in the subjects of the Cambridge second M B. examination, R B Seymour Sewell. *After entrance*—The junior scholarships in chemistry, physics, and histology, T L Bomford and H H. King The junior scholarships in anatomy and biology, A P Fry and R R. Smith The treasurer's prize in practical anatomy, T S Lukis; certificates of proficiency to G. R Lynn, R R Smith, A P. Fry, and A L. Weakley. The Foster prize in senior practical anatomy, T L. Bomford; certificates of proficiency to F. C. Serle, R B Price, and A L. Chandler. The Harvey prize in practical physiology (in memory of Dr. William Harvey, physician to the hospital, the discoverer of the circulation of the blood), A. E. Gow; certificate of proficiency to A. J. S. Fuller The senior scholarships in anatomy, physiology, and chemistry, E M. Woodman. The Wix prize, W. B Grandage. The Hichens prize, F. W. W. Griffin. The Bentley prize for reports of cases in the surgical wards, P L Guiseppi, *prox. accessit*, C A. Stidstone. The Sir George Burrows prize in pathology, J. G. Gibb The Skynner prize in regional and morbid anatomy, including their reference to scarlet fever and rheumatic fever, J G Gibb. The Matthew Duncan prizes, G. C. E. Simpson (medal and first prize) and P. L. Guiseppi and E. H. Shaw (equal, second prize) The Kirkes scholarship and gold medal in clinical medicine, J G. Watkins and J. K. Willis (equal) The Willett medal for operative surgery, H. W. Wilson. The Walsham prize for surgical pathology, E. H Shaw. The Brackenbury scholarship in surgery, H W. Wilson. The Brackenbury scholarship in medicine, C W Hutt. The Lawrence scholarships and gold medal in medicine, founded by the children of the late Sir William Lawrence, surgeon to the Hospital, and father of the late treasurer of the hospital, E. H. Shaw.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

Withdrawal of the Lunacy Bill

THE Government has withdrawn the Lunacy Bill It was "blocked" by Sir JOHN BATTY TUKE, Dr HUTCHINSON, and Sir WALTER FOSTER

The Medical Act (1886) Amendment Bill

This Bill, which was explained in THE LANCET of July 15th, was read a third time in the House of Commons on Tuesday and was sent to the House of Lords

HOUSE OF COMMONS.

FRIDAY, JULY 14TH

The Royal Army Medical Corps (Volunteers)

Sir WALTER FOSTER asked the Secretary of State for War whether, in view of the fact that the Army Council had refused honours in connexion with the South African war to the Royal Army Medical Corps (Volunteers), and that war honours had been granted to numerous volunteer corps which sent contingents to the war, he would state what was the average strength of the contingents sent, and whether, in view of the fact that the eight divisions of Royal Army Medical Corps (Volunteers) in various parts of the country contributed to medical units during the war some 650 officers and men, amounting to two fifths of their strength, the Army Council would reconsider its decision —Mr ARNOLD FORSTER replied It is not the custom to award honours to any but corps of cavalry and infantry, as it is accepted as a fact that all the other branches of the army have contributed in some measure to every honour which is recorded on colour or accoutrement Accordingly, no honours for South Africa were awarded to artillery, engineer, army service, or medical corps, regular or auxiliary.

MONDAY, JULY 17TH

Fees payable to Public Vaccinators

Mr. RUNCIMAN asked the President of the Local Government Board whether he proposed to issue an order giving effect to the recommendations of the departmental committee which sat to consider the fees payable to public vaccinators, and if so, when the order was to be issued —Mr GERALD BALFOUR replied The Local Government Board has not at present arrived at a decision upon the recommendations of the committee Effect could only be partially given to them by means of an order

Guardians and Midwifery Orders

Sir WALTER FOSTER asked the President of the Local Government Board whether he was aware that in some cases difficulty had arisen from poor women being unable to obtain assistance in their confinements in consequence of unregistered midwives having been warned not to attend such cases and no others being available and whether, in these circumstances, he would issue an order pointing out to the boards of guardians the duty of the relieving officers to grant midwifery orders to women destitute of the means of procuring medical attendance —Mr GERALD BALFOUR answered No case of the kind referred to has been brought to my notice If the honourable Member is aware of any such cases and will furnish me with particulars of them I will cause inquiry to be made and will consider what action should be taken

The Medical and Dental Examination of Volunteers

Sir HOWARD VINCENT asked the Secretary of State for War whether having regard to the amount of time that would be required for the medical and dental examination of the volunteer force for active service demanded by his recent circular, and to the paucity of medical officers and the calls upon their professional time, he would authorise a fee of 5s to be paid for such examination or the equivalent honorarium for the examination of a recruit for the Army by a civil practitioner, and further, whether the volunteers themselves would be reimbursed their expenses in travelling to and from the medical and dental centre —Mr ARNOLD FORSTER said There is no reason to suppose that the services will appreciably add to the expenditure of volunteer corps and it is not proposed to grant any special allowance The matter, however, is receiving consideration

TUESDAY, JULY 18TH

The Army and Navy Vaccine Institute.

Mr WEIR asked the Secretary of State for War what quantity of glycerinated calf lymph was produced annually in the Army Vaccine Institute, the number of calves operated on, and whether they were sold for human food or utilised in the military kitchens —Mr ARNOLD FORSTER answered The annual average amount of glycerinated calf lymph produced at the Army and Navy Vaccine Institute is sufficient to vaccinate 125
of calves operated on is 30
examinations are made in
public. They are not utilised in military kitchens

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication*

ANDERSON, J WILLIAM, M B, has been appointed Medical Officer to the Helston (Cornwall) Dispensary

BELL, W BLAIR, M D, B S Lond, M R C S Eng, has been appointed Assistant Gynæcological Surgeon to the Royal Infirmary, Liverpool

BULLEID, EDGAR G, M D, has been appointed Clinical Assistant to the Chelsea Hospital for Women

COOMBS, CAREY, M D, B S Lond, has been appointed Honorary Physician to Out patients, Royal Hospital for Sick Children and Women, Bristol

DANIEL PETER L, F R C S Eng L R C P Lond, has been appointed Assistant Surgeon to Charing Cross Hospital

EASON, H L, M D, M S Lond has been appointed Assistant Ophthalmic Surgeon to Guy's Hospital

FOX, JOHN ALFRED, L R C P Lond, L R C P & S Edin, L F P S Glasg, L S A Lond, has been appointed *pro tem.* Medical Officer for the Marazion District of the Penzance Union

HALL, OCTAVIUS, L R C P & S Edin, L F P S Glasg, D P H R C P S Irel, has been appointed Medical Officer of Health of Devonport

MAYNARD, F P, Major, I M S, has been appointed to act as Ophthalmic Surgeon and Professor of Ophthalmic Surgery in the Medical

MUDD, F B has been appointed House Surgeon

QUIRLEY, J E ST GEORGE, L R C P Irel L S A has been appointed Medical Officer, Obenemasi G M, Ashantee West Africa

RUTHERFORD, has been appointed Medical Officer to Ray Department, St Johns Hospital f

SAULTER, W W, M D, C M, has been appointed Clinical Assistant to the Chelsea Hospital for Women

YOUNG, ROBERT ARTHUR, M D, F R C P Lond, has been appointed Assistant Physician to the Hospital for Consumption and Diseases of the Chest, Brompton

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BATH ROYAL UNITED HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with board, lodging, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Senior House Surgeon.

BIRMINGHAM, GRAVELLY HILL, ASTON UNION WORKHOUSE AND COTTAGE HOMES.—Resident Assistant Medical Officer. Salary £120 per annum, with apartments, rations, and washing.

BRITISH HOSPITAL, Buenos Aires.—House Surgeon, unmarried, for three years' contract. Salary £200, £250, and £300, with board, apartments, &c.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

GROCERS' COMPANY.—Two Scholarships for Original Research in Sanitary Science. Value £300 a year.

HARTSHILL, STOKE-UPON TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with apartments, board, and washing.

HASTINGS, ST. LEONARDS AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon for six months. Honorarium 10 guineas, with residence board, and washing.

KENSINGTON WORKHOUSE AND INFIRMARY, Marloes road, W.—Second Assistant Resident Medical Officer. Salary £80 per annum, with apartments, board, and washing.

KENT AND CANTERBURY HOSPITAL.—Honorary Physician.

LANCASHIRE COUNTY ASYLUM, Winwick, Warrington.—Assistant Medical Officer unmarried. Salary £150 per annum, rising to £350, with apartments, board, attendance, and washing.

LANCASTER, ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, attendance, and washing.

LEEDS, UNIVERSITY OF, FACULTY OF MEDICINE.—Demonstrator of Bacteriology. Salary £150 per annum.

LEICESTER INFIRMARY.—Two Assistant House Surgeons for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

LISCARD, WALLASEY DISPENSARY AND VICTORIA CENTRAL HOSPITAL.—House Surgeon, unmarried. Salary £100, with apartments, board, and service.

MACCLESFIELD, CHESHIRE COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £140, rising to £160, with apartments, board, and washing.

MANCHESTER, VICTORIA UNIVERSITY.—Junior Demonstrator in Physiology. Salary £100, rising to £150 per annum.

METROPOLITAN ASYLUMS BOARD FEVER AND SMALL POX HOSPITALS.—Assistant Medical Officers, unmarried. Salary £180 per annum, rising to £240, with board, lodging, and washing.

MIDDLESEX HOSPITAL, W.—Emden Research Scholarship for Cancer Investigation, tenable for one year. Value £100.

NORTH EASTERN HOSPITAL FOR CHILDREN, Hackney road, E.—Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board and residence.

RAMSGATE GENERAL HOSPITAL AND THE RAMSGATE AND ST. LAWRENCE DISPENSARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, and attendance.

ROXBURGH DISTRICT ASYLUM, Melrose, N B.—Assistant Medical Officer. Salary £140 per annum, with board, rooms, &c.

SHEFFIELD, CHILDREN'S HOSPITAL (OUT-PATIENT DEPARTMENT).—House Surgeon. Salary £70 per annum, with board, lodging, and washing.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—Senior Resident Medical Officer, unmarried. Salary £200 per annum, with board and lodging.

WESTON SUPER MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

YORKSHIRE, WEST RIDING COUNTY COUNCIL.—Assistant to County Medical Officer. Salary £250 per annum, rising to £400.

Births, Marriages, and Deaths.

BIRTHS.

BINGHAM.—On July 15th, at Blackwell, Alfreton, Derbyshire, the wife of Frank M Bingham, M R.C.S., L.R.C P., of a daughter.

BOWDEN.—On July 18th, at Bay View, Bincleaves road, Weymouth, the wife of Fleet-Surgeon Walter Bowden, R N, D.S O., of a daughter.

LENDRUM.—On July 18th, at Manchester street, Werneth, Oldham, the wife of John B Lendrum, M D, of a son.

WICKHAM.—On July 9th, at Chernocke House, Fleet, Hants, the wife of Gilbert H. Wickham, M.B., of a son.

MARRIAGE.

SHAW—WYATT.—On July 12th, at St Mary's Porchester, by the brother of the bride, Arthur Hemans Plows Shaw, M.R C S. Eng, L.R.C P. Lond., to Mabel Agnes, second daughter of the late Francis W. Wyatt and of Mrs. Wyatt, Porchester, Hants

DEATHS.

GABE.—On July 16th, at Westwood, Ashby de la Zouche, Leicestershire, Grace Winifred, the dearly beloved wife of John Rees Gabe, M D, M R.C S Eng, of 16, Mecklenburgh square, London, W C.

ROPER.—At Keys House, Napton, Rugby, on the 18th inst, Henry Roper, B A Cambs, M.B, B.C, aged 37, youngest son of the late F. C S Roper of Palgrave House, Eastbourne. Funeral Friday, 11 A.M, at Napton.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

IMPERTINENT ADVERTISEMENT.

Mr. J. Samuda of Samuda and Co. is an enterprising person who has taken up the fashion of the "follow up" advertisement. The modern advertiser knows well the advantages of "push" and "hustle" and is quite cognisant of that weakness of human nature which makes so many persons unable to resist a proposition which is perpetually placed before them. More than this, if the proposition is worded so that it appears to be a purely personal matter it is still more attractive. We have now before us one of Mr. Samuda's letters, a copy of which has been sent to many medical men and which commences thus —

> "SIR,—
>
> "*Re My Personal and Confidential Proposition.*
>
> "As I cannot trace any reply from you to my letter of June 6th, it occurs to me that you may not have thoroughly understood my proposition."

Mr. Samuda then goes on to say that his directors have determined to make a special offer to medical practitioners distributed throughout the British Isles and the offer is this. Mr. Samuda will supply a medical practitioner with whatever quantity of Avoca cigars No. 6 at 30s. per 100 instead of 40s. All that Mr. Samuda asks in return is that "those gentlemen who accept my offer will, as opportunity arises, recommend the cigars to their friends, provided, of course, that they give positive and absolute satisfaction." But as a further inducement Mr. Samuda proceeds "I have decided to present free with the first 100 you purchase at the reduced A.D. price a real amber solid gold mounted cigar tube in Russian leather case. This, of course, is a personal gift from myself." Now we know nothing whatever of the Avoca cigars which may be good or bad. If they are the former, medical men or any other class would be glad to recommend them without being bribed to do so. If they are the latter, it is a most impertinent proposition for Mr. Samuda to offer bribes in the hope that someone will be weak enough to accept them for doing dirty work. We note a PS. to Mr. Samuda's letter as follows: "All 'Avoca' goods are sent post paid and any not approved after a thorough trial can be returned at my expense." We must confess that we cannot understand what there can be left of a cigar to return after a thorough trial.

SINGULAR DEATH OF A BOY FROM A BLOW.

Major W. B. Arundel, coroner of Pontefract, held an inquest recently at Ackworth upon the body of Arthur Wilson, aged 16 years, a stonemason's apprentice, who met with his death in singular circumstances. The evidence of the boy's friends showed that the deceased and others met a boy named Herbert Gardham, aged 12 years, who had been fishing and who had a rod in his hand. Wilson and Gardham began to quarrel and after Wilson had struck Gardham several times with his fist Gardham retaliated and struck Wilson across the region of the stomach with the fishing rod. Wilson stood for a second with his hand upon his stomach, then dropped to the ground, and after gasping twice died instantaneously. Mr. R. H. Rigby, who was called immediately, said that he tried artificial respiration for an hour but without avail. He made a post-mortem examination of the body and found all the organs healthy and quite normal. There were no external marks beyond a bruise upon the right shin of about the size of a sixpence. None of the abdominal organs were in the least diseased. Witness was of opinion that death was due to syncope consequent upon the blow. He did not think it was due to excitement. A heavy blow such as might have been given from the fishing rod produced would probably cause a reflex action from the nerves of the stomach to the nerves of the heart which would cease beating at once and death would be instantaneous. This would especially be the case if the blow were unexpected and the stomach was full of food as was the case. The deceased in the quarrel might have been expecting a blow from the rod but he could not have been expecting it where he got it or the abdominal walls would have become rigid and probably there would have been no evil result. The jury returned a verdict that death was due to syncope consequent upon the blow given by Gardham who, by misadventure and against his will, had caused the death of Wilson. It has long been known that a blow on the abdomen can cause sudden death and yet no gross lesion may be found on opening the abdomen. In such cases as this the fatal result is evidently occasioned by a reflex nervous chain, the blow on the abdomen occasioning reflexly a cessation of the heart beat. The danger of blows upon the abdomen is fully recognised by the pugilistic prohibition of blows "below the belt," but a very simple experiment will serve to demonstrate clearly the point. If the abdomen of a frog be flicked smartly, as by the handle of a scalpel, the heart will be seen to cease its beats suddenly and to resume them after a pause dependent chiefly on the severity of the blow. It can readily be shown that the efferent channel of this reflex arc is the vagus nerve which carries the inhibitory impulses. A similar nervous nexus exists in higher animals between the afferent nerves of the abdominal walls and viscera and the cardio-inhibitory centre in the medulla oblongata.

"ELOCUTIONARY ACROBATISM."

WE publish the following extraordinary letter because it well illustrates the condition of mental muddle and bewilderment into which many mystical minded people fall when thinking over the achievements of science unaided by a scintilla of scientific knowledge or training.

Montgomerys Hotel, 227, Second st,
San Francisco, Cal., June 29th, 1905.

The London LANCET.

Some time since I read of Commission on Cancer and Prince of Wales Decree therefrom. The following described cure of leprosy, puerperal and typhoid fevers, should efface Cancer and all germ diseases. 1st, What is Electricity? Holy Bible says "His voice is on the waters" Armstrongs Hydro Electric Machine shows escaping steam and water particles are positive, the boiler being negative. Vapor Vesicles ascending in the air explode and collapse into water particles which freeze into ice morsels, abounding above and between the vapor clouds. Holy Bible says "He maketh Darkness His pavilion round about Him dark waters and thick clouds of the skies. .. . He casteth forth His ice like morsels. He sendeth out His Word and Melteth them." The Lightning Flash melting the ice morsels is The Word of God or the Lord Jesus Christ or Angel of Life The Earth is the abode of the dead and is negative. This is Melchizedec or The Angel of death.

The Jews had been carried captive into Babylon until Cyrus turned their captivity. Antiochus warred on them, and Tiberus' beast nature was roused by conspiracy of The Patricians. The Jews feared Tiberius would destroy their city and nation. Thus it was a mistaken idea of Patriotism caused the San Hedrin to buy and Judas to sell Jesus Christ. There is no danger of Nebuchadnezzar, Antiochus, or Tiberius Cæsar carry our pulpit, parliament, and Court Captive, that they should have professing Christiandom disciples of Judas Iscariot in buying and selling Christ, and in changing the Magnetic pole to explode and Conflagrate the Globe.

Gospel Luke v. 12, 13, Matthew viii. 14, 15, Christ cured leprosy and fever by touch. In chronicle Clipping 24th ult. attached, Mrs Williams nearly two months sick of puerperal and typhoid fevers cured by Thunderbolt entering her room. In touching Christ induced a negative charge into the leper and fever sick which destroyed the germs as did the Thunder Bolt to Mrs. Williams 2nd Kings v., Naaman's leprosy cured by ℞ from Christ through Holy Prophet.

The Valley of Jordan is considerably below Sea Level the air is denser and richer in oxygen. The River falls greatly in its tortuous course. The friction must greatly negatively electrify, and the magnetic Oxygen or Ozone must by churning saturate water and mud. This gives therapeutic force to Jordan which Abana and pharpar lack As in Luke v. 12, 13, Matthew viii. 14, 15, and Mrs. Williams quoted the curative agent of Naaman is Negative Electricity. By the context Naamans case had advanced to ulceration which the ozonized water and mud cured. Sterilized mud is more congenial soil for bacilli than the animal body.

Revelations xxii. 2, 3. The Tree of Life leaves of which are for healing of the nations may be Paw Paw to efface all germ diseases from man and beast by digesting the Germs or microbes.

Thus may leprosy, plague, tuberculosis, cancer, and all germ diseases be eradicated until The Law of Life Testimony and Gospel be learned and obeyed by Clergy, people and rulers, rather than wicked Elocutionary acrobatism Revelations xvi. 13.

Very respectfully,
MICHAEL CAHILL

NOTE.—Radium seems to be a negative storage battery through which the positive vapor or magnetic oxygen induces a weak current not powerful enough to cure

HEALTHY COSTUME FOR GIRLS.

To the Editors of THE LANCET.

SIRS,—I have a daughter between 14 and 15 years of age and do not want her to wear corsets. I should be obliged if any of your readers would tell me where I could get information as to the best (healthiest) way of clothing her.

I am, Sirs, yours faithfully,
B A.

July 17th, 1905.

THE LATEST QUACKERY.

South Africa, if we may judge from the advertisements which appear in the local newspapers, is an even happier hunting ground for quacks than are these islands The latest dodge is a nostrum called "Sacco" which is "run" by Stevens and Co, whose headquarters are in St George's street, Cape Town. "Though it has been in existence scarcely a year," to quote the circular, there is nothing particularly new about it. We learn that "about seven years ago an Englishman travelling in a remote part of South Africa became cognisant of some remarkable cures effected by a native in cases of consumption and kindred diseases which affect more particularly the pulmonary organs. The successful treatment by what appeared primitive means so impressed the Englishman (who is now one of the proprietors of Sacco) that he was constrained to test its curative powers" Then follow the usual statements about the wonderful efficacy of "Sacco" and remarks about the conscientious beliefs of the proprietors We have heard all this before Sometimes the drug has been discovered in North America among the Red Indians, sometimes, as in the case of "Corazza," in Mexico and we fully expect one day to see some enterprising quack bring out a remedy, the receipt for which has been discovered on the top of Ararat, having been left behind by Noah. The usual testimonials are attached and also, as usual, we cannot find any of the London addresses given in the Post Office Directory. According to the conscientious proprietors "*This* preparation has never been known to fail to *Perfectly cure* any case of *Consumption, Hæmorrhage, or Asthma*. .. .. We claim that if a person has half of his or her lungs left we can effect a permanent cure, providing, of course, the patient does his or her share by keeping to our directions" We have no hesitation in saying that the statements in this circular are wicked perversions of the truth and Stevens and Co have had the impertinence to send it to sundry medical men, asking them to give the nostrum a trial. It is cruel and immoral to raise false hopes in the minds of sufferers from tuberculosis. Stevens and Co, however, are no worse than hundred of other quacks and we are still waiting patiently for the law to be amended, so that such heartless swindles may be put an end to

A NURSE INSPECTOR OF SCHOOLS.

To the Editors of THE LANCET.

SIRS,—I call your attention to the following paragraph from to-day's *Western Mail* (Cardiff) —

> "A few months ago the executive of the Barry District Nursing Association placed at the disposal of the local education authority for a period the services of a nurse to visit periodically the schools of the town and examine the children for minor injuries and ailments It is understood that a recommendation will now be made to the education authority to appoint a schools nurse at a salary of £80 a year, such appointment to be made being and under the control (like the members of the teaching staff) of the education authority and not the Nursing Association."

This is putting the nurse in the position of a qualified medical practitioner and placing a premium on unqualified practice If a nurse will "visit . . and examine for minor injuries and ailments" she will also be emboldened to prescribe and dispense, &c. So many are the irregular rivals to medicine that many medical men must be sorry that they went to the trouble and expense of getting qualified.

I am, Sirs, yours faithfully,
July 17th, 1905. L R C S, &c.

⁂ The Barry District Nursing Association does not instruct the nurse to treat the cases; presumably she is only to inspect the children with the view of preventing the existence of communicable diseases or physical defects being overlooked The master or mistress of the school ought to be able to do some of this work. The pathological condition being detected, the medical man ought to be summoned All this work could be done by medical men if schools were carefully grouped for inspection and the medical inspectors were properly paid —ED L

A GUIDE TO LEICESTER.

WE have received a copy of a Guide to Leicester and Neighbourhood, by Mr G. Clarke Nuttall, B.Sc, and published by Mr Edward Sharlow, St. Martin's, Leicester. A copy of this guide is to be presented to every member of the British Medical Association on registering his name Leicester has a most interesting history and there are apparently a good many of its old buildings left The guide will certainly be useful to visitors.

FLANNELETTE.

"A SURGEON" writes —

> Some months back you published a correspondence and added your own observations on the various processes for reducing or preventing the inflammability of flannelette and thus the number of severe burns arising from this cause. I send herewith a packet of a powder called "Boram", it is claimed that flannelette dipped in a solution of this is rendered fire resisting I send also two pieces of a cheap flannelette costing 2¾d. a yard, one piece as bought, the other treated with "Boram" You will see that the latter will not burn at all it merely chars It is in this respect better than flannel itself, and, in fact, perfect
>
> As to cost, "Boram" is sold retail in packets costing 1s 6d. each The contents are to be dissolved in a gallon of water and the solution thus made will render fire resisting 12 square yards of canvas or 20 square yards of muslin, therefore it costs somewhere about 1*d* a yard to fireproof flannelette Unfortunately, the salt being soluble, it is necessary to redip the garment each time it is washed, it is, however, a great gain that, though not without trouble and expense, flannelette can be rendered quite incombustible

We have examined a specimen of "Boram" and our analysis easily revealed its composition We are able to confirm what "A Surgeon says in regard to a solution of this salt rendering flannelette practically non inflammable The salt is prepared by the Fire Resisting Corporation, Limited, of Townmead road, Fulham, London, S W.

THE UNQUALIFIED ASSISTANT.

To the Editors of THE LANCET.

SIRS,—Supposing a case like the following occurred, what is your opinion? Also that of your readers? A practitioner employs a lady housekeeper who also acts as assistant, surgery attendant, and collector She receives patients and prescribes for them, and is preferred in many cases to the medical man Under the new Midwives Act she has obtained a certificate as a midwife In the urgery is exhibited a large card as follows:—"Midwifery attended y Miss ——, L.A., &c. Fee 10/6."

I am, Sirs, yours faithfully,
A STRUGGLING PRACTITIONER.

*** We have frequently pointed out that, to some extent, the Midwives Act legitimises for women the post of unqualified assistants, a post which the General Medical Council has decided to suppress in respect of men. As a certificated midwife Miss ——'s duties are defined (more or less) by law and if she goes outside them she can be reported to the Midwives Board. As a surgery attendant and dispenser she can assist her employer as long as she acts under his supervision, but if, being unqualified, she visits patients independently and prescribes for them her employer can be punished by the General Medical Council—ED. L.

A. B. C.—We have seen that paragraph about the hospital dance, the kind hearted constable, and the titled surgeon many times before. Its details are apt to vary, but the constable is always kind hearted and the surgeon is always titled, the adjectives in some way or other being supposed to add to the horror of the yarn. That "the facts are too circumstantial to be disputed" is the most silly assertion of all. Nothing less circumstantial has ever gone the rounds of a credulous press.

Anon.—Will our anonymous correspondent who sent us a bill from Morecambe communicate with us (giving his name). We cannot comment upon the matter unless we know what actually happened. The bill only states what is going to happen.

Inquirens.—We have no information to give on the matter of the study of medical electricity apart from study for the medical profession.

R. P.—The man is only the usual mendacious quack.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

DAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.) Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.).

ESDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

EDNESDAY (26th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.) Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.).

HURSDAY (27th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.).

FRIDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (29th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.)

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1905, which was completed with the issue of June 24th, and the Title-page to the Volume, were given in THE LANCET of July 1st.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1905 are now ready. Bound in cloth, gilt lettered, price 18*s*., carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s*., by post 2*s*. 3*d*.

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
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Three Months	0 8 2	Three Months	0 8 8

METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

THE LANCET Office, July 20th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind	Rainfall	Solar Radia in Vacuo.	Maximum Temp Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
July 14	30 19	W.	...	131	86	65	66	71	Fine
" 15	30 06	W.	..	117	79	65	64	67	Overcast
" 16	29 96	S.W.	0·10	115	68	59	57	60	Cloudy
" 17	30 01	W.	0 01	122	74	57	60	65	Fine
" 18	29 95	S.W.	...	125	74	60	60	62	Overcast
" 19	30 25	N.E.	...	122	75	58	58	65	Fine
" 20	30 15	S.W.	...	124	79	57	59	66	Fine

During the week marked copies of the following newspapers have been received:—*Yorkshire Post, Daily Chronicle, Morning Leader, Yorkshire Daily Observer, Liverpool Courier, Southern Press (Scotland), Globe, Daily News, Westminster Gazette, Irish Times, Spectator, Essex Observer, Literary Digest (New York), Scientific American, South Wales Daily Echo, Cambridge Chronicle, Eastern Daily Press, Western Mail (Cardiff), Clinical Journal, Morning Advertiser, &c.*

Communications, Letters, &c., have been received from—

A.—Mr. L. Arlidge, Brixham; Arran, Earl of, Lond.; Dr. T. D. Acland, Lond.; *Messrs. S. Allsopp* and Sons, Burton-on-Trent; Messrs. Allen and Hanburys, Lond; Aston Union, Clerk of; Mr. A. R. Anderson, *Nottingham.*

B.—Mr. Titus Barham, Wembley; Berkefeld Filter Co., Lond.; Mr. H. W. Bayly, Shanklin, Isle of Wight; Birkenhead Borough Hospital, Secretary of; Mr. A. A. Bradburne, Southport; Dr. J. S. Bigg, Lond.; Messrs. Baiss Bros and Stevenson, Lond.; Mr. J. W. Benson, Lond.; Bayer Co., Lond.; The F. Boger Publishing Co., New York; Mr. T. Bell, Lancaster; Mr. W. D. Butcher, Lond.; Mr. J. F. N. Briscoe, Alton.

C.—Mr. Rupert Collins, Dublin; Messrs. Cassell and Co., Lond.; Central Motor Car Co., Lond.; Mr. J. S. Cotman, Lond.; Dr. G. A. Crace-Calvert, Ruthin; Cameron Hospital, West Hartlepool, *House Surgeon of;* Carlisle Dispensary, Secretary of; Dr. L. P. Colat, Tamatave, Madagascar; Dr Malcolm Campbell, *Edinburgh;* Mr. F. W. Clarke, Chorlton-cum-Hardy.

D.—Mr. Thomas Dixon, Lond.; Dr. J. A. Dickie, Shipley; Messrs. Duncan, Flockhart, and Co., Edinburgh; Messrs. Davies and Co., Lond.

E.—Mr. J. R. *Evans, Narberth;* Mr. T. Edwards, Wakefield; Mr. C. Elphick, Biggleswade.

F.—Dr. W. R. Fox, Melbourne; Mr. A. J. Fairlie-Clarke, York.

G.—Dr. A. *Greenwood, Blackburn;* Mr. J. Greenhalgh, Atherton; Mr. Kenneth Goadby, Lond.; *Dr. P.* Grassett, Tours; Messrs. W. *Green and Son, Edinburgh.*

H.—Mr. G. H. Hunt, Hanley; Dr. P. J. Hay, Birmingham; Dr. W. J. Howarth, Ramsey; Mr. John R. Harper, Barnstaple; Mr. W. T. Hellier, St. Albans; The Hydro, Clevedon, Secretary of; Mr. W S Hendry, Gourock; Mr. J. Hall Edwards, Birmingham; Mr. W. B. Harley, Hove; Messrs. Haar and Steinert, Paris; Mr. F. Harrison, Sheffield.

I.—International Sleeping Car Co., Lond., Manager of.

J.—Dr. *R. Jones, Claybury;* Dr. C. H. Johnson, Berwick, U.S.A.; Messrs. T. C. and E. C. Jack, Edinburgh; Dr. H. M. Joseph, Lond.

K.—*Dr.* A. E. Kennedy, Lond.; *Dr.* C. F. Knight, Edinburgh; *Key Surgical Co., Lond.;* Messrs. R. A. Knight and Co., *Lond.*

L.—Mr. H. A. Lunn, Edinburgh; Mr. J. W. Lees, Macclesfield; Messrs. Loescher and Co., Rome; *Leeds University, Registrar of;* Dr. A. Love, Glasgow.

M.—Dr. F. Meyer, Melbourne; Dr. J. *D.* Malcolm, Lond.; Mr. E. W. Marshall, Manchester; Mr. L. J. P. Mordaunt, Lond.; Mr. E. Moffatt, Chatham; Messrs. Maythorn and Son, Biggleswade; Maltine Manufacturing Co., Lond.; Dr. C. F. Marshall, Birmingham; Mr. E. D Marriott, Nottingham; *Dr.* P. McBride, Edinburgh; Dr. B. G. Moynihan, Leeds; Messrs. C. Mitchell and Co., Lond.

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Presidential Address

ON

MEDICAL EDUCATION—PAST, PRESENT, AND FUTURE.

Delivered at the Seventy-third Annual Meeting of the British Medical Association on July 25th, 1905,

BY GEORGE COOPER FRANKLIN, F.R.C.S. ENG.,
HONORARY SURGEON TO THE LEICESTER INFIRMARY.

[AFTER the usual words of welcome to the Association, and having expressed his thanks for the honour which had been accorded to him in his election as President, Mr. Franklin proceeded to give a short *résumé* of the history of Leicester. After mentioning the names of Goulston, the founder of the Goulstonian lectures; Cheselden, the famous surgeon to St. Thomas's Hospital; Halford, for 24 years President of the Royal College of Physicians of London; Benjamin Ward Richardson; and Tom Paget, of the Leicester Infirmary, the first provincial surgeon to obtain a seat on the Council of the Royal College of Surgeons of England, all of whom were Leicestershire men, the President passed to the main subject of his address. He said:—

I now propose, ladies and gentlemen, having referred to local matters in connexion with the medical profession of, I hope, some interest, to venture on some remarks with regard to the existing regulations by the State of the education of those who desire to become members of our profession. In doing so, in considering how the education is regulated to-day, I must, as a necessary preliminary, consider to some extent the regulations of the past, and then we can ask if the improvements of to-day are as great as they should be, if the regulations are producing the best possible results; if, in fact, the average student, when he or she leaves the medical school or hospital legally qualified, is as well equipped as possible for the responsibilities of the future. That this is a tremendous problem we recognise at once, when we consider for one moment what it means to a country, or rather to a series of countless communities, to have among them thoroughly well educated representatives of the medical profession. As it is absolutely impossible to suppose that a civilised community could exist without such representatives it follows, surely, that those communities in which are found the most highly educated members of the medical profession have an enormous advantage as compared with others. It seems to me that the importance of the education of the medical man or woman of to-day is greater than ever it was and the responsibilities of those who are engaged in teaching are also greater than ever.

THE APOTHECARIES ACT.

Now, as far back as 1722 there was an Act which empowered the Apothecaries' Company to visit the shops of all apothecaries practising in London and to destroy such drugs as they found unfit for use. In 1748 great additional powers were given to the Company by an Act authorising them to appoint a board of ten examiners, without whose licence no persons should be allowed to dispense medicines in London or within a circuit of seven miles round it. The celebrated Apothecaries Act of 1815 appears to have been the first Act to legalise medical practice and penalise unqualified practice and this was really the start in this country of any regulations recognised by the State with regard to the education of apothecaries, the then general practitioners. The General Medical Council did not come into existence until 1858, the date of the first Medical Act. Between 1815 and 1858 there seems to have been a sort of "hiatus," but two important events helped towards the first Medical Act—viz., the establishment of THE LANCET in 1823 and the founding of our Association in 1832 by Sir Charles Hastings of Worcester under the name of "The Provincial Medical and Surgical Association."

It will be interesting to refer to two or three clauses of the Act of 1815 before we proceed further—to Clause III. for example. The Masters and Wardens were empowered to enter shops of apothecaries and to examine drugs:—

> They shall or may search, survey, prove, and determine, if the edicines, simple, or compound, wares, drugs, &c., and any thing or things whatsoever therein contained and belonging to the art or mystery of apothecaries aforesaid, be wholesome, meet, and fit for the fare, health, and ease of His Majesty's subjects.

Again, in Clause VII. we read:—

> Whereas much mischief and inconvenience has arisen, from great numbers of persons in many parts of England and Wales exercising the functions of an apothecary, who are wholly ignorant and utterly incompetent to the exercise of such functions whereby the health and lives of the community are greatly endangered, and it is become necessary that provision should be made for remedying such evils, be it, therefore, further enacted that the said Master, Wardens, and Society of the Art and Mystery of Apothecaries of the City of London shall be empowered for ever to superintend the provisions of this Act and carry the several regulations and provisions thereof in relation to the several persons practising the art or mystery or profession of an apothecary throughout England and Wales into full execution.

Then follow clauses to appoint examiners and to appoint a chairman, all to hold office for one year, but to be eligible for re-election. Clause XIV., "To prevent any person or persons from practising as an apothecary without being properly qualified to practise as such," enacts that they should be examined by the court of examiners and receive certificates, provided always that no person shall be admitted to such examination until he shall have attained the full age of 21 years, and in Clause XV. it is enacted that such person must have served a five years' apprenticeship. Clause XX. provides for a penalty for practising without a certificate.

THE MEDICAL ACT OF 1858.

Coming now to the first Medical Act of 1858 we find it established a Council to be styled "The General Council of Medical Education and Registration of the United Kingdom, with branch councils for England, Scotland, and Ireland, consisting of representatives from the universities and corporations." The chief achievements of the Council have been the establishment of a preliminary examination and inducing the corporations to leave it to the national educational bodies, the visitations of examinations, and the publication of the Medical Register and of the Pharmacopœia. It has had some faults of course; the chief has been its want of sympathy with the great body of the profession, especially with regard to the representation of the profession in the Council.

A great defect of the Act of 1858 was that it permitted the separate registration of purely medical and purely surgical diplomas and therefore diplomas which did not guarantee an adequate acquaintance with all the subjects of professional examination were used by their holders to cover the whole ground of medical, surgical, and obstetric practice. In May, 1869, Mr. (afterwards Sir) John Simon said that persons practising on half qualifications were to be counted by thousands in the United Kingdom. Between 1858 and 188 nearly 20 Bills were introduced to remedy these main defects. In 1870 Lord Ripon's Bill was brought in to establish a simple code of regulations common to all the examining boards of the United Kingdom, sufficient and uniform tests of qualification as a condition of entry upon the Medical Register, a more or less consolidated examining authority, and more effectual provisions to restrain quacks. The principle was accepted by the Council but the Bill was wrecked by the opposition of the British Medical Association on the ground that no provision was made for the representation of the profession in the Council. The Government Bill of 1878 was a great improvement; among other things, it required that all persons desiring to be placed on the Medical Register should have both a medical and surgical qualification and it contained provisions for amending the 40th Clause—"Suppression of Unqualified Quacks"—and for the admission of women; o examination. It also provided for the examination of, and registration of, dentists and midwives and amended the law relating to certificates of lunacy.

THE MEDICAL ACT OF 1886.

The celebrated Act of 1886 removed two conspicuous blots in the organisation of our profession. It made it necessary for every medical man to be qualified completely—*that is*, in the three main branches of practice—medicine, surgery, and obstetrics—before he can be placed on the Medical Register, and it has conferred representation on the great body of the profession.

MEDICAL EDUCATION IN LONDON 40 YEARS AGO.

In the "sixties" London students were gradually waking up to the fact that, although the College and Hall gave them the two qualifications which entitled them to be placed on the Medical Register, the diplomas did not give them the legal right to assume the title of "Doctor." Many men—hard-working and possibly ambitious—when coming up from the county to the hospital board of the University of London for the first time. Anyway, the University of London gave a degree, and why should they not go in for it? To show you how ill adapted the teaching was in those days in the London medical schools for those students who desired to graduate in London I will quote from a letter addressed in December, 1879, to the Chancellor of the University by a distinguished graduate, my old friend and teacher, Dr. J. S. Bristowe.

> Only a small minority of the students entering the medical profession in England offer themselves as candidates at the matriculation examination. Nearly 50 per cent. fail; of those 50 per cent. fail at the preliminary scientific examination. Of those who have passed this examination 35 per cent. fail at the first M.B. and of those who finally become candidates for the M.B. degree 19 per cent. are rejected. The collective result is that not 10 per cent. of the young men who enter at the lowest series of the examinations emerge successful at the last and that at least 72 per cent. are rejected at the matriculation and preliminary scientific examinations.

Dr. Bristowe observes that at that time there were 534 men living who held a medical degree in the University of London out of a total of nearly 25,000 practitioners holding British qualifications. The practical result of this is well known; scores of men left the London hospitals before their time was completed to obtain degrees in Scotland, Ireland, or elsewhere. In short, the system of education 40 years ago in the London medical schools, as far as there was any system, was designed to enable men to qualify at the College and Hall or at the two Colleges as soon as possible—this could then be done in four years or just under—and not to encourage work for the University of London degree.

Of course, I am well aware that some very good work was done, more especially in medicine and surgery; but in obstetrics and gynæcology the practice and instruction were alike insufficient. It must be remembered when referring to the medical education of 40 years ago that those were the days of the linseed-meal poultice (in the surgical wards), antiseptics were just beginning to be used, the clinical thermometer appeared on the scene, together with the laryngoscope and the ophthalmoscope. The clinical teaching was then, I suppose, nothing like so systematic as it is now, but some of the lecturing was most excellent. I might refer to the lecturing of the late Sir John Simon, then Mr. Simon, on pathology at my old school of St. Thomas's. He used to lecture to, perhaps, hardly a score of students. It would have been of immense advantage if he could have lectured to every medical student in London; a man of his learning and intellect was, in a way, almost wasted down in the old Surrey Gardens, but there was no attempt at concentration of professional studies in those days. If I were asked, In what respect do you think the medical education of 40 years ago was most deficient? I should without hesitation say it was deficient in three particulars: (1) preliminary examinations; (2) obstetric medicine; and (3) the administration of anæsthetics; and if I were asked to-day the same question I should give precisely the same answer.

MEDICAL EDUCATION OF TO-DAY.

Now I have referred to the regulations of the past, I will briefly consider those of to-day and note the improvements that have been effected. I may then, perhaps, venture to forecast what further advances may be made not only in the interest of the medical student but also to the advantage of the whole community. By the regulations of the General Medical Council no person can be registered as a medical or dental student who has not attained the age of 16 years; some, a great many, think the age ought to be 17 years. I am one of those. Further, no person can be allowed to register unless he or she shall have previously passed a recognised preliminary examination in the subjects of general education. The period of professional study between the date of registration as a medical student and the date of the final examination for any diploma which entitles its holder to be registered under the Medical Act must be a period of *bonâ fide* study during not less than five years. Now this period of five years is a minimum time and it obtains whether the curriculum be passed in England, Scotland, or Ireland, and whether the student is going in for a university degree or a college diploma; as a rule, of course the university man takes a longer time. The universities and medical corporations seem now to work on the same lines though differing in the severity of examinational tests—lines laid down by the General Medical Council. For instance, the curriculum and examination of the Conjoint Board have now been brought much more into line with those of the University of London and other universities than was formerly the case. This, of course, is so much to the good.

Now I will suppose a young friend (to start well, we will hope he has passed the matriculation examination of the University of London) has registered at the age of 16 or 17 years. What has he to do by the time he is 21 or 22 years of age? He has a journey of three stages: (1) elementary science, including chemistry, physics, elementary biology, and practical pharmacy; (2) anatomy and physiology; and (3) medicine, surgery, and obstetrics. If he passes his first two examinations all right he has two and a half to three years left for the study of the more purely medical subjects and it is perfectly appalling to think of the lectures and other work which the student must attend during the last period of two and a half or three years. I am persuaded that the laity has not the remotest idea of the number of subjects that the medical student has to tackle. Speaking generally, he has to attend lectures in medicine six months, surgery six months, obstetrics three months, pathology, bacteriology, pharmacology, and therapeutics three months, forensic medicine, public health, together with systematic practical instruction in medicine, obstetrics, and surgery; operations on the dead body, attendance on the practice of a recognised hospital for two winter and two summer sessions, post-mortem demonstrations for 12 months and clinical lectures on medicine and surgery. He must also attend clinical instructions in ophthalmic surgery, insanity, and diseases of women, and must act as clinical clerk and surgical dresser for not less than six months each and attend 20 obstetric cases. Instruction in vaccination and in the administration of anæsthetics and attendance at a fever hospital are also required.

I have said that the laity has no idea of the amount or of the variety of subjects to be studied. Another point that cannot be grasped or understood is why when our young friend has passed his three examinations, has done all his work, and has obtained his diploma from the Conjoint Board, he has not earned the legal title of "Doctor." I do not propose to discuss this question now. I only remark in passing that it seems to me that the British public will decide it—in fact, are deciding it now, for as a matter of convenience, if for nothing else, the title of "Doctor" is given to the medical practitioner nowadays much more generally than formerly, in fact, almost universally. Even in our journal I notice that the "Conjoint man" is styled "Doctor." I think, then, it will be obvious to everyone that great improvements have been made within the last two decades particularly, and that the general standard of medical education has risen considerably notwithstanding the fact that too much of the average student's time is spent on biological and chemical studies, and that too little time is given to ward work. I have ventured to point out what I consider to have been the main deficiencies of the past. I mentioned that in three particulars I thought the medical education was deficient—namely, (1) preliminary examination; (2) obstetric medicine; and (3) the administration of anæsthetics; and now, notwithstanding the great general advance all along the line, there is a pressing necessity for much improvement in these three respects.

1. *Preliminary education.*—At the root of all progress lies the improvement in the general and professional culture of those about to enter the medical profession. Can anyone deny that some of the preliminary examinations of to-day are too easy? They are not sufficiently stringent to secure a proper standard of culture. I do not think that any student should be put on the Medical Register unless he has passed the matriculation examination of the University of London, or one of equal stringency. In the good time coming, when all medical students will be undergraduates of a university, and will be obliged to take a degree in arts, this question of preliminary examinations will be solved; until then we must do the best we can. I think the advantages of a good classical education early, to a man entering our profession, cannot be over-rated. Nothing will, or can, make up for it; there would not be so many candidates deficient in ordinary spelling and composition if there had been a good classical education. To my mind there is nothing really superior to the old-fashioned Latin and Greek training but it seems hopeless to insist nowadays upon the retention of Greek. I think it is 25 or 30 years ago since, in the matriculation examination of the University of London, students were allowed to take up German instead of Greek. I venture to think that, as far as medical students are concerned, that was a retrograde step. I do not envy the student sitting down to learn

his anatomy who has not learnt even a little Latin and Greek; his Gray's Anatomy, perchance, in front of him, his Latin dictionary on one side, and his Greek lexicon on the other. The student, too, must not begin to specialise too soon, he wants a liberal education, an education for its own sake. This goes when the technical education begins—that is, when he leaves school or college to learn to be a "doctor." I was most interested to observe that about two months ago the Lord Chancellor, as warden of the Guild of Undergraduates of the University of Birmingham, when delivering his address, said he thought there was a grievous omission in that University—there was no chair of Greek—and he hoped they would clamour for such a chair and that Birmingham munificence would be effectual in procuring it.

2. *Obstetric medicine.*—With regard to the education in obstetric medicine and surgery, I would insist that its importance is not appreciated as it should be. This is a subject of which a very practical view should be taken. It is supposed that out of ten newly qualified medical men who leave hospital some seven or eight of them go into what is called, for want of a better name, "general practice"—become general practitioners. Now, what is the basis of general practice? Anyway, in a practitioner's early years it is obstetrics. The young practitioner who has his living to get is not long in finding this out and in finding out, too, that when he has to rely on his own knowledge and judgment he does not feel himself so well equipped as he thought he was. The remedy for this is obvious—much more practical work before leaving hospital. It is trifling with the subject for it to be deemed sufficient that a man should have attended not less than 20 obstetric cases in order to be signed up.

3. *Anæsthetics.*—I have a word to say about anæsthetics. The administration of an anæsthetic is a duty which may devolve on any practitioner at any moment almost. He should therefore feel himself quite capable to undertake this duty. I believe that good instruction is given at the medical schools in this subject at the present day. Anyway, there is a vast improvement in this respect as compared with what obtained in my student days. Then, indeed, unless a man was sufficiently fortunate to obtain his house surgeoncy he had no opportunity for any practical experience with regard to the administration of anæsthetics. For many years I have had unusual opportunities of observing the capacities of men, freshly qualified, who have come from various schools all over the country to fill the resident appointment at our infirmary and whose duties have included the administration of anæsthetics. There can be no doubt that in recent years men have been better up to this particular work. All the same I think that at the average hospital medical school the importance of a thoroughly good education in this department is not sufficiently insisted upon.

MEDICAL EDUCATION IN THE FUTURE.

Now that I have had my grumble at what I have ventured to call "deficiencies" in the medical education, both of the past and of the present day, I feel myself at liberty to say that though the average young medical practitioner in this country is a better educated man than he ever was, there is still room for improvement. But difficulties arise at once. If there be more subjects to be studied or subjects to be more thoroughly studied, how in the world is the time to be found? I have alluded to the tremendous amount of work the student has to get through, particularly in his last three years; is it right that it should be so, and is it possible that he can leave out some of the prescribed work and give more time to other subjects so as to learn them more thoroughly? The histology of to-day, together with physiology, so elaborated that its study must take up a much larger proportion of time than formerly, are subjects necessary enough, but are they not being pushed too far? The future practitioner is not expected to be a professor of physiology any more than every student can be a scientific physiologist. Just so with regard to bacteriology, which has become so much of a science that it might well in itself constitute a study for a lifetime. It must be studied, but its teaching, like that of histology and physiology, should be adapted more precisely to the actual needs of the practical physician or surgeon of to-morrow.

Perhaps the most startling fact of to-day in connexion with medical education is the apparently inevitable development of the specialist. The Medical Act of 1886, to which I have already alluded, provided that no one should be admitted to the Medical Register who has not been examined and is not qualified in medicine, surgery, and obstetrics. The so-called general practitioner is one who practises these three, many add pharmacy, and thus practise as apothecaries. Whatever line a man takes eventually he must have qualified as a general practitioner. One might be inclined to ask whether the general practitioner will, as such, continue to exist when one contemplates for a moment the subdivisions of work that are undertaken by the specialist. Thus we have not only special men for the eye, ear, spine, skin, throat, and so on, but for almost every organ in the body. How has this condition of things arisen? I think I can assign two main reasons: (1) the severe competition which awaits a well-qualified man when he is about to start in practice; and (2), though perhaps this ought to come first, the demand of the public. The public do not believe in universalism as applied to the practice of medicine but they pin their faith to some specialist who has taken up some particular ailment or organ of the body. An old fellow student of mine, now holding a high position as a consulting physician in London, told me that a lady of distinction brought her child for him to see because she had been given to understand that he was a specialist for children between the ages of seven and eight years and her child was just seven and a half years old! Seriously speaking, this condition of things has to be recognised: it has come to stay, whether for the greatest good of the greatest number is more than I can say; I can only hope so.

Of course, we all agree that some special departments in our profession are absolutely necessary; take, for example, that of public health. Now the supreme authority in sanitary matters in this country is the Local Government Board, with its chief medical officer and its medical and other inspectors; and all urban and rural sanitary authorities are required to appoint medical officers of health having registered qualifications in medicine and surgery. The duties of a medical officer of health are tremendous (in an average town such as Leicester, for example) and require a most extensive and liberal education. The man who would aspire to so honourable a post must specialise early in his professional life. Think what he has to do. The Local Government Board directs that he shall inform himself respecting all influences affecting, or threatening to affect, injuriously the public health within the district. He shall be prepared to advise the sanitary authority, worthy aldermen and common councillors alike, on all matters affecting the health of the district. He shall direct and superintend the work of the sanitary inspectors. He has to be able to give a decided opinion as to whether some articles (meat, game, fish, and the like) when exposed for sale are fit or unfit for food. He has to write numberless reports on all sorts of subjects and to report every quarter to the Local Government Board, and oftener if there should be any epidemic. He has to prepare an annual report up to the end of each December containing tabular statements without end with regard to sickness and death-rate. In matters not especially provided for the medical officer of health must obey the instructions of the Local Government Board and the lawful orders or directions of the sanitary authority. Since I have been in practice it has become necessary to notify to the sanitary authority all cases of contagious diseases and the medical officer of health is expected to be able to decide immediately in doubtful cases of infective disease; for example, he must decide at once whether a case be one of modified small-pox or of severe chicken-pox. He has, in fact, to constitute himself a "final court of appeal." It is now suggested that his duties should be added to in connexion with the supervision of midwives under the new Act.

Now surely the education of a man who is to carry out these duties thoroughly well must have been very special—in fact, directed towards public health *ab initio*. Although it has nothing to do with my argument, I may here express my firm opinion that our Association will be doing a great work if it will use its influence to favour the principle or policy of "fixity of tenure" as applied to competent and well-educated medical officers of health. The present conditions of service are not satisfactory, to say the least.

As another instance of special work in our profession, work requiring special aptitude and education, I would refer to the insane. In these large asylums which unfortunately seem to have sprung up, and are springing up, all over the country and which are harbours of refuge for the most afflicted and the most to be pitied of our fellow creatures are to be found men of our calling who have devoted, men who are devoting, their lives to the improvement of the treatment and surroundings of those unfortunate people intrusted to their care. Within the last half century the treatment of the insane has been revolutionised—improved in every possible way. This has been due to the specialists—to men who have *made* the care and treatment of those of unsound mind their special study. And so I might go on; it really seems as if the medical profession is soon to consist of a series of professions and that those who enter it, if they intend to make a decent living, will have, quite early in professional life, to decide each one on his particular line. Of course this is not really so.

The two illustrations I have given of specialism in public health and lunacy are illustrations of legimate specialism, but that there is a type of specialism existing with which we are not all in accord no one will deny. A healthy specialism has been defined as "a practice of a special branch of treatment, a study of a special domain of knowledge of a natural and gradual growth in the varied experience of a practitioner." Something like this has always existed in medicine, greatly to its advantage, and is very different from the specialism of what I have heard described as the mushroom growth variety, where chicanery and humbug reign triumphant. There can be no doubt that honest specialism has advanced the science and art of both medicine and surgery, particularly during the last 30 or 40 years. But, as has often been observed in many other lines of human activity, all subdivision of labour, while advancing the best interests and development of the people at large, has great disadvantages for those engaged in the work. *This is seen* constantly in many industrial pursuits, when mechanics or workmen become almost like machines, devoting their constant toil and energy to one small section or subdivision of work, and are relatively useless *in regard* to other portions of the same industry. There is, *then*, the danger that this modern development *of specialism* may tend to produce a narrower type of medical men who, like the mechanics, will *only know their own* department and work, and be unable to understand properly the relations of special portions of the field of medicine to others or to the system at large. Whether this may be so or not, the main point to keep in view, while always admitting that specialism is with us, is "*whether or not the practical result is good?*"—first, as *affecting the* public, and, secondly, as affecting the profession. To both of these questions I unhesitatingly say Yes, and from my experience of practice and patients I make bold to declare that the public might derive more help and benefit than they do if they knew what to have and what to avoid in the way of specialism. Now here is the opportunity and a well-defined duty for the well-educated practitioner. He will see to it that his patient shall not become (if he can help it) a patroniser of the false specialist (legally qualified or not). After all, it seems to be a matter of trust, and just in proportion as you have young men coming thoroughly well trained from the medical schools so you will have a corresponding amount of confidence on the part of the public. The way in which specialism is affecting the profession has already been alluded to and I only say again that the chief danger seems to be the development of a narrower type of medical man. I think before leaving this subject of specialism that I may take the opportunity to express my regret that nothing seems to be able to be done to check the advertising specialist—enterprising advertisers who claim to cure diseases without seeing the patients (claim to do, in fact, what is impossible of accomplishment) and so use the daily press and religious and magazine publications for fraudulent purposes, for that is what it amounts to. In America, I think, there are greater sinners in this respect than there are here but in England they are bad enough and it is a matter of painful surprise that proprietors of high-class newspapers and magazines can allow such rubbish to be shot into their advertising columns. There must have been great defects in education somewhere or such a condition of things would never be tolerated.

I have intimated that, to the best of my judgment, the average young practitioner of to-day is a better man than he was 30 or 40 years ago, but I want him to be better still, to be more thoroughly equipped, and would not the public gain immensely if this were so? The university education is the first pressing necessity. I have alluded to the good time coming when all medical *students* shall be undergraduates of a university *and shall* have to take a degree in arts. I hope it is not a dream; but that another generation will see its accomplishment. It is undoubtedly the fact that medical men of a former *generation* whose sons are now entering the profession send them, if they can possibly affor it, to one or other of the universities; again, when th student's time is over in the *five or six* years, wh should it not be obligatory that he should hold som responsible resident appointment *for* six or twelv months before going *into* practice? As a matter fact, it is more often so than not, but now that ther are more opportunities for resident appointments it woul be a wise regulation that every man should have th experience. I have known many men who have regretted i after years that they had no such opportunity. I ma perhaps offer one more suggestion to the newly qualifie practitioner, and that is that he should at once join th British Medical Association. The British Medical Association, as I have *mentioned*, was founded at Worcester in 183 At its *first* annual meeting, a year later, it numbered 14 members. Its success has been very marked. I think tha there are some 20,000 members, but the success will not b complete until every registered practitioner becomes a membe The British Medical Association exists for the promotio of medical and the allied sciences, it also exists for th maintenance of the honour and the interests of the profession. I will not labour this point now, I may hav another opportunity, but I would earnestly invite ever newly qualified practitioner to join our Association as a matter of course.

I suppose all of us when students indulged more or less i "hero worship." I am sure I did and I have already mentioned the name of one of my heroes. I mean the late Si John Simon. He was appointed lecturer on pathology a St. Thomas's Hospital as far back as 1847. He was then 31 years old and on that occasion he gave an inaugural address and I propose to conclude my remarks to-night, which I sincerely wish had been more worthy of this distinguished audience, by quoting some of his final sentences. Mr. Simon —*this genius*, surgeon, pathologist, and poet-philosopher—was addressing a very learned audience, *not only* students. He said:—

> But finally, ... nor can I refrain from reminding you, ... to run is no beaten track of traditional ki . . . . . . — we have jointly to study is yet but in its first dawn and immaturity and the terms of my commission here have imposed on me as an especial duty to institute researches for the purpose of unveiling the latent processes by which disease is established and the curative processes by which it is removed. To coöperate with me in these researches and go far beyond me in achieving their great results I earnestly invite and exhort you. I bid you enter on a field of science where industry must have its reward in an unparalleled harvest of discovery—a field now first beginning to bear fruit, with promise of unmeasured fertility. If you have energies in you, beyond the mere care for sustenance, how can you better or more nobly bestow them than in original investigations which have nature for their field and the alleviation of human ill for their final purpose? It is in no transient access of enthusiasm, but in the deepest conviction of my judgment, that I affirm the supreme dignity of such pursuits; that I affirm them not only to be in themselves the loftiest occupation of the human mind, but to include the largest and most enduring rewards. To be the successful interpreter of nature, to discover her hidden laws of operation, or by your personal exertions to augment the permanent resources and utilities of medicine—this implies as its result to be remembered so long as man and outward nature coexist; *to be remembered as the ornaments and benefactors of your species.*

INSTITUTE OF CHEMISTRY OF GREAT BRITAIN AND IRELAND.—Of 19 candidates who entered for the intermediate examination held in July 12 passed: J. W. Agnew, H. G. Dale, James Dick, jun., W. P. Hayworth, I. M. Heilbron, R. F. Innes, S. Judd Lewis, A. J. C. Lickorish, F. L. Okell, R. P. Page, H. J. B. Rawlins, B.Sc. Lond., and D. R. Wood. In the final examination for the Associateship (A.I.C.), of five examined in the branch of Mineral Chemistry three passed: J. B. Hoblyn, Assoc.R.C.Sc. Lond., G. W. James, B.A. Oxon., and H. H. Kingdon, B.A. Oxon.; of six in Organic Chemistry four passed: A. W. Bain, B.A., B.Sc. Lond., T. W. Cheke, J. Stuart Hills, and D. F. Twiss, M.Sc. Birm.; and of nine who entered in the branch of the Analysis of Food and Drugs and of Water, including an examination in Therapeutics, Pharmacology, and Microscopy, four passed: R. W. Blair, Assoc.R.C.Sc., I., P. H. Carpenter, J. A. Goodson, and S. Summerson, B.Sc. Lond. One candidate passed an examination for the Fellowship (F.I.C.): E. F. Harrison, B.Sc. Lond.

Address in Medicine

ON

MEDICINE, PRESENT AND PROSPECTIVE.

Delivered at the Seventy-third Annual Meeting of the British Medical Association on July 26th, 1905,

BY HENRY MAUDSLEY, M.D. LOND., F.R.C.P. LOND.,

CONSULTING PHYSICIAN, WEST LONDON HOSPITAL.

[IN the introduction to his Address in Medicine Dr. Maudsley disclaimed any intention of reciting the story of its victories. His desire was to indicate in a general way how with advances day after day its horizon widens and its expectations of service to mankind increase. He also inveighed strongly against the present practice of inventing and multiplying portentous words of Greek or Latin or mixed root to describe simple things and then proceeded as follows:—]

Looking out on the present state and prospect of medicine it is obvious that its future work will be mainly to prevent and to stop the beginnings of disease—to take good order that it shall not come and if it do come to prevent functional disorder from lapsing into fixed disease, which must be given over either to the surgeon's knife or to the shears of Atropos; for to despise the little things of functional disorder is to fall by little and little into organic disease. Now preventive medicine has two plain ends, the one of which is being pursued with signal success, the other not duly studied. The first, by all fit measures and precautions to defend the body from those attacks that come from without, whether in gross form or as invisible microbes floating to and fro on earth to assault and to hurt it; the second, to obviate the predispositions to disease which lie within the body by giving it inward strength to resist its subtle, ever-present, ever-active enemies—in fact, to teach it to die at last from old age as every medical man ought theoretically himself to do.

The success of preventive war against disease is manifest in the decrease of such diseases as plague, typhus and typhoid fevers, small-pox, malaria, and hydrophobia. Here medical art, having learnt definitely what it has to fight against, employs definite measures of defence and attack for a definite end. So it has relinquished the fearful bleedings, purgings, vomitings, and druggings once in fashion. Think for a moment on what happened when medicine blindly attacked symptoms at first sight, on the sort of treatment, for example, which a poor wretch suffering from scabies underwent before the insect of that disease was discovered. What mischievous measures again were employed to provoke the pouring out of "laudable pus" where no pus should be! That the practice of warring against symptoms, which are effects and signals, perhaps useful outlets, of the disease by trying to suppress them instead of striking at the cause and letting the symptoms alone is now obsolete, would be too much to say; it is long since the violent lowering of high febrile temperature by frequent doses of antipyrin was the fashion; and still, I fear, large use is sometimes made of opium, chloral, and their like to quench the fire of acute mania, notwithstanding that, smothered for the moment, its flame blazes more fiercely afterwards to the prolongation of the disease and peril of the patient's life. A lesson of human history which the history of medicine signally confirms is that error does not become truth because it is repeated thousands of times by many thousand persons. Might not the lesson haply be applied to the valuation of some current medical theories? I suspect that if a competent thinker, constituting himself a sort of *advocatus diaboli*, were to write a book entitled "Medical Doubts," setting forth reasons why some accepted truths may not after all be true, he would do a real service to medical science.

For the adoption of requisite measures to ward off disease and nip it in the bud the medical man does not get full and fair opportunities. Summoned to the bedside of one actually ill, the disease having got its hold, he sees the sick man for the first time when, being sick, he is not his true self. Ignorant, therefore, of the patient's constitution and habits, of his temper of body and mind, all which count for much in the prescription of sound rules and directions, he is not so qualified to counsel wisely as if, called in beforehand to advise against sickness, he possessed the necessary elements of comparison between the sound and unsound man to instruct treatment. For it is a diseased person, not an abstract disease or absurdly called morbid entity, which he has to handle; and in most persons, I imagine, there is present the weak organ or tissue which is liable to fail in function under strain, and in the end begins to die first. To treat the same disease in the same way in all persons is to do much like the tailor who supplied all his customers with clothes made to the same measure, without taking their particular measures. If medical men give physic but seldom take it—as the old gibe is—may not that be because, knowing something of their own constitutions, and of the causes and beginnings of disease, they adopt timely measures of precaution and a system of treatment sorting with their habits and temper of body and mind?

The second aim of preventive treatment—thrown into the background now by the eager quest of the microbe—is to obviate the predispositions or tendencies to disease which lie within the organism. For such predisposition exists, whether or not, disliking the word, we like to speak instead of a constitutional soil suiting the microbe; facts not being changed by being named differently, though men are very apt to think so. Not to speak of the want of a full and exact study of radically different types of constitution and of their respective qualities and disease tendencies, of which little note has been taken since the abandonment of the old doctrine of temperaments, there is a strange want of any study of the effects of the interbreeding of parental disease tendencies upon the constitution of the offspring. Might not some good come from systematic inquiries into the production and elimination of constitutional disease tendencies and disease immunities by the marriage unions of different tendencies and immunities? When a person has a disease unlike that which either parent had he may still owe it to them, variations occurring in morbid heredity just as they do physiologically. The case, of course, is not one of the breeding together of actual diseases—no metaphysical conjunction of morbid entities—but of two physical organisms tending to go wrong in their respective ways. What is the morbid outcome of the union of a phthisical and an insane diathesis? As bad as it well can be, I should say. Or of a diabetic and a phthisical constitution? What is the constitutional disposition, if any, most likely in breeding to cancel a tendency to cancer? For, eager as the search is for a cancerous microbe, one may doubt whether it has yet been tracked to its late suspected lair in the nucleus of the cell. Having regard to the local invasions and distributions of cancer, its provocation by local irritation, its more than accidental heredity, and its quiet settlement in the system without feverish tumult, for all the world as if it felt itself no alien intruder but constitutionally at home there, it seems probable that its unruly proliferation of cells, however provoked, betrays the awakening to activity of the silent memories of ancestral germinal growth. How best mate the person having a native tendency to insanity so as to cancel it in the progeny, or, better still, convert it into a good evolutional variation? For that is what happens sometimes, one child of a neuropathic family dying in a lunatic asylum, while another rises to eminence as poet, painter, orator—great man of some kind. Why and under what conditions is the epilepsy of one generation transformed into the insanity of the next generation? How is it that diabetes and insanity go along together in some families or alternate in them through generations? When medical science can answer these and like questions it may then dictate some wise eugenic rules. Meanwhile in the uncertainties of things we do well to trust—and we can have no surer trust—that *vis medicatrix naturæ* by which, health being the normal and stable, disease the accidental and passing condition, it comes to pass with the race through generations, as with the individual in his brief life, that the organic strain constantly is to rectify deviations and to bring disorder back to order, so keeping mankind in continuance, if not progress, of being for its appointed time on earth.

[Here Dr. Maudsley discussed whether in the marriage union of disease tendencies a new disease is ever born and concluded that there is a limit to the capacity of a definitely constructed organism to go wrong and suggested that the organism may now have exhausted its morbid capabilities. He continued:]

In the work of fortifying the body to resist inroads of disease the most simple means are the best and, as Hippocrates said, it is in the use of simple means that great physicians especially differ from others. Pure air, clean and proper food, regular and adapted exercise—these sum up the measures prescribed as proper to give inward strength and to keep it in sound and supple activity. But they are not quite all, for they leave out mind; and as a sound body is the condition of a sound mind so the wholesome exercise of a calm and well-disciplined mind, ready to meet all changes and chances with composure, ministers mightily to health of body. Corroding passions and unruly affections, such as anger, envy, jealousy, revenge, lusts, and fears of every kind, are a hurt to body as well as mind, so that rules of wise mental culture and exercise are an essential part of the regimen of health. When one contrasts the simplicity of the salutary rules with the usual stolid violation of them it might seem that men were in love with disease, such pains do they take to provoke and nourish it. Knowing well that fresh air is a good thing they go on in practice to shut it out lest a stray draught come their way; so little care do they take to eat only what is needful that they habitually eat twice as much as is good for them; so reckless are they of what they drink that they persistently abuse alcohol to obtain temporarily an ideal relish which the insipidity of their real life denies them; so perfunctory is the routine of daily exercise they take in dull mechanical pacings that they rehearse their lives by rote, never bringing into full use half the possible movements of their bodies and less than half the faculties of their minds; so little mindful are they of the need of rest to overworked function that, so long as sexual power lasts, they spend it recklessly in the gratification of lust, thinking no harm provided the exercise be connubial.

That the body is a complex reflex mechanism is now a familiar notion, strange and ignored as it was when Descartes first conceived it more than 300 years ago, expressly setting it forth then in a series of distinct propositions which, as Huxley said, constitute the foundation and essence of modern physiology of the nervous system. The conception, untimely born, fell into utter neglect. Even now, after so many years, but little has been learnt scientifically of the manifold bodily reflexes or sympathies—motor, sensory, secretory, and nutritional—although everybody might make the needed observations on his own person, and a full and an exact knowledge could not fail to be put to excellent use in practice? How is it that a patch of psoriasis on one leg, although itself left untouched, is cured by curative applications to a similar patch on the other leg? Certain it is that a clear conception of the reflex mechanism of the organism as a whole and an exact knowledge of the reflexes or sympathies of its parts will yield much profitable use, not only through systematic and skilful employment of kneadings, rubbings, pressings, and such-like manipulations and appliances whereby an infirm organ may be more benefited sometimes than by many, or perhaps any, drugs, but also by regulated exercises purposely adapted to bring into wholesome action all the muscles of the body, whereby every muscle may be made to contract and every minute vital channel kept open and so disease prevented or stopped at its outset. Moreover, as the "life of relation" (using Bichat's term) from the cradle onwards is the organic education, mental and physical, of a reflex mechanism whereby that which is consciously and laboriously learnt is expressed easily and automatically—such gradual instruction being organic construction—a constant aim ought to be to fashion it well, as well to know how it works best and to keep it in the best working order.

[Dr. Maudsley then pointed out that after all the application of the principle of the reflex mechanism of the organism was not in the end due to Descartes but to those who, coming after him, worked laboriously to establish and confirm it, and that science owes a service of thanksgiving to its obscure worthies like the Church holds to its uncanonised saints on All Saints' day. He continued:—]

The present posture of medicine in relation to tuberculosis shows a wise recognition of the necessity of fortifying the body inwardly to resist its outward enemies. The noxious bacillus has been caught, it is true, but its capture has not been followed by the discovery either of a protective serum to immunise the body or of an antitoxic serum to extirpate the bacillus in it. Bacilli, like the poor, we shall doubtless always have with us; nor can we ever hope to keep them out of the body, as surgeons once fondly hoped to do with their carbolic sprays, and food sterilisers would fain do now, notwithstanding that they may thereby destroy one half the nutritive value of the food; that a recent observer has isolated more than 100 different kinds of bacilli in the juices and deposits of the human mouth; and that another observer has found in the healthy intestine a large number of organisms intermediate in character between the typical colon bacillus and the typhoid bacillus. Here, I think, one may justly regret a want of sobriety in some medical statements on the popular platform in consequence of which the public have jumped to the conclusion that because the bacillus has been discovered phthisis is curable, the old notion of its heredity erroneous, the objection to phthisical marriages obsolete, and the right thing to do forthwith to dot the land freely with sanatoriums, and so gain an immense addition to the life-capital of the nation. But is phthisis so very curable in these special hospitals, nowise endued with any special grace, I imagine, by reason of their being called sanatoriums? Adequate statistics are not yet available, but thus far the modest outcome of experience seems to be that many patients who are sent in the early stage of the disease recover, if they are kept long enough; that most of those in a more advanced stage improve while there, frequently relapsing afterwards; and that those who are badly diseased ought not to be sent at all. Is that, after all, to say much more than might be said of sensible treatment before the erection of sanatoriums? In the end, means must be found to mend the fit constitutional soil and breeding ground of the bacillus, if it is to perish of inanition for want of its human food. The startling proposal that subsidary institutions should be set up, in which those who are not cured may be taken care of for the rest of their lives, can hardly please the burdened ratepayer who may think that a nation's chief aim ought to be to have healthy bodies and minds which can endure all changes and extremities, not such as must be protected artificially from them.

Can we, again, eliminate the predisposing influence of heredity? Actual tubercle may not be inherited—nobody thinking clearly on what he thought ever thought that it was—but the poor constitutional soil inviting and suiting the bacillus still passes from parent to child; and we do not get rid of the essential fact by changing the name. Do we, indeed, in the end get such a valuable addition to the life-capital of the nation? It is easy enough, noting that some 60,000 consumptives die annually in England and Wales—I do not vouch for the figures—fancifully to rate the value of each life at an arbitrary figure and then by multiplication to make an appalling computation of the loss to the community; but is the loss so real? Might not the ultimate cost to the commonwealth be greater were these persons to go on living and breeding in it? An addition to the nation's life-capital is all very well, but the quality of the capital counts for a good deal and it will not count for much if it is not realisable. What does the realisation amount to in practice? The patient who comes out of the sanatorium recovered or improved must usually go back to his former work and surroundings; he cannot adapt the world to the weakness of his nature and its ideal needs, but, like other mortals, must adapt himself to the rude world and perforce do much as they do. That is what he quite naturally does; returns to his work and his old ways, perhaps gets married if he is not married, and begets children who can hardly have the confidence of a good descent. Meanwhile, when he relapses, he sows bacilli broadcast, thus multiplying such life-capital to fulfil its ordained function in the universe, that apparently being to make away with weak mortality.

However, I shall not pursue a tender subject further. Human life is so precious nowadays in all its states—phthisical, insane, criminal, inebriate, and the like—that it is the pious duty of the social organism not, as the healthy bodily organism tries to do, to extinguish or extirpate a morbid element but to absorb it into its system, growing sympathy being the vital principle of social growth. The medical man, at all events, can plead his duty to his individual patient; he is not sponsor for the nation's future; that he leaves to those whose business it is. Still, a sceptical-minded person—he would be called a cynic—looking to the ultimate issue of such morbid absorptions, might be tempted to exclaim with the prophet: "My people love to have it so, and what will ye do in the end thereof?"

To the clear and distinct conception of the body as a complex reflex mechanism, in which there is mutual intelligence of parts with entire community of interests, we have to add the conception of it as a vital laboratory of the most complex chemical substances and processes in the world engaged in the most condensed and subtile activities. We easily think of it as a wondrous community of innumerable cells that have undergone various differentiations to form different tissues; but when scientific imagination goes deeper into the minute subtilties of matter a living cell seems but a gross thing. Concentrated within its little body are subtile and intense forces, continuously and quietly working, which, if let loose in large explosive display, might suffice to blow up the chemist and his whole laboratory. No wonder, then, at the increasing knowledge of the important part which chemical activities play in vital processes. Considering closely how many different chemical actions enter into each of the various bodily functions of the body—assimilation, respiration, secretion, excretion, generation, sensation—all going on harmoniously to maintain a unity of being, yet each liable to incalculable disorders, the eternal wonder is that it holds together so long and so well as it does. In the performance of these functions not the whole organism only but every cell of it generates poisons which would be fatal if they were not got rid of. The breath of man is fatal to man; his excretory products would poison him if he did not get away from them or them away from him; the fatigue of an organ or tissue is not due to the using up of its energy and matter only but also to the toxic products of waste which pass into the blood stream and are hurtful when they are not perchance of economic use to other organs or tissues. The proteid molecule of food suffers decomposition into a dozen intermediate products before its elements are built into living tissue and at every stage of the series there is the possibility of a pernicious vitiation. The various kinds of enzymes or ferments which work in the processes of metabolism, each producing its particular chemical change, are liable to their several toxic mischances. In its normal state the intestinal canal contains numerous poisons and possibilities of poison—mucus, albuminoids, alkaloids, and aromatic and biliary substances. Thinking on the many risks of self-poisoning and on the exact chemical agency requisite to counteract each of them scientifically, it seems a lawful conclusion that more medical good will be done for the most part by simple and general measures to keep the body in health and strength than, according to Voltaire's witty sneer, by pouring drugs of which we know little into a body of which we know less.

Besides the subtile chemical poisons of physiological disorder medicine has now to tackle the special toxins generated by the various hostile microbes and the far-reaching damage which they do—so far-reaching sometimes as to have no end but the end of the life which they end. The syphilitic virus, whether microbic or not, is the proclaimed cause of tabes dorsalis and general paralysis. Years after his specific infection and its supposed cure a man is attacked by the flashing pains portending a tabetic degeneration of his spinal cord or exhibits the inflated feelings and ideas preceding the cerebral devastation of general paralysis, both diseases going down thenceforth to their fatal endings. Strange to think that one kind of microbe can be the latent cause of the variety of symptoms, having regard to their differences in different cases, the elective affinities for particular organs, and the long suspensions of activity during which it must lie dormant, only to awaken from time to time to virulent fury. One may suppose, perhaps, that the specific virus, however generated, affects injuriously the stability of the nerve molecule, an effect nowise apparent while the person is strong and well but manifestly destructive when vitality of nerve element is weakened by abuse of function or other cause. For it is with elements of tissue as with individuals: to be weak is to be miserable.

In the discoveries of microbic toxins and their antitoxins and of the immunising virtues of antitoxin serums there is a discernible promise of scientific therapeutics when chemical agents will be used, not empirically, but with scientific precision for a definite end: an optimistic outlook all the more legitimate, seeing how the chemist in his laboratory, by substitution of atoms in molecules, now creates new substances which, so far as we know, never existed before in nature and some of which have proved to be of good medical service. Thus creating, our hope is that he will on the whole turn out to be a benevolent creator by inventing more beneficent than maleficent compounds for human use; range himself, in fact, on the side of the good genius of the universe. The rapid progress of chemical research, steadily sapping the barrier between organic and inorganic nature, has now reached the very confines of life, even forecasting an ultimate analysis of those subtile physico-chemical processes whose mysterious unity of action in the organic molecule we provisionally call vital force. Six years ago a president of the Chemical Section of the British Association for the Advancement of Science affirmed that, no matter how successful the reduction of vital to physico-chemical activities, a residuum would always evade such explanation and require an intelligent directive agency; but the latest researches of stereochemistry into enantiomorphous substances seem to show that the enantiomorphous agency working in the dead universe may dispense with the need of the metaphysical assumption. However that be, certain it is that day after day, with every step forward in physics and chemistry, proofs accumulate that all vital processes rest at bottom on physical and chemical processes of the same kind—although raised to a higher power—as those which take place out of the living body.

Deep as the chemist penetrates into the subtilties of matter, there is a yet deeper order of inquiry into the mysteries of the infinitely little and its most potent forces. The discovery of radial rays, perpetually thrown off in radio-active dissociation with an energy greater than that liberated in the most violent chemical decompositions, has taught us that the atom is not a simple thing but a spot of positive electrification within which swarms of negative electrons whirl their mazy rounds with inconceivable rapidity. Thus the chemical elements, each with its individual properties, originate in differences of the number of electrons and the figures which these take as they whirl, and all matter is resolved at last into moving electric charges—material nature simplified into electricity and ether. Remote as such speculation appears to be from the realities of life the story of applied science furnishes many striking instances of theories so abstract as to seem of no conceivable use, which have, nevertheless, in ways quite unexpected, effected extraordinarily useful revolutions in practice; and it is not therefore unlikely that full and exact knowledge of radial energy and of its mode of action on the vital processes may instruct and guide to yet undreamed success the radial treatment of disease, some fruits of which have already been empirically gathered.

Here, then, thought again reaches a point where the domains of the living and the non-living are no longer separated by a chasm; where, indeed, one might think (if one did not suffer thought to be governed by words) that the domains of matter and life, even of life and spirit, meet, the material being sublimed into the vital and the vital into the spiritual. That all divisions of science shall gradually be effaced, even that which metaphysics has fixed between bodily and mental life, the partitions being received as conveniences of thought, not as sections and separations of substance, is inevitable, if all nature be one process of orderly evolution and the function of science be to find it out. The absolute barrier between mind and body set up by metaphysics has in truth been a great hindrance to the progress of positive science. That mind works upon body to alter the rate and quality of its functions and, conversely, body upon mind to affect its moods and thoughts is a truism, but a truism the full truth of which is not realised because of the habit of setting mind and body over against one another as separate and independent entities. Between material energy and consciousness there is a gulf, it is true, just as there is between one mode of perception and another, but it is not possible in biology to set up a partition between mind and body. Mind works in every function of the body; a sound body is the foundation of a sound mind; and the lunatic is lunatic to his finger ends. Moreover, they surely disclose one another, although by more subtile writing than we can yet read. It is not by the medium of words only that thoughts and feelings are expressed. They are expressed by other motions that are sufficiently distinct to be perceptible by sense—by subtile motions of look, gesture, gait, attitude, and the like; the differences of which in different persons are characteristic exponents of natural differences of thought, feeling, and action. Mind does not merely affect the body, it permeates its constitution and is delineate in the map of it. On the other hand, there is not a function of any organ of the body which does not enter into the constitution of mind; the reproductive glandular function notably revolutionises its thoughts and feelings during adolescence; the defective thyroid maims and lames it; an atom or two going astray in metabolism precipitate it from the height of joyous vigour to the depths of impotent despair. No purposive movement could ever be made but as the outward discharge of mind incorporate in fit structure; for the cleverest man in the world could not button a button, even stir a step, had he not learnt the art by repeated practice—had not, in fact, patiently organised intelligence in proportional, that is *ratio*-nal, structure which thereafter discharges itself automatically. When the intelligent act, once learnt and fixed, is done unconsciously exactly as it is done consciously, it is absurd to say that there is mind in the one act and not in the other. The organic process is simply one of doing consciously in the individual lifetime that which has been done gradually in the formation of animal and human instincts by evolutional adaptation through the ages. In both cases the result is structually consolidated reason, mind statical. The intimate and essential unity of mind and body is, of course, pathological as well as physiological. When the paralysed patient's power to speak or walk is restored by a strong impression made upon mind by a miracle-working shrine, or by the suggestion of a skilled hypnotist, there takes place a physical excitation of the suspended function of the nervous tract or area in which the belief and will to act were implicitly organised. For the seeming miracle to occur there must, naturally, be mutual sympathy and belief in its success; an interposed screen of doubt or disbelief prevents the excitation or inspiration of the requisite faith. To ascribe the result to imagination is one sort of provisional explanation. Certainly, as imagination may kill, so also it may cure. But that, after all, is to explain nothing—is to do little more than to make a faculty of a word.

What is the nature of the subtle transfer of energy between he active and the recipient mind whereby the former excites he latent belief and energy in the latter? Without subscribing to the strange stories of telepathy, of the solemn apparition of a person somewhere at the moment of his death a thousand miles away, of the unquiet ghost haunting the scenes of its bygone hopes and endeavours, one may ask whether two brains cannot be so tuned in sympathy as to transmit and to receive a subtile transfusion of mind without mediation of sense. Considering what is implied by the human brain with its countless millions of cells, its complexities of minute structure, its innumerable chemical compositions, and the condensed forces in its microscopic and ultramicroscopic elements—the whole a sort of microcosm of cosmic forces to which no conceivable compound of electric batteries is comparable; considering, again, that from an electric station waves of energy radiate through the viewless air to be caught up by a fit receiver a thousand miles distant; it is not inconceivable that the human brain may send off still more subtle waves to be accepted and interpreted by the fitly tuned receiving brain. Is it, after all, mere fancy that a mental atmosphere or effluence emanates from one person to affect another, either soothing sympathetically or irritating antipathically? Think in this relation on the extraordinary (so-called) magnetic personalities which some persons possess, and, again, on the contagious fire of emotion which spreads quickly and gathers volume in a crowd of people, inflaming them, as the case may be, either to deeds of mad fury or to corybantic displays of religious fervour.

Now, as fuller and exacter knowledge of the reflex mechanism of the body adds to our means of preventing and curing its disorders, and increasing chemical knowledge points to scientific therapeutics, so may a just conception of the subtilties of the forces at work in mental action inspire a more advised and methodical use of the resources of mind to cure diseases of body. Is it not from neglect to employ such intelligent measures that patients fall into the hands of nature-curers, Christian scientists, mesmerists, and the like faith-instilling persons and are sometimes cured when drugs have failed? And is it not to the use of such means, albeit not consciously formulated, that the popular practitioner, whose small medical knowledge is the smallest part of his skill, gains the coöperative belief of his patient and owes his fashionable success? It is all very well to say that people are ignorant, foolish, credulous. Of course they are. The world would not have gone the way it has gone were the immense majority not gladly beguiled; but if you would influence the fool, for his good you must enter by sympathetic imagination into the fool's mind and discern the motives by which it can best be moved. And it is still the fact that, as Cicero said of places in his time, every place swarms with fools. Sick persons, even when not foolish, are notably sick in mind mostly need a mental tonic to stimulate their weak vitality, such inspiration serving sometimes to animat tissues to a strength of vital resistance from which noxious bacillus retreats baffled—yes, even though greedy there and scents the fit soil it does not find fit climate. Few drugs are more helpful than hope, deadly than despair.

If the procession of nature be an orderly evol of things up to the mental organisation of man, slowly perfected through the ages and still perfec and the growth of man's understanding and p takes place through growing knowledge and ob ance of its laws—being a growth of nature through h part of it—medical science will obviously play a large in the future improvement of the race. In his desi found a science of *Eugenics* by discovery of the law good breeding in families Mr. Galton would have well-co tuted persons chosen to mate with well-constituted per looking forward to the establishment of a suitable auth to grant certificates of good health of mind and body to who propose to marry, so that eventually a superior h stock may gradually be produced. Inasmuch, howeve the inferior persons would go on breeding after their the result might be two species of human beings, a r clean contrary to the philanthropic principles of a democ age, which aspires to embrace the lowest specimen o race as a man and a brother—in heaven ultimately, a events, although not for the present on earth. The pro of human breeding, however, is far from so simple as of the lower animals, both as regards the forces conce and the nature of the desired product. Man is a very plex organic mechanism, framed to function, not like or dog in certain set ways, but in fine thoughts and feeli these being the superior essence of him; and it no follows that an otherwise perfect physical constitution along with a perfect mental constitution, or that you not breed a mind of extraordinary quality from a and lame body. The owner of racehorses, basing trust on a law of heredity, no doubt does wisely to a thousand guineas for a yearling colt of a distingui sire, when he would not give a thousand shillings for offspring of a poor sire, but it would hardly be wis buy the offspring of a human genius at a like proportio cost. In the human organism, with its varieties of chan moods and passions, there are delicate influences affec gravely the processes of reproduction which invalidate clusions drawn from observation of the comparatively sin organic machines which animals are; for these subtile-po forces of mind assuredly constitute a medium which powerfully on the formative processes of the delicate ge not otherwise than as on a lower and coarser level slight perimental changes in the physical medium are now exp mentally shown to effect strangely the development of germs of sea-urchins, caterpillars, and the like.

Complex and uncertain as the matter is in the human c it is nevertheless certain that there are laws of mental br ing yet to be discovered and it is no more unlawful to inq scientifically into the nature of vice and sin than into nature and action of poisons. Hatred is as natural as hu and stands in no less need of scientific explanation. That m qualities are not dependent upon physical constitution, h no physical connexion whatever, is an opinion wh although fostered in the supposed interests of morality really a hindrance to the growth of practical morality. one thing is certain it is that all wrong-doing, whether er vice, or sin, is avenged on earth; not always, it is true, the individual wrongdoer, but somehow, somewhere, on oth bound together with him vitally in the social system. Co men be taught to know and knowingly feel this simple tr they might be more heedful of their thoughts, feelings, actions than they are apt to be while they ignore the st law of vicarious punishment on earth and relegate recompense of their doings to another life. Even for own sake the evildoer might pause in his course if he thought himself that the habit of a life is the orga fashioning of a character and that a persistent system bad feeling and conduct means a steady deterioration character—means, in fact, the physiological undoing in mental organisation of the fine filaments of thought a moral feeling, the delicate nervous tracery, which have be the gain of human progress through the ages and, being t latest and finest organised, are the first lost in every form mental degeneracy.

A sobering thought, too, it might be that the mischief does not end with the individual life. From that which is evil what good can come? In the moral as in the physical world the present is the natural product of the past and the determinant of the future. Moral deterioration in the parent is pretty sure to be visited somehow upon the mental constitution of the children and the children's children, for grapes do not grow on thorns in the moral any more than in the vegetable world, and it is, I believe, the moral or affective, not the intellectual, nature—the tone of feeling infused into the forming germ—which counts most in human heredity. If that be a lesson which medical research will some day demonstrate scientifically one can heartily endorse the saying of Descartes, who was well versed in the physiology of his time and was himself a diligent dissector, that if mankind is to be perfected, the means of perfecting it must be sought in the medical sciences. For my part I cannot doubt that a positive science of human nature, as it gradually emerges into form, will make it ever more and more plain that, by operation of natural law in the process of organic evolution, sound thought, good moral feeling, and devotion to a high ideal are the solid foundation of health and wealth of mind in individuals, in families, and through families in nations; that there was, indeed, a measure of scientific truth in the saying of the Hebrew seer who, looking on the generations of old, declared that those who sow upon the furrows of unrighteousness shall reap them sevenfold.

Address in Surgery

ON

ASCENDING CURRENTS IN MUCOUS CANALS AND GLAND DUCTS, AND THEIR INFLUENCE ON INFECTION: A STUDY IN SURGICAL PATHOLOGY.

Delivered at the Seventy-third Annual Meeting of the British Medical Association on July 27th 1905.

BY CHARLES JOHN BOND, F.R C.S. ENG.,
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MR. PRESIDENT, LADIES, AND GENTLEMEN,—When I look through the names of the distinguished surgeons who have delivered the Address in Surgery at the annual meetings of our Association during the last 50 years, I feel very strongly that my own thanks are especially due to the Council of the Association in thus honouring me by asking me to address you on the present occasion. Among those names to which I have referred one of the most distinguished is that of Professor Syme of Edinburgh who gave the Address in Surgery at the annual meeting at Leamington in 1865. Syme concluded his survey of the progress of surgery during the previous 40 years with these words:—

> In conclusion, Mr. President and Gentlemen, I beg to express my hope that from what has been said surgery will not appear to have stood still, or pursued a retrograde course during the last 40 years, but, on the contrary, to have been improved in many important points of practice and to hold out the prospect of further advance, so that when, forty years hence, some senior member of the Association shall take a similar retrospect, he will find no lack of materials for illustrating the march of progress.

Sir, it is 40 years this year since these words were spoken; what, then, shall we say to-day in fulfilment of Syme's prophecy? We may, I think, safely affirm that next to the enormous strides which the science of surgery has made in this period (a very large share in which triumph belongs, among other honoured names, to Syme's own son-in-law, Lord Lister), that next to this advance one of the most notable of the lesser changes has been the decentralisation which has sprung up in surgical practice. London, Edinburgh, and Dublin no longer act as exclusive centres, to which converge the surgical patients from the three divisions of the United Kingdom. Excellent surgical hospitals and homes, and competent and able surgeons, are found nowadays in all provincial towns of any size, while many of th ts and advances in surgical technique and surgical methods have had their birth in the country. In my judgment this great change has been wholly beneficial. It has, I believe, been of enormous benefit to surgery itself, and there is abundant evidence in every town to show that it has been the means of conferring untold blessings on the population of our country, both rich and poor.

I venture to think that it is partly to the recognition of this principle of decentralisation by the council of our progressive British Medical Association that I must attribute your kindness in asking me, a provincial surgeon, and not even a very senior member of the Association, to address you to-day. And hence I regard the honour conferred upon me not alone as personal, but as a compliment paid to my colleagues of the Midland branch and of the town of Leicester.

I propose, in using the opportunity now afforded me, to depart somewhat from usual custom and instead of attempting a retrospect of recent surgical triumphs and of advances in surgical technique I would rather try to throw the searchlight of inquiry in the other direction and indicate some of the ways in which these very surgical triumphs may themselves throw light upon physiological and pathological problems and in this way enable surgery in some slight degree to repay something of the debt she owes to these two foundations of her existence. For when we come to consider the enormous number of what are really human physiological and pathological experiments which are performed daily for necessary and well-defined surgical objects and to save life; when we reflect on the great opportunities which the continuous observation of these operation cases affords of looking into the inner processes of bodily function, both healthy and diseased, we are bound to inquire whether we, as surgeons, have in this respect carefully observed all that we might have done and whether we have utilised to the utmost our many opportunities. Thus, to come closely to the matter of my remarks to-day:

THE LARGE INTESTINE.

Consider for a moment the very frequent—nay, the daily—establishment of fistulæ for surgical purposes. The operations of colotomy, cholecystotomy, nephrotomy, cystotomy, with the resulting fistulous openings into bowel, gall-bladder, kidney, and urinary bladder should enable us, if rightly studied, to observe something of what goes on in the hollow viscera, the biliary canals, and the urinary tract, when the fæcal stream or the biliary or urinary flow is wholly or partially diverted from its normal course. We will consider the fistulous opening in the bowel, established by the operation of colotomy, first. I have in several of these cases tried to ascertain what occurs in the bowel below the colotomy opening by means of the introduction of some insoluble, innocuous pigment, such as hollow suppositories containing a few grains of sterilised indigo or carmine, and will record the results in several cases.

CASE 1.—This was a case of cancer of the sigmoid colon with obstruction. About six inches of the bowel were removed with the growth and partial end-to-end anastomosis was performed, but owing to the patient's condition from obstruction a colotomy anus was also established. A week later, after recovery, a carmine suppository was introduced into the rectum. A white gauze plug inserted into the lower colotomy opening showed distinct carmine colouration within 24 hours and this colour continued to be noticeable for several days after the suppositories were discontinued.

CASE 2.—The second case was one of advanced cancer with almost complete obstruction high up in the rectum. Here again, after inguinal colotomy, an indigo suppository placed within the rectum was followed by the appearance of indigo at the colotomy lower opening within 24 hours. Here the indigo had passed through the malignant stricture.

CASE 3.—This case was one of inguinal colotomy for cancer of the rectum, with ulceration into the vagina. A suppository containing powdered sterilised litmus was introduced into the rectum on Nov. 28th at 8 P.M. The bowels were moved through the upper colotomy opening on Nov. 29th and 30th, and on the 30th the white gauze plug in the lower colotomy opening was stained blue; the blue colour turned red on the addition of acid, thus showing not only that the litmus had traversed the sigmoid flexure, through the stricture, from the rectum, but also demonstrating that the intestinal mucus, and the secretion of the large intestine, is alkaline in the absence of fæcal matter.

CASE 4.—This case is of peculiar interest. An operation for acute appendicitis with abscess, six months previously, had resulted in a fistulous opening into the cæcum, which discharged a very little fæces in the right iliac region when the patient assumed the upright position. While recumbent practically the whole of the fæces was passed per anum. Before closing the fistula indigo suppositories were administered twice daily on Dec. 12th, 13th, and 14th. Distinct evidence of indigo from the cæcal fistula appeared on the 15th, the bowels having been moved freely on the 13th, 14th, and 15th, and an aperient taken by the mouth on the 12th and 14th. In this case the particles of indigo traversed the whole length of the large intestine within at most three days and during the time that the natural downward passage of fæcal matter was going on and in spite of the active clearing of the bowel on two occasions by aperients.

From these cases we learn: first, that in the large intestine in cases in which the fæcal stream has been diverted by a previous colotomy there is an upward current capable of carrying foreign particles, such as powdered indigo, along the bowel and taking about 24 hours to pass from the anus through the sigmoid flexure to the colotomy opening. The shortest time recorded has been 12 hours. Secondly, that this current is not arrested by the presence of a stricture in the rectum, provided that there is, of course, some patency of channel left. Thirdly, from the case of the girl with the cæcal fistula we learn that it is not essential for this upward current that the fæcal current should be wholly diverted or absent, or that the bowel should be prevented from undergoing brisk downward peristalsis, the effect of an aperient. Fourthly, from the same case we learn that this ascending current takes about three days to pass from the anus along the whole length of the large intestine to the cæcum.

In offering any explanation as to the means by which this upward carriage of pigment particles is brought about we must remember:—1. That in the case of the indigo, at any rate, the particles are insoluble in the intestinal juices. Indigo administered by the mouth is recovered unchanged, as far as microscopic appearance goes, from the fæces, so that the material is conveyed in particulate masses, probably by a mucous steam, and not by the agency of phagocytes or wandering cells. 2. Also the current is absent in the dead bowel and is not due to capillary flow in a closed tube. If, for instance, indigo is inserted into the lower end of a sheep's colon removed after death no ascent of the powder occurs in the tube. 3. Further, even in healthy animals in the absence of any fistulous opening there is some upward flow, though slight, along the bowel. Indigo inserted into the rectum of a guinea-pig may be found when the animal is killed 48 hours later in the fæces higher up the colon. 4. Also, the current is quickened by any influence, such as the administration of an aperient, which acts by increasing peristalsis, or very possibly by increasing the secretion of mucus. This was shown in the last case.

In fact, a consideration of the facts strongly suggests the explanation that the particles of indigo, &c., are carried up the bowel by a mucous current and that while there is a central downward current of solid or semi-solid fæces, caused by peristaltic contraction, there is going on at the same time intermittently, or possibly alternating with the downward peristalsis, an upward peripheral mucous stream, covering and hugging the intestinal mucous membrane and capable of conveying minute particles only along with it. Some sort of upward intestinal current has been suspected in the large bowel and hypothetically spoken of as due to reversal of the peristaltic wave. This is an unlikely explanation from the facts mentioned above—that it is present while the downward peristalsis is going on at its normal rate, and also when the bowel is quite empty of any fæces at all. I venture to think that these facts have a not unimportant bearing on the physiology of the large intestine. By means of such an upward stream the nutritious fluids and particles which are being absorbed out of, or squeezed out of, the gradually solidifying and hardening fæces as they traverse the colon are carried gently upwards into the emptying upper reaches of the bowel and are presented to the free mucous membrane for readier absorption. They, too, have a direct bearing on therapeutics and on the administration of enemata, both nutritive and purgative.

THE FEMALE GENERATIVE TRACT.

We now pass to the consideration of the female generative canal. Here surgical operations on the Fallopian tubes have afforded opportunities for careful observation. In a considerable number of cases during the last two years in which it appeared likely that operation would become necessary on the appendages, after the preliminary douche a little coloured pigment—in most cases purified and sterilis indigo, in a few carmine—has been either placed upon, inserted just within, the os uteri at varying periods up to hours before operation. Careful microscopical examinati of the contents of the Fallopian tubes in these cases h nearly always shown the presence of indigo or carmi particles, while in several cases the pigment has been four on the peritoneal surfaces of the broad ligament, mes salpinx, and the fimbriæ of the Fallopian tubes. This show that the particles are carried from the os uteri below, rig through the uterus and the Fallopian tubes, to the peritone sac around the ovary above. In the case of these pigme particles automobility (such as the spermatozoa possess) i of course out of the question and we must fall back on ciliar action or an ascending mucous stream along the contiguou walls of the mucous canal.

In 22 cases in which careful examination was made of th contents of the Fallopian tubes and peritoneum for th presence of indigo introduced into the os uteri at periods u to within 20 hours before operation there were only four i which no pigment was found. Of these four cases one wa a case of double hydrosalpinx, in which any connexion wit the uterine cavity was difficult or obliterated. In one th indigo had been inserted only 16 hours before operation In two cases the indigo was inserted on the first day o the establishment of the menstrual flow and probably faile to enter the uterus. On the other hand, positive result were obtained in three cases of double pyosalpinx, in one case of uterine fibroid, and in two cases of tubal pregnancy in which rupture or tubal abortion had occurred. One of these is interesting from the fact that the remaining left ovary and tube had been removed two years previously. The indigo was found in the bloody mucous contents of the tube on the uterine side of the rupture and in the blood filling the conception cavity. Indigo was also found in two cases of chronic appendage disease in which the indigo was inserted on the last day of the menstrual period and in two cases of hysterectomy which are of special interest. In one the patient was 70 years old and therefore the uterus was senile. In the other the uterus was removed some months after the artificial menopause produced by oophorectomy 12 months before. These two cases clearly show that this upward mucous stream is not dependent on the functional activity of the uterus, since it occurs in the senile and post-climacteric organ as well as in the actively functional state. In two cases of large ovarian cysts pigment granules were found on the peritoneum and in the contents of the tube dilated and stretched over the cyst wall. In the case of suppurating ovarian cyst with pyosalpinx indigo was found in the pus in the tube. It was also found in three cases of chronic inflammatory disease of the appendages, probably gonorrhœal in origin. In one case of large pyosalpinx and ovarian abscess on one side and hæmosalpinx on the other operation became necessary while the temperature was 104° and 28 hours before operation pus began to escape from the uterus. Indigo was found in the bloody contents of the left tube but not in the pus in the right tube or in that of the ovarian abscess. No doubt the particles were washed away from the uterine opening of the right tube by the flow of matter from the opening.

I desire also to draw attention to the presence of the indigo within the pus cells in one of the two cases of pyosalpinx. The granules were actually ingested by the cells and lay scattered as blue pigment grains in their interior. In fact, we had succeeded in feeding the pus cells with indigo and had produced an *intra vitam* staining. Two explanations are possible. Either the material had entered the blood or lymph stream and had been ingested by leucocytes or phagocytes which had then migrated into the abscess, or the pus cells had ingested the granules *in situ* in the abscess, after the pigment had been carried thither up the Fallopian tube. This will, I believe, prove to be the true explanation and also carries with it the interesting fact that pus cells, as such, after their entry into an abscess are capable of ingesting foreign particles into their interior. In the other three cases of double pyosalpinx examined indigo was found in the pus in the tubes but not in the cells. Now in these cases there was no manifest discharge of matter from the uterus, though the presence of the indigo in the tubes proves that the communication between the tubes and the uterus was still patent. In fact, I believe that this is the case in most, if not all, cases of pyosalpinx. Blocking, temporary and intermittent, no doubt occurs of the lumen of the tube on the uterine side, but bearing in mind how difficult it is, even by operation, to obliterate the channel by any means short of excision I think it very probable that some communication exists in most of these cases of secondary infection of tubes with purulent contents and that an occasional slight escape of pus occurs, with corresponding relief of intra-tubal tension. In fact, the whole subject of tubal regurgitation of uterine contents is very interesting. We know from the artificial production of hydrometra and hydrosalpinx in animals, under aseptic conditions, that regurgitation of the hydrometric fluid from the distended uterus is much prevented by the sudden deviation of direction which the tube takes in passing through the uterine muscular wall. At the same time, no opposition is encountered by the mobile spermatozoa in their upward passage. And we also now know, from the observations I have just described, that foreign particles of a suitable size if introduced into the vagina are habitually carried up the whole length of the genital canal in women. It is not absolutely necessary that the indigo should be inserted into the cervix, for if deposited in the upper vaginal vault it is still found occasionally in the tubes at the operation.

The question of the size of the particles is an important one. Particles up to the size of lycopodium grains are carried up but this seems to be about the limit, as I have found lycopodium (a very few grains) in one case only. This same upward current exists also in animals, for I have repeatedly found indigo particles in the Fallopian tubes of rabbits after insertion of the powder in the vagina. I wish also to record an observation at this point on the question of mucous currents in the oviduct of birds. After dusting indigo on the cloacal opening, or after insertion of the powder within the cloaca in fowls, the pigment was found, not only upon, but also sparingly incorporated in, the egg-shell and I have seen it in the vitelline membrane, thus showing that it had passed up the oviduct. Further observations are necessary to ascertain whether this occurs only at certain periods or throughout the egg-laying period. I feel sure, however, from repeated observations during intra-abdominal inspection of the fimbriated ends of the Fallopian tubes during the menstrual period that regurgitation of menstrual blood and mucus occasionally occurs from the abdominal ostium of the tubes; moreover, blood is sometimes found free in the pelvic cavity without symptoms and apart from any question of tubal pregnancy. In fact, I have no doubt that in many cases of dysmenorrhœa in young women the pain is really tubal in origin and is due to peristalsis of the tube in its effort to overcome this regurgitant wave. The pain, in fact, is due to tubal, not uterine colic.

Let us for a moment consider one other important fact, depending on the establishment of the presence of this upward, utero-tubal, mucous current. Those who are brought in contact with uterine cases know that gonorrhœal and puerperal poisons, although the most important, do not exhaust all the sources of tubal and peritoneal infection. The mere exposure of the upper vaginal tract to dirt, to lotions and ointments, to any substance surgically unclean, by whatever means introduced, has in many cases originated salpingitis and chronic endometritis, and I am not without hope that this picture of the constant upward mucous current which I have described may produce a greater sense of responsibility in surgeons and tend, perhaps, to check some of the indiscriminate curetting operations which are so fashionable and which (while the only treatment in some cases) in others only aggravate the troubles they are supposed to cure. Fortunately, the door, though open, is guarded by the watchful peritoneum. Foreign particles and fluids introduced, as it were, guttatim, by the tiny canal of the tube, if not too virulent, are at once incarcerated and rendered innocuous. But it should surely make us all most careful to know that any powdered substance we introduce into the os uteri will probably be found within 20 hours inside the peritoneal cavity.

[Mr. Bond described his observations on the presence of indigo in biliary fistulæ after it had been given by the month.]

THE URINARY TRACT.

We now pass to the consideration of the urinary tract, from the kidney to the bladder, and from the bladder to the surface, by way of the male and female urethra. We will consider the ureters first. Reverse infection of the pelvis of the kidney so frequently occurs from interference with bladder function by septic instrumentation that the ureter is universally regarded as the usual channel of infection and not the blood stream. When we come, however, to consider the manner of this ureteral infection the successive steps are not so clearly known. In extreme cases of marked obstruction to the outflow of urine from the bladder in which backward pressure of urine leads to dilatation of the ureters and in which the interior of the bladder has become infected, by instrumentation or otherwise, it is, of course, quite possible that the open water-way, by arrest or reversal of current, may explain the upward carriage of infective organisms. At present I have not had an opportunity of testing the transference of indigo to the pelvis of the kidney in these cases. The more important point, however, was, if possible, to determine whether, supposing that from any cause (such as the establishment of a renal fistula) the normal downward current of secretion from the kidney to have been arrested, whether in these circumstances any regurgitation of mucous stream occurs in the normal, or at all events, undilated and competent, ureter.

The following case has an important bearing on this point:—

Lumbar nephrectomy for cystic destruction of the kidney by calculus impacted in the lower end of the ureter.—The calculus was detected by a probe in the ureter at the time of the nephrectomy, but the condition of the patient was such that it was thought wiser to bring the open end of the ureter to the skin surface in the loin and remove the calculus at a later date through a vaginal incision. This was done one week later and a good recovery ensued. After the operation of nephrectomy the bladder was irrigated daily and two drachms of an iodoform emulsion containing sterilised indigo allowed to remain in the bladder. The fistulous opening of the ureter on the loin was lightly plugged with a little white sterile gauze. This and the muco-pus from the ureter were examined daily and on three occasions numerous indigo particles were found showing that here, at all events, a reverse mucous current had passed up the ureter in the absence of any urine.

The position, then, at present is probably this: Given an arrest from any cause of the normal downward current of urine along the ureter it is possible that a backward mucous current may occur, carrying with it any infective organisms or foreign particles, such as pus, or blood cells, or débris, which may be present in the bladder. What we do not at present know is whether this regurgitation occurs in those cases of kidney infection in which there is no direct evidence of arrested secretion. We are not at liberty to assume, however, that even in such cases temporary arrest does not occur. It is, indeed, known that the flow of urine from the ureteral orifices is intermittent in normal circumstances; it is possible that this intermittency may be increased to the point of temporary arrest under pathological conditions. We still have to consider the question of the entrance of infection into the bladder from outside; the conditions, in fact, of the mucous currents in the urethra.

I will first consider the male urethra. The conveyance of infection from the exterior, in the absence of any outside interference, with a normal flow of urine along a healthy urethra is, of course, practically unknown. But, as in the case of the gall-bladder, the frequent performance of suprapubic cystotomy for surgical purposes in the urinary bladder affords opportunities of investigating what goes on in the urethral mucous canal. I have investigated two cases of suprapubic cystotomy in which the bladder was drained by Sprengel's pump after prostatectomy.

Complete prostatectomy.—Oct. 20th, 1904. Bladder drained suprapubically by Sprengel's pump, blood was present in urine for ten days, then clear. On Oct. 31st, ten days after operation, indigo was inserted within the urethra a quarter of an inch from the meatus in the eye of a Jacques's catheter, and again two days later. The urine drained suprapubically was collected daily and the sediment examined. Indigo grains were found sparingly in the deposit.

Noticing the difficulty in finding such a minute quantity of indigo in such a large quantity of fluid and the labour involved in searching for it, in the next case I adopted a somewhat different technique.

Prostatectomy for adenomatous prostate and suprapubic drainage of the bladder by Sprengel's pump.—March 2[illegible]th, 1905. The urine remained blood stained for one week after operation but when clear, eight days later, a little sterilised indigo was inserted into the penile urethra just within the meatus on one occasion only, no urine having been passed per urethram. A small piece of white sterile gauze was placed at the bottom of the suprapubic tube or silver cannula and this served as a filter through which the urine and vesical mucus passed before being drawn out by the aspiration of the small inner glass tube through the suprapubic opening. The gauze was removed 24 hours later, and a cover-glass preparation taken of the mucus and urine which it contained. Bright blue indigo granules were freely found in varying sized particles.

Now, since all source of accidental contamination from outside was avoided by a dressing over the suprapubic opening, the indigo can only have gained access to the interior of the bladder by traversing the urethral canal. Further, we must remember that in both these cases no instruments had been passed and that the urethra was uninjured, at any rate up to the triangular ligament and prostatic portion. The main point, of course, being that all passage of urine had been arrested for some days along the mucous canal. I have also tried inserting indigo within the urethra alongside of a catheter retained in the urethra and bladder, *in cases where it has been necessary* for surgical reasons for some days to drain the bladder through a tied-in catheter. In several of these cases I have recovered the indigo from the urine flowing from the catheter, showing that the material has passed centripetally along the urethra to the bladder. I do not feel, however, that much stress can be laid on this, as there is always more or less to and fro, or inward or outward, movement of any instrument tied in the bladder, it tends to be expelled and is passed back again and re-secured, as the movements of the patient alter its position and it is thus quite possible that, by friction of the instrument against the wall of the urethra, any material might be mechanically conveyed, in successive waves, along the urethra to the bladder.

This objection does not, of course, apply to the previous cases in which no instrument was used; but, at any rate, the experience of the latter case shows how easy it is for infection to be conveyed from a dirty meatus alongside a retained instrument into the bladder; for if inorganic particles can float, as it were, in the mucous stream which is set up between the instrument and the urethral wall and are carried thus backwards into the bladder infective organisms can do the same. It is not necessary to assume that they must be conveyed on the point of, or by, a dirty instrument; they may reach the bladder by way of the urethra from the surface at the meatus after the introduction of the instrument. In fact, surgeons know well that even though the urine be received by a tube direct from the catheter into some antiseptic fluid without contact with the air, yet it is practically impossible to keep the bladder aseptic for any length of time *in cases in which an instrument traversing the urethra is* tied in the bladder, and I think the above observations throw some light on the manner in which, and the route by which, this infection is brought about. At any rate, they point to the extreme importance of guarding the external orifices and probably careful disinfection of the external meatus and the application of efficient antiseptic filtering dressings at this spot would have a good influence in preventing bladder infection in the manner above described, especially in those cases (and they should be very few) in which it is necessary to tie an instrument in the bladder.

One word as regards the short female urethra. In one case of vesico-vaginal fistula with a very considerable opening, in which it was necessary to perform suprapubic cystotomy and operate from within the bladder, the opportunity afforded by subsequent suprapubic drainage was utilised to trace the urethral mucous stream in the female urethra. A little indigo was inserted just within the meatus and a small filtering plug of sterile gauze inserted in the suprapubic tube through which the urine was draining. Indigo granules were found in the mucus coating this plug when removed six hours later. We have thus traced the reflux passage of inorganic particles of a recognisable substance like indigo from the surface along the urethra to the bladder and from the bladder to the upper end of the ureter. In all cases the important associated condition has been that the normal flow of urine has been diverted. We still require observations on cases of pyelitis made at the time of operation, when the pelvis of the kidney is first explored and in which indigo had previously been inserted into the bladder. Observations on animals will probably be necessary to investigate this point under conditions in which no previous diversion of the urinary flow has been brought about by surgical operation or disease. The mode of infection of the epididymis by the tubercle bacillus or by the gonococcus or pyogenic organisms requires further examination. I have not yet been able to test the mucous current in the vas deferens, but I think it likely that sterilised indigo inserted into the prostatic urethra in suitable cases will be recovered from tuberculous and other abscesses in the epididymis or the vesiculæ seminales. If this should occur then the mucous canal of the vas deferens and not the blood stream will probably be the route taken.

RESPIRATORY TRACT.

With regard to the respiratory tract and the mucous canals in connexion with it, the accessory nasal cavities, the Eustachian tubes, and the bronchi, any observations on this part of the body are all, of course, open to the obvious objection that foreign particles may be, and no doubt are, carried by the air currents and distributed over the mucous surface. I should, however, like to mention one case of chronic otitis media with tympanic perforation in which sterilised indigo was insufflated for four days into the retro-pharyngeal cavity. The *muco-pus flowing from the external* meatus was collected on both sides and on the fourth day showed abundant indigo granules. Of course, it will be objected that owing to some effort of sneezing or blowing of the nose the material was transported up the canals by a blast of air. The patient was instructed to avoid all such sudden expiratory efforts and I am inclined to think that the presence of the indigo in the internal ear is not due to this cause. Supposing, however, that such is the case, it is surely a matter of considerable importance that in, at any rate, cases of perforated drums not only air currents should pass habitually from pharynx to middle-ear but that foreign particles should also find their way up to the Eustachian tubes in the absence, of course, of all instrumentation. The bearing of this on the question of conveyance of infection from pharynx to middle-ear is obvious, though, in the case of tympanic perforation, the important condition of diverted flow is present.

GLANDS.

We now pass to the consideration of the glands with ducts opening on to the surface of the body and the possible conveyance of pigment particles along the ducts, from the skin to the alveoli of the glands. The mammary gland, with it numerous ducts opening on the nipple, is the largest an most important of these glands. In a case of duct cancer the breast for six days before removal of the breast sterilise indigo was rubbed on the nipple twice daily and a simpl dressing of wool was worn. Great care must, of cours be taken to avoid contamination of the exposed breas tissues at the time of the operation, but this, after all, is a *object lesson in surgical technique and the same precautio* in the way of repeated washing and sterilisation of the skin which are taken to prevent contamination by skin organisms will apply to the indigo also. In order to insure absence of contamination I have either coated the nipple and surrounding skin to be excised with a layer of gauze and collodion or, having turned up the flap of skin to be excised, inwards all round the nipple, I have tied this by a purse-string suture, thus leaving only the raw surfaces exposed. The whole breast after removal is laid on a slab with the deep surface uppermost and incisions are made into the breast tissue in the neighbourhood of the ducts and into the portion affected by the cancer. Scrapings were taken from these incisions and indigo granules were found sparingly but from several parts of the breast. Other cases of mammary cancer have yielded the same result. I have also examined unstained sections of breast tissues obtained in the same way in two cases of cystic disease associated with chronic mastitis in which indigo had previously been applied to the nipple and detected it in the breast. In a case of chronic mastitis with a scirrhous nodule in one part of the breast, in which indigo was applied for four days before operation, the pigment was found in the portion of mammary tissue containing the ducts just beneath the nipple, but not in the solid portion invaded by growth.

Now, the importance of this fact, of the conveyance of pigment particles from the skin to the deeper parts of the mammary gland, along the lacteal ducts, lies in its application to the question of the transference of infective organisms by the same route. Here, again, it is a question of conveyance by blood or lymph stream as against transference by mucous *currents along the ducts, and it seems to me* that the demonstration of the passage of inorganic pigment particles by this latter route strongly confirms the suspicion that it is by these duct channels that pyogenic and probably tuberculous organisms gain access to the mammary gland. I feel some hesitation in the present unsettled state of the cancer problem in mentioning cancer in this connexion. All I will permit myself to say is this: that if, in the course of future research the exciting cause of cancer shall be proved to be parasitic, the above observations may stimulate inquiry into the nipple route as a possible channel of infection in cancer of the breast.

CONCLUSIONS.

We have now passed in review the conditions present in the more important mucous canals and gland ducts opening in the interior of the body and in one case in the ducts of a gland opening on the skin surface, and a few general observations bearing on the facts so observed may not be out of place. I think from the observations I have described we may consider it proved that by some means or other, and under certain conditions, particles of an insoluble substance, such as indigo, inserted into the orifices of a mucous canal or duct are conveyed along the mucous channel in a reverse direction to that taken by the contents of the tube, or by the secretion or excretion of the glands along such ducts. The conditions which seem to favour this passage are: some interference with the normal flow of the contents of the mucous tube or duct; some arrest or diversion of secretion, such as is produced by a fistulous opening, though it is by no means necessary that this should be complete. By what agency is this transference of foreign particles brought about?

Ciliary action.—Though present in the upper generative tract, cilia are absent in the lower genital tract, in the intestinal canal, in the biliary ducts, in the urinary tract, and in the ducts or glands opening on the skin.

Muscular contraction.—No doubt irregular or reversed peristaltic contractions in the bowel, if present, would bring about the result. It is, however, suggestive that the ascent of the indigo up the colon is not prevented but rather accelerated by the increased downward peristalsis produced by purgatives. Reverse muscular contractions are as yet, moreover, unknown, or rather undemonstrated in the bile ducts, urethra, and urinary tubes, Fallopian tubes, or in the ducts of glands.

The phenomenon is not due to physical agency alone, such as capillary action. It is absent in the non-living tube. The transference of particles in empty tubes and ducts is one, and there are other reasons before explained, for regarding he mucus which coats the walls of the tube or duct as the ehicle in which the particles are carried. Further observaions are necessary to ascertain whether a reverse current— sort of mucous backwater—is present in all mucous hannels or whether it only exists where the normal outgoing urrent of secretion or excretion is interfered with. Such a ack current is probably present to a certain extent normally hough much increased by any agency, such as a fistula, which starts a flow of mucus from the other end of the canal. The essential conditions, then, seem to be a living tube the walls of which are partially, if not wholly, in apposition and lined by a mucous secretion, while the reversal of this mucous current is favoured by any condition (such as a fistula) which leads to arrest or diversion of the ordinary secretion of the viscus or gland.

The bearing of these remarks on the larger question of infection will be at once apparent. I am inclined to think that in some cases more attention should be paid to mucous channels as routes of invasion rather than to the lymph or blood stream. Thus I have spoken of the large share which such a mucous, as opposed to a blood, infection plays in the diseases of the female generative tract. The rapid ascent of the urethra by the non-motile gonococcus and the colonisation of deeper portions of the tube, apart from direct extension of growth and in the absence of instrumentation or injection, are thus explained. The ascending infections of the kidney by way of the ureter can also be investigated from this point of view. Our knowledge of the causes which produce biliary and urinary calculi is still very incomplete. The facts which point to the importance of diseased conditions of the mucous linings of the excretory tubes in favouring the deposition of concretions are of especial importance from this point of view. And bearing in mind the proved transference of particles, under certain conditions, from duodenum to gall-bladder and from urethra to ureter, I hope that further light may thus be thrown on these calculous diseases. In fact, the burden of my remarks points to the necessity for the active recognition of the importance of all communications between the efferent canals of the body and the external world and thus accentuates the value of personal hygiene and true cleanliness.

Gentlemen, I hope I have not wearied you with these remarks on what may be called surgical physiology and pathology. As I said at first, instead of pointing to new operations or improvements in surgical technique, instead of giving statistical tables indicating case-mortality after operations, I have tried to turn your attention the other way and to glean a few facts from the many opportunities which modern surgery affords, for the observation of fundamental processes of organic life. And yet, without the surgical revolution which we owe to a few great men and which has been one of the glories of our century, these life-giving operations would have been unperformed and the light which they have shed in many a dark corner of the human body would never have shone. Though the public (the mass of our fellow creatures) are only beginning to grasp, as yet very imperfectly, the all-pervading influence which medical and surgical science, and indeed all the sciences which deal with physical and mental efficiency, will assuredly soon exert in the life of the individual, the City, the Nation, and the State; yet it is surely fitting that we medical men, who know these things, should ever recall the services rendered to humanity by the Pasteurs, the Listers, the Kochs, and all those who have done so much to raise our calling to its present proud position—all those who have made these things possible. And how better can we show our gratitude to them than by strenuous individual effort, each of us, in spite of much distraction and scanty opportunity, to add one small fact to the store of garnered knowledge, to bring even one stone to the building of that glorious Temple of Health, the topmost pinnacle of which will only be finished when disease and suffering have been finally vanquished.

TEMPORARY FIXATION OF TESTIS TO THIGH.

A SERIES OF 25 CASES OPERATED ON FOR UNDESCENDED TESTIS.

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THE plan of keeping down the testis after operation in this class of cases by fixing it to the thigh was first demonstrated by me in cases shown at the Medical Society of London[1] on April 16th, 1894. It has been practised and recommended lately by several distinguished surgeons, especially by Professor Rushton Parker[2] and Professor T. Annandale.[3] The latter fastens the testicle by a ligature to the skin of the opposite thigh, probably with a view to pull in the line of the inguinal canal. But the pull is quite direct enough from the thigh of the same side and in the latter case the patient himself can easily relax the tension by flexing the hip. Katzenstein of Berlin in the *Deutsche Medicinische Wochenschrift*, 1902, vol. xxviii., p. 937, described a case in which he fastened the testis to a pedicled flap of skin of the thigh instead of to the fascia lata. I think this is no improvement on my plan. I am indebted for the reference to a very excellent paper on undescended testis by Odiorne and Simmons in the Annals of Surgery for 1904, vol. xl., p. 962. But they have overlooked my cases published eight years before Katzenstein's. I do not believe that any surgeon practically acquainted with my plan would ever afterwards resort to any other. The first step is to free the cord and testis. In many cases this requires the incision of the external oblique used in Bassini's operation for the radical cure of inguinal hernia. There frequently is a congenital inguinal hernia to deal with in these cases and when there is not, incision of the external oblique is sometimes necessary to bring the testicle out of the abdominal cavity and to free it and the cord from deep attachments. It was from Lucas-Championnière's book on hernia published 20 years ago that I learnt the importance of dividing these adhesions and also the comparative ease with which the cord can be separated from the tunica vaginalis high up the inguinal canal.

The main incision I make is over the inguinal canal and the external ring. Two other skin incisions are made in the great majority of cases, one about one and a quarter inches long at the bottom of the scrotum and the other of the same size in the upper and inner part of the thigh adjacent to the scrotal incision. Before cutting the scrotal incision a bed should be made with the finger in the scrotum to receive the testis and the scrotal incision should divide all the structures down to this bed. Something, either a blunt instrument or a piece of gauze, should be passed through this scrotal aperture *immediately, or its different layers will* cease to be opposite one another. The thigh incision should expose the fascia lata.

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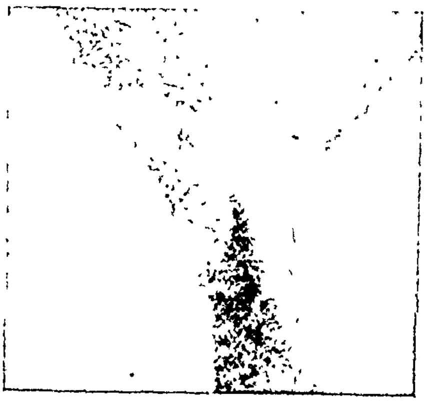
[1] Transactions of the Medical Society, vol. xvii., p. 349; and THE LANCET, April 21st, 1894, p. 1003.

[2] Brit. Med. Jour., 1902, vol. ii., p. 1316.

[3] Ibid., p. 1552.

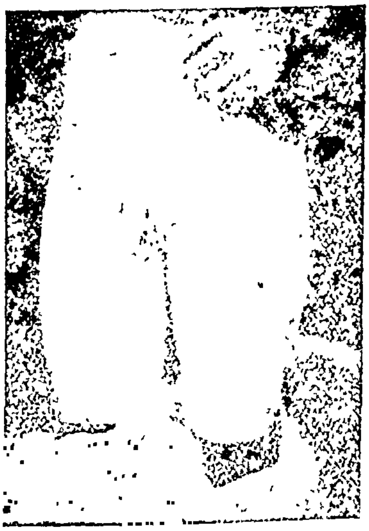
FIG 1



From a young man who had been operated on two years before for undescended testis and right inguinal congenital hernia. Being perfectly comfortable he did not wish the testis to be separated from the thigh.

The testicle and the cord having been thoroughly freed from everything but the musculo-fibrous bands forming the gubernaculum, which are generally attached to the pillars of the external ring, especially the internal pillar, the gubernaculum is divided as far away as possible from the testicle. A pair of forceps is then passed from below upwards through the hole in the scrotum and the gubernaculum is seized by it and pulled right through the scrotum till it can be seen through the hole in the skin of the scrotum. At the same time the tunica vaginalis testis should also be pulled down into the scrotum, though it is not absolutely necessary to keep the testis in its serous bag; indeed, I have often omitted to attend to this point. The posterior borders of the apertures in the skin of the scrotum and thigh are next united by a continuous silkworm-gut suture left long at both ends. Now the gubernaculum testis is sutured with strong catgut to the fascia lata of the thigh; and, lastly, the original silkworm-gut suture is used to complete the union of the skin apertures in the scrotum and thigh to one another. The hernia which is generally present is operated on for radical cure in the way the surgeon thinks best for the individual case. I nearly always do a Bassini's operation, but in very young children have been content with simpler procedures such as that of Kocher.

FIG. 2.



Testis attached to thigh; photographed just before separation.

Even when the testicle has been wholly intra-abdominal I have always succeeded, not only in bringing it into view chiefly by means of the gubernaculum but also in getting it, by persuasion, to come down to the fascia lata without uncomfortable or painful tension. The thigh can always, if necessary, be brought up to the testis by flexing the hip. The patient is sent to bed with his hip flexed but soon straightens it out himself, thus gradually lengthening a short cord, and I repeat that the process is painless. None of my cases have suffered from any complication except an occasional stitch abscess, due either to delayed dressing or omission to remove the silkworm-gut suture from the skin. For dressings is used iodoform gauze wrung out in 1 in 2000 perchloride solution, the gauze being passed behind the scrotum as well as in front, and over the gauze salicylic wool. If the urine wets this dressing no harm is done if it be changed within 24 hours. In older and clean patients it does not generally need to be changed at all until it is time to remove the skin sutures.

I like to leave the testis attached to the thigh for five months. It is rare to find a patient who feels any discomfort from this. One of the above illustrations (*Fig.* 1) is taken from a patient who had been operated on two years before and who, being perfectly comfortable, saw no reason for having the scrotum freed from the thigh. I have had several such cases. In some of the patients both testes were operated on, sometimes separately, sometimes together.

Occasionally I have attached the fibrous coat of the testis directly to the fascia lata and several times the fibrous fold between the lower end of the epididymis and the body of the testicle. But the gubernaculum is the best. Sometimes I have passed the gubernaculum beneath a bridge of fascia lata and then brought its end up again and sewn it to its base. There is an objection to fastening the testis too close to the fascia lata, as then the parts have afterwards to be dissected asunder. In the operation, as I generally do it, they can be separated with a scalpel or sharp pair of scissors, cutting close to the thigh, especially as the testis has a greater tendency to pull the fascia lata up than to be pulled down by the fascia lata. Two or three stitches serve to close the wounds made by the separation, which is effected under local anæsthesia. When I have found no tension at all on the cord and testis I have simply carried the suture fixing the gubernaculum through the bottom of the scrotum with a needle and with the same needle sutured it to the skin of the thigh only, dividing it when removing the skin sutures. But I have only once found the tension so non-existent as to justify this.

The testis generally remains permanently in the scrotum but near its root. The fears about a testis just outside the inguinal canal and on the front of the os pubis being dangerously exposed to injury are according to my observation, and I have inquired carefully into this point, imaginary. For example, one of my patients has had his testis in that position for ten years, playing cricket and other games without the slightest inconvenience.

Do these testes grow when brought down in the scrotum? Undoubtedly some of them do, but not to the size of normal testes. Reproductions of photographs are given of two cases (Figs. 1 and 2). The scrotum and testicles represented in *Fig. 1 had been attached to the thigh two years* and the patient was perfectly comfortable, wishing it to be left alone.

Should the undescended testis be brought down by operation? Ordinarily, if an important organ were out of place and could safely be put into correct position, the indication for operating would be regarded as sufficient. Moreover, that indication would be strengthened if there were reason to believe that not only appearance but function would possibly be improved. Now this is true of the testicle. But there is still another reason for bringing down an undescended testis by operation—namely, that in such a case all the most serious and expensive features of the operation may be required to treat the frequently coexisting hernia.

There are some who advise that when an undescended and small testis occurs in connexion with a hernia, then the testis should be removed. They say it is worthless. The burthen of proof of this view lies with them. I think they have quite failed to sustain it. Even if it be granted that microscopic examination proves such testicles to be incapable of producing normal spermatozoa—and I doubt if it does, even then, however, the microscopic examination of a testicle just removed from the inguinal canal or from the abdominal cavity does not afford any final proof of what that testis might have developed into had it been brought down into the scrotum and kept there for several years. Moreover, there has been known to us now for several years still another strong reason for conservatism in dealing with undescended testes—viz., the fact that other glands, such as the thyroid, the suprarenal, and the thymus, exercise a serious influence on the general state of the body in some more or less uncertain way, generally regarded as by producing an internal secretion.

This last argument has of late been unwittingly misrepresented and weakened. It has been put as if it depended on the truth of a quite unproved hypothesis—viz., that which assigns the duty of influencing the general state of the body to certain cells in the testicle of which the function is as yet unknown. This is an interesting surmise, but the argument in favour of preserving as much testicular substance as possible is quite independent of it and must not be regarded as standing or falling with any such speculation. It is quite conceivable that the internal testicular secretion, if there is one, may be a mere by-product of the manufacture of semen.

Lastly, it should always be remembered that each individual has only two testes. And further, sometimes both are undescended. Such cryptorchids are said to have begotten children, though I am not aware whether the evidence in favour of the statement was very severely tested. There are obvious possibilities of error. So far as I know, only one of my patients has married and become a father. But nearly all my patients are still more or less young. Reflecting on the reasons which have brought most of my patients with this affection to consult me, I think they have been one or more of the following: (1) liability to attacks of pain, sometimes very severe, in the inguinal region; (2) the mother's concern at discovering the absence of the missing testis; (3) the coexisting rupture; and (4) acute strangulation of a congenital hernia which perhaps had given no sign or warning until the day of strangulation. With regard to No. 1, it may not be possible to tell whether the pain is due to a hernia or to the nipping of the testis as it slips in and out of the canal.

In some of my earlier cases in which I have found no hernia I think I may have overlooked a potential one through not slitting up the inguinal canal. With care an unobliterated process of the tunica vaginalis should usually be found in the inguinal canal. Two, at least, of the cases reported in this paper came under my care while acutely strangulated. One, a young man, was quite unaware that he had a hernia; the other, an old man, had his gubernaculum directed outwards after emerging from the external ring and attached to the front of Poupart's ligament, not far from the anterior superior iliac spine. The 25 cases on which this paper is based were tabulated for me by Dr. W. Trethowan, now of Perth, Western Australia, and by Dr. E. Bell Tawse. They stop short four years ago since which I have operated on a number of other similar cases. However, as all have followed practically a similar course ending in a good recovery, it is not necessary to complete and to publish the tables. Analysed they show—

Right side affected in	12
Left ,, ,,	2
Both sides	5 (1 ?)
Not stated	5
Total	25

The presence of hernia was noted in ten, but a potential hernia—i.e., an unobliterated tunica vaginalis in the inguinal canal—existed in nearly all the rest. In two cases the hernia was strangulated. One hernia (in a man aged 61 years) had a part of the bladder in the inner wall of the sac. In this case already mentioned the testicle had emerged from the inguinal canal and then passed upwards and outwards to be fixed near the anterior superior iliac spine, where there was also a hydrocele. It occurred 17 years ago and I removed the testis. On the earlier cases Macewen's operation for hernia was performed, on most of the later, Bassini's. As regards temperature, in only three is it noted to have risen above 100° F. after operation, in only one above 101°, and in not a single case did it rise to 102°. In the great majority the highest point was 99° to 99·6°. In seven cases the charts are missing.[4]

Grosvenor-street, W.

ON THE TREATMENT OF ACUTE SUMMER DIARRHŒA IN INFANTS.

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THE theme of acute infantile summer diarrhœa is a somewhat dispiriting one, nor is the depression so commonly associated with recollections of it at all relieved by a sense of any conspicuous success in its treatment. It is, nevertheless, an important complaint both from its extreme prevalence and for the large share attributable to it in our excessive infantile mortality.

Any form of diarrhœa may occur in infants during summer weather but the particular one I am dealing with is only too readily recognisable without any further specifying or description. Occurring in widespread epidemics when the weather is unduly warm it floods the out-patient department and the wards of every children's hospital and its treatment exacts the major part of the time and attention of both the resident and the visiting staffs. The complaint is known under various names, the two commonest, perhaps, being cholera infantum and acute gastro-enteritis. To both such names, however, there are objections, in that the one implies a connexion with another totally different and distinct disease and the other assumes a pathological condition of the stomach and intestines which is seldom, if ever, verified on post-mortem examination. The symptoms are apt to prove monotonous in their unvarying sameness, being mainly comprised in sudden onset, with vomiting and diarrhœa, speedily followed by profound collapse. One feature, however, distinguishes the complaint from all others ordinarily occurring in these climes and this is the rapidity with which the tissues are drained of their fluids and thereby a healthy infant is reduced in a very few hours to a wasted one with wrinkled skin, depressed fontanelle, sunken eyes, cold breath, and almost inaudible cry.

As an instance of the completeness of this tissue drainage, I may quote a remarkable case that occurred many years ago in the practice of my colleague, Dr. Eustace Smith. This case was that of an infant with chronic hydrocephalus, who was admitted into the Shadwell Hospital with acute summer diarrhœa. In the course of the last complaint the cerebral ventricles became drained of their distending fluid, with the result that both brain and vault of the skull collapsed upon their bases and, with the infant in a vertical position, half a pint or more of water could have been poured into the concavity produced in the skull and there retained. Oddly enough, doubtlessly owing to the integrity of the more strictly vital centres in the medulla, the infant lived for several days in this condition, and at the post-mortem examination the only remains of the brain were a shapeless disintegrated pulp on the floor of the skull. The severity of the drainage of the tissues and the importance of this element in the complaint may be readily gauged when even the cerebral ventricles can be emptied of their normal fluid.

Another point in the disorder may be briefly touched upon from its extreme importance in prognosis and this is the presence or absence of pyrexia. In every case probably the temperature is raised at the start and sinks below the normal in the condition of collapse. Recovery from the last is usually accompanied by a temporary rise of temperature above the normal. Cases where this rise persists and cases where the temperature remains high without the occurrence of collapse are of infinitely graver prognosis than those in which the temperature is normal. It has been pointed out that the heightened temperature may persist when both diarrhœa and vomiting have practically ceased, showing the toxæmic nature of the complaint. In my opinion too little stress has been laid upon this question of pyrexia, and given a normal temperature I seldom despair of pulling an infant through.

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[4] Three patients operated on were shown at the Medical Society of London on Jan. 2[illegible]th, 1903. In one of them, operated on nine years before, the testicle had certainly grown. It had the testicular sensation markedly. (Transactions of the Medical Society of London, vol. xxvi., p. 322.)

The main lines of treatment are the same with all of us and the subject indeed does not permit of novelty. My present object is to discuss briefly such of the ordinary measures as I have found most useful in a practice where I have had only too many opportunities of treating the disorder. When seen in the early stages there can be no doubt as to the wisdom of the usual practice of giving a purgative and temporarily withholding all milk. Such measures will usually cure the milder forms of diarrhœa which in hot weather are apt to drift into the severer one at present in question. Occasionally, too, these same measures may be sufficient to cure cases of the acute form when taken early enough. The purgative commonly given is castor oil, and in the milder varieties of diarrhœa this acts admirably. In the acute form I prefer calomel for the following reasons. When vomiting is present castor oil is not likely to be retained, but there is a possibility of calomel being so, and in this last event the drug may be of service in the vomiting itself. In a small minority of cases the diarrhœa is unaccompanied by vomiting, and in such cases castor oil may induce vomiting and so add a further gravity to the complaint. Calomel, moreover, may act as a slight intestinal antiseptic, either from the products into which it is converted before absorption or from the action of any bile it may transfer from the duodenum into the lower bowel. Further, it may act indirectly as a diuretic, a consideration of no small importance where the renal functions are inefficient or wholly in abeyance. The chief use of the calomel is, of course, to clear the intestine of any deleterious material and to check vomiting, but the subsidiary advantages attaching to it, slight as they may be, should not be overlooked in a complaint where assistance of every kind is so urgently needed. As I have said, there is no question as to the value of a purgative, calomel or otherwise, at the start of the complaint, when the temperature is usually high and the tongue furred. When, however, the vomiting and diarrhœa have persisted for some time and where milk has not been administered or not retained, then a purgative is of doubtful advantage or possibly even harmful.

There is no remedy that has any influence over the disease as an entity and the main treatment is that of the symptoms —vomiting, diarrhœa, and collapse—with careful regulation of the diet when food is resumed.

In the great majority of cases vomiting is the earliest symptom, usually preceding the diarrhœa by an appreciable interval. Fortunately, too, it generally ceases some time before the latter. It is, moreover, of more urgent importance, for whilst it persists no nourishment can reach the infant, the accompanying diarrhœa precluding any attempts at temporary and imperfect alimentation by way of the rectum. For the treatment of the vomiting I know of no remedy so successful as that of washing out the stomach with warm water or a weak solution of bicarbonate of sodium. This is most readily and satisfactorily done by means of a soft tube introduced through the nose. After washing out the stomach I often administer a tenth to an eighth of a grain of cocaine in a teaspoonful of iced water. In slighter cases the cocaine is sufficient by itself but in case of non-success after two doses I do not persist with its use. *Cocaine, indeed,* is a useful remedy for vomiting from many causes in children but its dose has to be regulated carefully. On two occasions I have seen symptoms which were taken to be those of cocaine poisoning from doses of one-fifth of a grain in children one year old.

The foregoing measures can be supplemented with safety by a mustard poultice over the epigastrium and the administration of a mixture of carbonate of bismuth and bicarbonate of sodium, along with a quarter of a minim of dilute hydrocyanic acid. The bismuth and alkali, moreover, aid in checking the diarrhœa as well as the vomiting, but to be effectual they should not be given in less than five grains of each to even the youngest infants. During the time of abstention from food the vomiting is relieved by giving frequent teaspoonfuls of hot water. The hot water is grateful, too, to the infant by relieving the excessive thirst and it helps to ward off collapse. The vomiting is generally most urgent at the onset of the complaint and usually subsides when the food is withheld. *It may recommence* when food is again resumed and the latter should only be given in very small quantities at frequent intervals. If, in spite of these precautions, the vomiting recurs with food, then the latter should be given entirely cold or even iced if necessary. I have frequently met with a hesitation about administering such cold food to infants, mainly based on the ground that it is unnatural at such an early age. To this objection it may be answered that neither artificial feeding nor acute diarrhœa is a natural condition in infancy and unnatural states may have to be met with unnatural means.

The number of drugs that have been advocated for the treatment of the diarrhœa is legion and their very number is proof of their general inadequacy. By trustworthy authorities resorcin, naphthol, salicylate of sodium, salicylate of bismuth, salol, carbolic acid, tannigen, and numerous other drugs have been advanced as almost specifics, but trial of most of them would not lead me to place any great reliance on any one of them. Regarding one class of drugs, the direct astringents, I concur in the general agreement that they are of little or no value in the early stages of the disorder. They find their usefulness in the more chronic diarrhœa that is so often left by the acute disease. When the motions are peculiarly offensive, a not very frequent occurrence in the acute stage, I have found benefit in a mixture containing a minim each of glycerine, of carbolic, and tincture of iodine. This usually corrects the fœtor of the motions in a day, or a couple of days, and when this has been accomplished other measures for controlling the diarrhœa are much more effectual. For the ordinary run of cases I have found nothing more useful than half grains each of grey powder and Dover's powder, given every four hours, alternately with the bismuth mixture mentioned above. After the acute stage is passed, but where diarrhœa persists, if there be no tendency to vomiting, I usually prescribe oxide of zinc and have found this last quite as effective as, if not more so than, the astringents more commonly employed. Along wit continue the powders of mercury with Dover's powde

In the cases with continued pyrexia few succe attained with any treatment. For these I have now co rely on small doses of calomel, an eighth to a tenth grain, with an equal quantity of Dover's powder, given two or three hours, and fancy I have been more succe or less unsuccessful, with such treatment than with other. Here again, too, the wet pack has occasio seemed a valuable addition to the other measures. I cases where the diarrhœa persists a daily irrigation o large bowel with saline solution for three or four day often apparently been of advantage.

In a great many instances the infant is already in a of collapse when first seen and this has to be dealt promptly, independently of the other conditions associ with it. The readiest and most efficacious remed the one most commonly employed, an injection of str nine, and latter-day experience shows that infants collapse will bear much larger doses of the drug were formerly considered either safe or desirable. one occasion an infant, aged ten months, under care in hospital was given as much as two mi of liquor strychninæ by injection. The result was that was desirable; but in spite of this and of the *that bigger doses may succeed* where smaller ones I still think the dose in this instance to have been too l and would not counsel more than one minim for an in of the age in question but would repeat this after a s interval if necessity arose. The strychnine injection can followed by a mustard bath with great and conspic advantage. In the slighter degrees of collapse a strych injection may not be essential, the mustard bath in it being all that is needed. The bath is beneficial in ways: in the first place it is a powerful general sti lant and restorative; in the second, by its local ac it may help to restore the functions of the skin which ar abeyance. The return of sweating is a favourable sign often an early one of impending recovery. After the must bath it is well to wash out the lower bowel with a pin normal saline solution, at a temperature of 105° F. T should be slowly injected, by preference with an irriga but there is no need to use a long tube. This procedure be of service in several ways. It helps to clear the la bowel of any irritating or infectious material that may t to increase the existing toxæmia. Given in the manner dicated, the solution is usually retained for periods vary from half an hour to two hours. Thus some of it is absor and by assisting to restore to the tissues the fluid of wh they have been drained the rectal injection become powerful restorative in the collapse. The hot fluid, aga is of advantage in raising the temperature which may have fallen many degrees below the normal. In states of exhaustion in infants, from any cause, a large warm rectal injection acts as a sedative and will often induce sleep when other means have failed. After the return of the major portion of the injection I am in the habit of advising the employment of a second smaller one, of from three to four ounces. This is usually all retained and often its benefit is speedily shown in an improvement of the pulse. To this second smaller injection can be added any alcoholic stimulant that may be deemed desirable, when vomiting prevents it being given by the mouth. These smaller injections can advantageously be repeated every three or four hours. The other measures can also be repeated if necessary but the collapse when once thoroughly recovered from seldom recurs. Some writers have claimed a remarkable success in the treatment of the complaint by frequent washing out of the stomach and rectum by the methods which I have mentioned. My experience has not been confirmatory of the advantage of such repetition of the measures and I now restrict their employment for the times and purposes already given.

In every stage and condition of the complaint the question of feeding is of paramount importance. There can be no doubt as to the wisdom of the ordinary course of withholding all food during the first 12 hours, or even longer if the state of the infant seems to admit of it. During such time the administration of hot water, mentioned when dealing with vomiting, can be continued with advantage. If the condition of the infant be very urgent small quantities of white wine whey can be tried. This is often retained when every other substance with a resemblance to nutriment will be rejected. It should always be remembered, however, that the amount of nourishment in such whey is extremely small and the amount of alcohol is proportionately large for an infant. The marked improvement in the infant that often ensues from its administration in the early stages of the complaint should not, then, lead to a long continuance with it. Whilst all are agreed as to the advisability of discarding cows' milk at the commencement of the complaint there are differences of opinion as to the appropriate time for its resumption and as to the substitutes to be given for it in the interval. In nearly every case the milk has been directly responsible for the disorder, either through the introduction by its means of bacteria or their products or through its forming a suitable medium for the conversion of the ordinary saprophytic organisms of the intestines into others that are harmful and pathogenic. Clearly, then, on its resumption the milk should be sterilised or pasteurised, as, indeed, it should be throughout the continuance of unduly warm weather. Unfortunately, however, many infants in ill-health have a repugnance to sterilised milk, when not previously accustomed to it, and in such infants sterilised milk will often cause vomiting or be refused. Apart from these considerations, in the early stages of the complaint the digestive system is so disturbed that it is usually totally incapable of dealing with cows' milk at all, and given at such times even sterilised milk may serve as a mechanical source of irritation to the intestines and so prolong the diarrhœa. The digestive organs share in the general and profound inanition which the complaint entails and must themselves be nourished to enable them to perform their functions properly, and how to accomplish this is a main source of difficulty. No assistance is here forthcoming from the use of predigested foods, such as pancreatised or peptonised milks. Such milks are apt to cause looseness of the bowels in healthy infants if too long continued, and under the conditions at present in question the risk is great that under their use the diarrhœa may re-start or be prolonged. The commonest substitutes for cows' milk in the early stages are veal or mutton broth, albumin water, and raw meat juice. Their usefulness at such times is indubitable, but they should not be employed for longer than 24, or at the most 48, hours. I have, it is true, known infants to be kept alive on such substitutes for a much longer time where cows' milk has disagreed but in no single instance have I known a child under such conditions gain weight or in any way be considered to have thriven. Most of them, indeed, died from a slow inanition. Of these substances, the highest in nutritive value is raw meat juice and a fresh home-made preparation is preferable to any of the much-advertised proprietary articles. But any raw meat juice, given in such quantities as to have any real effect in the nutrition of an infant, is apt to give rise to foul, tarry motions after a few days use, a contingency that is far from desirable. Rather than continue for longer than two days with either meat broths or meat juice I would give a trial to one of the patent foods, such as Mellin's given with whey, &c. It is only in emergencies, like the one at present in question, that I have found even an occasional temporary use for such foods. It is very rarely, indeed, that I employ them and I find a good brand of unsweetened condensed milk is far preferable to any one of them. Such a milk is sterile when first opened, is fairly easy of digestion, and when diluted with three parts of water the solution approximates in nutritional value to that of average cows' milk. I usually start with a very dilute solution, one part of the condensed milk to four parts each of barley-water and lime-water, and slightly sweeten, the excess of alkali being useful in the presence of diarrhœa or vomiting. If this is retained and digested the strength of the solution can be increased and after a few days a start can be made gradually to replace the condensed milk by boiled or sterilised cows' milk. If the infant is taking the unsweetened condensed milk well no anxiety need be felt if this substitution cannot be carried out at once, as I have known many infants to be fed with it during the whole of the hot weather or even during many months and still thrive fairly well. But of course a long continuance with it is not to be commended as it is attended with the risks of the probable contraction of rickets and the possible one of scurvy as well. In the difficulties associated with the acute diarrhœa of infants, however, I have found the temporary employment of such milk of the greatest advantage. Many chronic diarrhœas in infants, too, are immediately benefited by the substitution for a few days of unsweetened condensed for ordinary cows' milk. There is a perfectly intelligible prejudice on the part of the profession against condensed milks generally, founded mainly, I believe, on a knowledge of the sweetened brands, most, or all, of which have been righteously condemned. My own preference as to a substitute food for infants is for properly modified fresh cows' milk given, in most circumstances, neither boiled nor sterilised. No unsweetened condensed milk is an ideal food or should replace ordinary cows' milk as a stable one for hand-fed infants, but a temporary trial of a good brand of it can be recommended under the conditions I have indicated. In every case, however, whenever practicable the sooner cows' milk replaces it the better for the infant.

The age of the patients and the severity of the complaint must render the mortality a high one, let the treatment be as prompt and as well devised as possible. Still, the extreme prevalence of the disorder is to be regretted, as it is in a large measure a preventable one, and this with the simplest precautions. As regards the etiology of the complaint, three factors are prominent in the vast majority of cases—the infantile age, hand-feeding, and the presence of unduly hot weather. Severe diarrhœa and vomiting, speedily followed by collapse, can indeed occur in infants at the breast. But such cases are rare compared with the number occurring in the hand-fed and whether all cases are etiologically identical is open to question. One frequent cause for the disorder, then, lies in the food administered and this is, without doubt, the one usually assigned for it—the more thorough bacteriological contamination that cow's milk undergoes in excessive heat. It follows, then, that in hot weather all cows' milk for infantile use should be boiled or, better, sterilised. Whether such boiling or sterilisation of cows' milk should be carried out as a routine practice in all cases of hand-feeding is, however, another question. A contributing cause is the innervating effect upon the digestive system that excessive heat entails and both breast fed infants and adults share with the hand-fed the tendency to simple diarrhœa during summer weather. In many cases of the acute disorder there is a history of its having followed on a simple diarrhœa of no great severity. During the hottest months, then, it is well to lengthen the intervals between the breast-feedings and in hand-fed infants slightly to lessen both the quantity and strength of the cows' milk meals administered. In both classes any discomfort which the infant might suffer from the reduction in his food can be met by small quantities of plain water being given between the meals.

Lastly, no diarrhœa, however slight, in infants during the summer heat should be lightly regarded and still less be considered as even salutary. A castor-oil purge and the withholding of food for a few hours will promptly cure most of such simple cases and prove a safeguard against the acute disease. The few simple measures mentioned will, I believe, if carried out in summer weather, lead to a large reduction in the number of cases and their attending mortality.

Upper Berkeley-street, W.

AN ANALYSIS OF 300 CONSECUTIVE GYNÆCOLOGICAL LAPAROTOMIES.

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PART II.[1]

The remarks forming the whole of this part of the paper were originally incorporated in the table itself, but it was found more convenient to print them separately. The numbers are the same as in Part I. and it may be repeated that the cases are *absolutely consecutive;* every case is included in which the author performed abdominal section during the period of time referred to in Part I. It will be apparent that the remarks on each case should be read in conjunction with the other particulars of it given in the table in Part I.

Remarks.

Case 1.—A multilocular ovarian cyst of the left ovary of the size of the uterus at full term. The tumour had been tapped on five occasions before operation. It contained thick, brown, soapy fluid. The right ovary was healthy. The peritoneum was washed out with normal salt solution twice. There were firm and extensive adhesions, parietal and intestinal.

Case 2.—Removal of uterine appendages. Pelvic adhesions were found.

Case 3.—A tumour of the right ovary of the size of a goose's egg. The left ovary was healthy.

Case 4.—A right ovarian cyst of the size of a large walnut. It burst on pulling it up and about one drachm of pus escaped.

Case 5.—The chief symptom was a constant desire to pass urine with difficulty in passing it. There were multiple fibroids, one especially occupying Douglas's pouch. One ovary was not removed.

Case 6.—The patient was operated upon for cancer of the cervix by supravaginal amputation of the cervix. The opening contracted and it finally closed, causing hæmatometra and double hæmatosalpinx of the part of the tubes immediately external to the uterus. The uterus was dilated to the size of one four months pregnant. An attempt was made to enter the uterine cavity from the vagina; a large vessel was wounded in trying to do so, probably a uterine artery. The hæmorrhage was imperfectly controlled by pressure while preparations were made for abdominal hysterectomy. Both ovaries were cystic and were adherent in Douglas's pouch. The vermiform appendix was adherent to the dilated uterus. The patient seemed fairly well at the end of the operation but had lost much blood previously and she died within 24 hours.

Case 7.—The right Fallopian tube was closed at its outer end and was dilated; it was adherent to the corresponding ovary. A cyst in the left ovary was punctured but the left ovary was not removed; the left Fallopian tube was healthy.

Case 8.—The tumours were both dermoids; that on the left side was of the size of a cocoa-nut and that on the right of the size of a hen's egg. Both were removed without opening the cyst wall.

Case 9.—The tumour weighed five pounds.

Case 10.—230 ounces of fluid had been [illegible] peritoneal cavity about a week before th[illegible] appeared clinically to be either malignant [illegible]

Case 11.—Chronic inflammation of th[illegible] present.

Case 12.—A fixed mass existed in the left iliac region and in the pelvis. It was thought possible that it might be a generally adherent ovarian or more probably a malignant mass. At the operation it was found to be a malignant mass involving, or rather imbedding, the sigmoid flexure. The bowel was opened before the relation of the mass was fully determined. The patient recovered from the exploratory operation but she died from malignant disease nearly a month later.

Case 13.—A large solitary fibroid weighing six pounds. The left ovary was not removed. Twelve days after the operation the patient developed acute mania and remained insane during the month that she was in the nursing home. Soon after she went home she was taken to Brighton and in a very short time all the mental disorder disappeared and she has remained well ever since. I saw her in 1904 and she was then quite well and following her usual occupation.

Case 14.—The left tumour was of the size of a uterus seven months pregnant. It contai[illegible] was adherent to the intestine extensively. [illegible] The right ovary, which was slightly cystic, w[illegible] gg; it also was removed. The peritoneum was washed out with salt solution.

Case 15. The uterus was enlarged by an interstitial fibroid of the posterior wall to the size of a fœtal head at term A dermoid of the left ovary of the size of an orange contained two teeth. The patient had had retention of urine twice before operation.

Case 16.—Tubal pregnancy on the left side causing a large extravasation of blood in the pelvis.

Case 17.—The tumour reached to the umbilicus. An interstitial fibroid in the anterior wall was undergoing mucoid degeneration; it was of the size of a cocoa-nut. There was a subperitoneal fibroid of the size of an orange attached to the top of the uterus; it was not degenerating. The left ovary was not removed. The right ovary was removed with the uterus.

Case 18.—The tumours re[illegible] ovarian tumour on each side. [illegible] old adhesions everywhere and [illegible] had to be removed in order to [illegible] were also adhesions which w[illegible] flexure that a hole was torn in [illegible] by a purse-string suture with Lembert's sutures over that.

Case 19.—This was an emergency case. The pulse was 144 before operation. An intravenous injection of saline fluid was made at the same time as the laparotomy. A fœtus of four months was found free in the peritoneum with a large amount of blood and recent clot. The peritoneum was washed out with saline fluid twice. The patient had had amenorrhœa for eight months till two weeks before admission when she began to have a red vaginal discharge.

Case 20.—A mass of fibroids reached to the edge of the ribs on the left side. The larger part of the tumour was formed by interstitial fibroids and was softer than the upper portion near the ribs. The left ovary was not removed. The right ovary was removed with the tumour.

Case 21.—There was free fluid containing jelly-like lumps in the peritoneum. The main tumour reached to the navel, rising from the pelvis. It appeared to be an ovarian tumour and was evidently malignant, as numerous isolated secondary nodules existed at various parts of the peritoneum—e g., that of the abdominal wall. The patient had had colotomy performed without benefit some time before.

Case 22.—Hysterectomy and ovariotomy were performed.

Case 23.—An ovarian tumour reaching up to the umbilicus with adhesions to the appendix and sigmoid flexure extensively and universally in the pelvis. As it was dissected up about four inches of the right ureter were exposed as if cleaned by a dissection. The cyst was so adherent to the uterus that the uterus had to be removed as well. No sign of the other ovary was seen. No peritoneum was available to cover the cervical stump.

Case 24.—The uterus was enlarged by carcinoma of the body to the size of a uterus two months pregnant. The right ovary was removed with the uterus; the left ovary was not removed.

Case 25.—The left uterine appendages were chronically inflamed, causing persistent pain. The right appendages were normal and they were not removed. There were pelvic adhesions.

Case 26.—The left uterine appendages were normal and were not removed. There were slight pelvic adhesions.

Case 27.—Fibroids. One large interstitial fibroid in the left side of the body of the uterus was softening in the centre; several smaller fibroids were not softening. The whole mass reached half-way between the umbilicus and the ensiform cartilage. The right ovary was healthy and was not removed; the left formed an ovarian cyst of the size of [illegible] the tumour. The mass was remove[illegible]

Case [illegible] sions, and a right hydros[illegible]

Case 29.—The patient [illegible] before the operation. Sh[illegible] were moderate pelvic adhesions.

Case 30.—A left ovarian tumour reached nearly to the umbilicus. Double uterus. Both uteri from the abdominal aspect were normal, except that each had only one set of uterine appendages to it. The left tumour reached forward from behind between the uteri and was adherent to the bladder. The right ovarian tumour was of the size of a duck's egg. The vaginal portion of the cervix was single. There were intestinal, pelvic, and vesical adhesions.

Case 31.—The tumour reached two inc[illegible] the uterus was enlarged by a single sol[illegible] posterior wall. On section the surface of [illegible] The mass removed weighed four pounds. The left ovary was removed with the tumour; the right was not removed.

Case 32.—Ovarian tumours of the size of a child's head a year old. They contained thin, brownish-black fluid. The right tumour wall was very friable. The peritoneum was washed out with salt solution. The patient was very stout; there was a good deal of distension for the first three days after operation.

Case 33.—Multilocular ovarian cyst of the right side reaching half-way up to the umbilicus. It contained brown fluid.

Case 34.—[illegible] escence was uninterrupted till [illegible] of temperature to 104° F. occurr[illegible] remained normal. No explanation of the rise of temperature was to be found but it occurred at about the time when the menstrual period was due. Pelvic adhesions were present.

Case 35.—The Fallopian tube removed contained a three months fœtus; the fimbriated end could not be seen. There was a good deal of blood free in the peritoneum.

Case 36.—Removal of the appendages.

Case 37.—The tumour reached to the umbilicus; it was the uterus enlarged by multiple fibroids.

Case 38.—The right tube formed a hæmatosalpinx; there was no blood in the peritoneum. The left Fallopian tube was dilated, thickened, and closed. A thin flake of this tube was left where densely adherent to the rectum. There was seen a curious short, broad, dense [illegible] testine and the sigmoid flexure. There [illegible] ilated, and thickened. [illegible] gradually rose. Some [illegible] As on Feb. 10th it [illegible] I called in a surgeon [illegible] rent across the seam [illegible] bowel above this was uniting the peritoneum [illegible] distended; all below was collapsed. The surgeon opened the bowel and put in a glass tube but the patient died three hours later while a saline injection was being given under the left breast.

Case 41.—Very long incision. There were multiple fibroids of the uterus; many were lying behind and below the peritoneum. Both ovaries were removed with the tumour. The stitches were all out by the ninth day and the wound was strapped. Five days later a coil of intestine lay under the dressing, rather firmly adherent to the edge of the wound which had burst open. The coil was separated and put back. The general peritoneal cavity was reopened. A small gauze drain was left in for five days. Afterwards recovery was uninterrupted.

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[1] Part I. was published in The Lancet of July 8th, 1905, p. 69.

CASE 42.—A tumour of the left ovary of the size of a uterus at the sixth month; there had been hæmorrhage into the cavity of the cyst. Although the patient recovered well after the operation some months later she had general disseminated cancer of the peritoneum from which she died. The cyst had burrowed into the broad ligament to a moderate extent.

CASE 43.—The tumour contained 40 ounces of fluid; the pedicle was twisted and there was much blood inside the tumour, as well as papillary intracystic growths. The patient was three months pregnant at the time of the operation. A long incision was necessary owing to adhesions to the abdominal wall. The left ovary was healthy. The patient did not abort.

CASE 44.—The right tube, the seat of the pregnancy (tubal mole), formed a swelling of the size of a goose's egg. The patient was watched for seven days in hospital before operation. She was examined on the morning of March 5th, 1902, by the obstetric registrar. Soon after she had pain in the abdomen, vomiting, and rapid pulse. The operation was performed at 2.30 P.M. There were large clots in the peritoneum and much fresh free blood. The tube was adherent rather firmly in the pelvis and to the back of the uterus.

CASE 45.—The right multilocular ovarian cyst reached up to the umbilicus. The left ovarian cyst was of the size of a duck's egg. There was free fluid in the peritoneum.

CASE 46.—A fibroid reaching up to the umbilicus. On section it was found to be undergoing cystic change. There were lamellæ of yellowish material stretching across the cavities, suggesting fatty degeneration. The right ovarian cyst was of the size of a duck's egg; it contained pasty brown material. The left ovary was not removed.

CASE 47.—The uterine appendages (both sides) were removed with the uterus. On opening the uterus a submucous fibroid was found occupying its cavity that might have been removed by morcellement from below, but there were numerous other fibroids interstitial in situation. The whole mass was of the size of a pregnant uterus at three months.

CASE 48.—The tumour was a subperitoneal fibroid of the size of a fœtal head at full term, situated on the anterior surface of the uterus. The patient was five months pregnant at the time of the operation. The tumour was very moveable and was thought to be an ovarian dermoid. The patient did not miscarry.

CASE 49.—The left tube, the seat of the pregnancy (tubal mole), was removed. The appendages on the right side were left alone. The left upper extremity was paralysed for six weeks; ultimately the use of it was completely recovered.

CASE 50.—Chronic inflammation of the uterine appendages. Pelvic adhesions were present.

CASE 51.—Removal of the appendages. The left ovary was firmly adherent to the back of the broad ligament.

CASE 52.—A right ovarian cyst reaching above the navel; it had a very broad short pedicle. The left ovarian cyst was of the size of a hen's egg; it was very adherent in the pelvis. A part of the right tumour was very hard, with hard papillomata on the peritoneal surface and also inside the cyst.

CASE 53.—The left ovarian cyst (suppurating), of the size of a fœtal head at term, pressed down behind the uterus which was moderately enlarged by multiple fibroids. The left tube, dilated to the size of the ball of the thumb, was stretched over the ovarian cyst. This latter was very adherent in the pelvis but it was removed without rupture. It contained very fœtid pus. The right uterine appendages, matted together by chronic inflammation, were also removed. The patient had had a high temperature for several weeks before the operation.

CASE 54.—The patient was very fat. She had bronchitis and emphysema and could not lie down, also chronic Bright's disease. The lower abdominal parietes became œdematous and the sutures there suppurated with gaping of the wound. This condition extended upwards and finally the whole wound separated, so that its edges were eight inches or more apart. Through the interval the intestines were visible, thinly covered with lymph. The edges of the wound could not be kept together. The patient died on the twenty-seventh day after operation.

CASE 55.—Practically unilocular cyst of the left ovary; it contained 14½ pints of dark thin fluid which weighed 18½ pounds. The uterus showed several small subperitoneal fibroids. The right ovary was normal. The patient had a carotid aneurysm on the right side.

CASE 56.—A suppurating ovarian cyst on the right side reaching to the umbilicus had burrowed between layers of the broad ligament so as to be immoveable before enucleation. In removing the base of the cyst three inches of the right ureter were cleaned and exposed; this was seen to contract in vermicular manner on touching. The body of the uterus had to be removed to remove the tumour completely. The left ovary was also cystic and was removed. A gauze drain was left in for five days. The patient was said to have had ovariotomy done at a special hospital 15 years before.

CASE 57.—The patient was watched in hospital for nearly four weeks before operating (tubal mole). The left Fallopian tube was the seat of the pregnancy; the fimbriated end of the tube was open. The left ovary was cystic, it being of about the size of a hen's egg. The right ovary was also cystic and was larger than the left. The right Fallopian tube was normal. The pregnant tube was adherent to the omentum and sigmoid flexure.

CASE 58.—The tumour reached to the left ribs. A very large incision was necessary. The patient had repeated floodings before operation and was intensely anæmic. She was kept in bed for two weeks before the operation. Before the operation on examination the vaginal cervix could barely be reached. There were multiple fibroids and on opening the uterus one large submucous fibroid nearly free in the uterine cavity.

CASE 59.—A left ovarian cyst which reached half way from the umbilicus to the ensiform cartilage. The pedicle was twisted. Green fluid was present.

CASE 60.—A left ovarian cyst of the size of the uterus at term. It contained fluid that would hardly flow through the cannula. The right ovarian cyst was of the size of the uterus at three months. The patient had had amenorrhœa for ten weeks before the operation.

CASE 61.—The tumour reached the ribs on the left side. A month after the operation a loop of bowel passed through a hole in the omentum and became strangulated. Before the condition was recognised the patient became too bad to interfere. The cause was found on post-mortem examination. There were numerous adhesions between the small intestine and sigmoid flexure and the back of the tumour.

CASE 62.—Chiefly cervical fibroids undergoing cystic change and lying almost wholly behind the peritoneum. Four inches of the left ureter were dissected from the lowest part of the tumour. The mass weighed over 13 pounds. (For a full report of this case see the Transactions of the Medical Society, vol. xxvi., 1903, p. 235.)

CASE 63.—The operation was undertaken for a large fibroid of the right broad ligament blocking the pelvis. It was performed a few days before full term. Both mother and child did well. (For a full report of this case see THE LANCET of Jan. 17th, 1903, p. 157.)

CASE 64.—A large interstitial fibroid of the posterior uterine wall not involving the cervix. The right ovary was cystic and was removed with the tumour. The left ovary was not removed. The chief indications for operation were abdominal pain and menorrhagia.

CASE 65.—Double hydrosalpinx; both fimbriated extremities were closed. There were slight pelvic adhesions.

CASE 66.—Left multilocular ovarian cyst, containing 16 pints of greenish yellow fluid which weighed 12 pounds. The patient had had only ten years of married life and had been a widow for 25 years.

CASE 67.—A left pyosalpinx which was adherent to the rectum and the bladder; it burst as it was being separated. A right pyosalpinx was removed entire. The peritoneum was washed out with a saline solution. A gauze drain was left in for five days.

CASE 68.—Uterus enlarged to size at two to three months. Interstitial fibroid was suspected but was not found. The enlargement was simply due to general hypertrophy of the uterine tissue. The patient had suffered from menorrhagia for a long time and had been curetted twice before with only temporary benefit.

CASE 69.—A dermoid tumour of the right ovary which was of the size of the fœtal head at term. The pedicle was twisted. There were omental adhesions. A fibroid polypus attached to the body of the uterus had been removed a month before.

CASE 70.—A right ovarian cyst which extended up to the umbilicus. The pedicle was twisted.

CASE 71.—The tumour reached nearly to the umbilicus. The patient was very anæmic and had had menorrhagia for six years and also severe pain in the lower abdomen and left iliac region. There were parietal adhesions.

CASE 72.—A left ovary which was moderately cystic.

CASE 73.—The whole mass was of the size of the fœtal head at term. There were extensive adhesions in the pelvis and part of the tumour had to be enucleated out of the right broad ligament. The right Fallopian tube was much enlarged and thickened and communicated with the ovarian part of the cyst by an aperture admitting a probe easily.

CASE 74.—The left ovary and tube were removed. There were adhesions to the rectum, the broad ligament, and the back of the uterus. The uterus was adherent to the rectum. The right ovary was adherent to the back of the uterus and the broad ligament; it was freed from its adhesions but was not removed. The right Fallopian tube was normal.

CASE 75.—The right ovary was of the size of a hen's egg and was cystic. The left ovary was not identified. There were dense adhesions to the back of the uterus and in the pelvis. The patient died from peritonitis on the third day. Double pyosalpinx.

CASE 76.—Chronic inflammation of the uterine appendages with firm pelvic adhesions.

CASE 77.—The tumour reached the umbilicus and was somewhat hour-glass shaped. The upper part had undergone cystic change. The right ovary was enlarged and was removed with the tumour; the left was not removed.

CASE 78.—A right ovarian cyst of the size of a uterus at term. Before operation the temperature was 102° F. and the pulse was 112. The patient was taken ill suddenly three days before operation with severe abdominal pain and vomiting. At the operation the pedicle was found to be twisted three times. There was a good deal of free blood-stained fluid in the peritoneum but no peritonitis; the left ovary was cystic and was also removed.

CASE 79.—The uterus was enlarged to about the size of that at three months by carcinoma of the body. There was a fibroid (interstitial) in the anterior uterine wall near the fundus.

CASE 80.—Left ovarian cyst, mainly unilocular, of the size of an orange.

CASE 81.—The tumour occupied the greater part of the abdomen and the mass removed weighed 12½ pounds. There was a large interstitial fibroid of the posterior uterine wall which on section showed mucoid and cystic changes. The length of the uterine cavity in the mass removed was six and a half inches.

CASE 82.—A right ovarian cyst of the size of a child's head; the pedicle was twisted three times. The patient was some ten weeks pregnant at the time of operation and miscarried three days after it.

CASE 83.—Large prominent tumour in the lower abdomen, reaching to the umbilicus. There was no free blood on opening the abdomen; the uterus was close under the wound. The omentum was adherent over the mass behind and to the left of the uterus. The pregnancy was in the left Fallopian tube; it was removed. The fœtus was three inches long. The right Fallopian tube, being thickened and closed, was separated from a mass of adhesions and was also removed.

CASE 84.—Left ovarian cyst of the size of a large orange. The left Fallopian tube was slightly enlarged and closed externally. The right Fallopian tube was enlarged, closed, and adherent to the ovary; the mass so formed was firmly adherent in the pelvis.

CASE 85.—The right Fallopian tube was dilated to the size of a large potato in its outer portion and this was adherent to the intestine, omentum, and abdominal wall. Its pedicle consisted of two and a half inches of undilated Fallopian tube and was twisted several times on itself. The left Fallopian tube was of the size of an orange with only a few adhesions to it. Both dilated tubes were removed without interfering with the ovaries, which were healthy. The patient had two acute attacks of illness with symptoms of twisted pedicle. She was a virgin.

CASE 86.—The patient was doing quite well until the evening of the fourth day when, while an enema was being given, she suddenly became faint and collapsed and died in two hours. The cause must have been either syncope, which not rarely happens in old subjects when an enema is given, or pulmonary embolism.

CASE 87.—The tumour reached nearly to the umbilicus. The left ovary was of the size of a hen's egg, slightly cystic. On section it showed a well-marked large corpus luteum indistinguishable from that met with in pregnancy, though five years had elapsed since the last confinement and she had been a widow nearly five years. The fibroid was interstitial and showed on section mucoid and calcareous degeneration. The right ovary was damaged and bled rather freely and it was thought safer to remove it.

CASE 88.—The right ovary showed commencing cystic change.

CASE 89.—The operation was performed for obstruction due to the presence of a large interstitial cervical fibroid which in the later months prevented the cervix being reached per vaginam on examination. Both mother and child did well. (For a full report of this case see THE LANCET of Jan. 17th, 1903, p. 157).

CASE 90.—Both Fallopian tubes were dilated to the size of the ball of the thumb and adherent to corresponding ovaries. Masses so formed were firmly adherent in the pelvis, especially to the rectum, from which they were separated with difficulty. Some pus escaped on separating the adhesions. A gauze drain was used.

CASE 91.—This was an emergency operation. The patient was admitted with all the symptoms of severe internal hæmorrhage. The pulse was 130, irregular, and feeble. Her face was very pale and she was so bad that intravenous injection of salt solution (four pints) was done while the operation was in progress. A large amount of fresh blood and clot was found in the peritoneal cavity. The pregnancy was in the right Fallopian tube which was removed in the usual way.

CASE 92.—Both ovaries and tubes were removed with the uterus. The right ovary formed a tumour of the size of a goose's egg which on subsequent examination was found to be carcinomatous.

CASE 93.—The patient was laid up with fever and abdominal pain some weeks before operation. There was swelling in the lower abdomen reaching half-way to the umbilicus. On opening the abdomen the surface in view over the swelling consisted of coils of intestine and omentum roofing the underlying swelling. On separating several coils of intestine pus came up from the region of the left tube and what was believed to be the left tube was separated from the left side of the pelvis and removed. The same was done on the right side. A gauze drain was used. The operation was extremely difficult.

CASE 94.—The left Fallopian tube was dilated and tortuous; it was adherent to the rectum and left ovary. The adhesions were separated and the tube was removed. It contained a tubal mole. The left ovary was not removed.

CASE 95.—The freely moveable lump in the abdomen of the size of a child's head was a tumour of the left ovary. The swelling felt in the left side of the pelvis on vaginal examination was a tumour of the right ovary. Both tumours were removed without puncturing. There was some clear free fluid in the abdominal cavity. This patient did quite well as regards this operation but some months later she died with a malignant growth in the region of the liver.

CASE 96.—A left ovarian cyst reaching to the umbilicus; it was densely adherent in the pelvis and to the intestine. The right ovarian cyst was of the size of a duck's egg. Numerous small subperitoneal fibroids were seen on the uterus.

CASE 97.—The tumour reached to the umbilicus. Marked anæmia was present. The right ovary was slightly but definitely cystic; both it and the left ovary were removed with the tumour. The peritoneal surface of the uterus was studded with curious granular elevations varying in size from that of a millet seed to a quarter of an inch in diameter. The appea
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however, elsewhere.
fibroids in its cavity of
fibroids varying in size.

CASE 98.—Both Fallopian tubes were dilated to the size of the thumb and were firmly adherent in the pelvis, also to the omentum, intestine, uterus, and vermiform appendix. The last was adherent at the bottom of Douglas's pouch. There was no pus in the tubes. There were several fibroids in the uterus. The patient was very anæmic and had been losing blood daily for some time before operation.

CASE 99.—A right multilocular ovarian cyst of the size of a uterus at term. It contained clear gummy fluid, coagulating at once on exposure to air. The fluid would not flow through the cannula. The left ovary was healthy.

CASE 100.—An emergency operation for ruptured extra-uterine gestation. The abdomen was full of blood and clots. The pregnancy was in the left Fallopian tube. The ovum had escaped into the peritoneum and was not identified among the clots. An unusual point was the firm adhesion of the pregnant tube to the sigmoid flexure, and the broad ligament could not be transfixed and tied till this was separated. The left ovary contained a well-marked corpus luteum. Intravenous injections of salt solution and brandy were made during the operation.

CASE 101.—Both tubes were dilated and were adherent to the ovaries. The masses so formed were firmly adherent in the pelvis. The right ovary formed a cyst of the size of a Tangerine orange. The pedicle was friable near the uterus on the right side and the ligature cut through there. A ligature was passed with a sharp needle through the uterine tissue and this controlled the bleeding. A gauze drain was employed on account of the oozing. Laparotomy had been done previously by someone else but nothing had been removed.

CASE 102.—There was chronic inflammation of the right uterine appendages. There were slight adhesions.

CASE 103.—Chronic inflammation of the left uterine appendages was present. There were slight adhesions.

CASE 104.—Both tubes were considerably dilated and were firmly adherent to the ovaries and in the pelvis. Removal without bursting was effected. There was no pus but some turbid greyish-white fluid.

tion. A gauze drain was passed into the raw surface left after enucleating. This cyst contained extensive soft papillary growths in its interior.

CASE 106.—The tumour reached nearly to the umbilicus and had caused retention of urine. On opening the abdomen the surface of the tumour presented no irregularity except where there was a small subperitoneal fibroid of the size of a pea. The colour and general aspect were extremely like that of the pregnant uterus. Great difficulty was found in getting the tumour out of the wound. This was only possible after cutting and tying the upper parts of the broad ligaments and with the aid of an assistant pushing up the tumour from the vagina. Afterwards it was found that there was a large soft interstitial fibroid of the anterior uterine wall extending also into the supravaginal cervix.

CASE 107.—An emergency operation; supposed to be a case of ruptured extra-uterine. The patient was extremely collapsed and almost pulseless. Amenorrhœa had lasted for two months. On opening the abdomen it was found to be a case of intestinal obstruction due to a band, which was divided. The uterus was evidently two months pregnant and there was a small simple ovarian tumour of the size of an orange on the right side. This was removed. The patient died about eight hours later. The bowels acted six times between the time of the operation and the patient's death.

CASE 108.—On opening the abdomen a swelling was found reaching a hand's breadth above the pubes. It was roofed over by adherent omentum, sigmoid flexure, bladder, cæcum, and vermiform appendix. On separating these a cavity was opened up containing a mass of clot six inches long and three inches thick, below and behind the uterus. The left Fallopian tube was the seat of the pregnancy and it was removed.

CASE 109.—The ovaries were definitely enlarged, so they were removed with the uterus which contained three interstitial fibroids.

CASE 110.—There was chronic inflammation of the uterine appendages.

CASE 111.—Chronic inflammation of the uterine appendages was present and there were dense pelvic adhesions, especially to the rectum.

CASE 112.—The right tube was the seat of the pregnancy; its outer end was widely dilated and had evidently allowed the mole found in the pelvis to be extruded. The right appendages were removed. The left tube was closed and dilated and so it was also removed. The mole was of the size of a Tangerine orange. An emergency operation.

CASE 113.—Both sets of uterine appendages were removed with the uterus.

CASE 114.—An ovarian cyst containing 108 ounces of thin black fluid. There were dense adhesions between the lower back part of the tumour and the back of the right broad ligament and the back of the uterus. A thin layer of uterine tissue had to be removed to get away the cyst completely. Several ligatures had to be passed through the uterine tissue with a sharp needle in a handle.

CASE 115. A left multilocular ovarian cyst of the size of an ordinary potato was lying in front of the uterus. The right ovary was definitely enlarged by cystic changes but was smaller than the left.

CASE 116.—A right ovarian cyst of the size of a child's head with a twisted pedicle. There were a little free fluid in the abdomen and a great deal of fresh blood in the cavity of the tumour and in the tissues beyond the twist.

CASE 117.—The operation was performed one week before full term. The right Fallopian tube was not dilated but was found to be closed externally. A loop of the left Fallopian tube was removed.

CASE 118.—The tumour reached up to the umbilicus; it had been previously diagnosed as fibroid. There was some fever before operation. Extensive enucleation from between the layers of the left broad ligament was required.

CASE 119.—The tumour reached up to the umbilicus. A tubo-ovarian cyst on each side required enucleation at the lowest part on each side. The gap left was stitched together.

CASE 120.—A lump was felt of the size of a cocoa-nut. It was thought to be a suppurating ovarian. There were high temperature and pain. At the operation found to be due to a mass of omentum and intestine adherent. On separating the adhesions fœtid pus escaped. There was a small hole in the bowel which was made while separating the adhesions. It was stitched up. No cause for the abscess was discovered. The appendix was healthy.

CASE 121.—Both Fallopian tubes were closed; they were not much dilated. There were adhesions to the vermiform appendix and the sigmoid flexure.

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was widely adherent to the bladder and roofed in the tumour. The tumour required extensive enucleation and the ligature of many vessels. The left Fallopian tube was dilated to the size of a thumb and was adherent to its ovary which was also removed. The gap in the right broad ligament was closed with fine silk.

CASE 125.—There was chronic inflammation of the left uterine appendages. The Fallopian tube was dilated and closed. The left ovary formed a cyst of the size of a duck's egg; it was closely adherent to the sigmoid flexure and required scissors to separate it. The right ovary and tube were normal.

CASE 126.—A tumour of the size of
was menorrhagia. The cervix was dilat
was found which could not be removed
ectomy was performed. Both ovaries, which were of the size of a hen's egg, were also removed.

CASE 127.—The patient had had the uterine appendages removed for fibroids some years before. There were coils of intestine adherent closely under the old scar which had to be separated with great care before the general peritoneal cavity was reached. The bowel was damaged over an area of the size of a sixpence. Four Lembert sutures were required. The tumour was
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tumour being in the way. The tun
dense adhesions. The left ureter was seen during dissection. A gauze drain was passed through into the vagina.

CASE 128.—The tumour reached to the umbilicus. There were multiple fibroids. One ovary was left. The mass weighed six pounds.

CASE 129.—A fibroid of the right ovary of the size of a child's head.

There was no free fluid in the peritoneum. The tumour was calcified on its surface in various places. There were no adhesions. The left ovary was healthy.

CASE 130.—The operation was performed for menorrhagia. The left ovary was cystic and of the size of an egg and was removed with the tumour. The right ovary was not removed.

CASE 131.—A left ovarian cyst of the size of a uterus at seven months. The pedicle was twisted. There were slight adhesions; the pedicle was thick and œdematous; it was tied in sections. The right Fallopian tube was dilated to the size of the thumb and was adherent in the pelvis. The right ovary formed a cyst of the size of a hen's egg.

CASE 132.—A small ovarian cyst of the size of a hen's egg, which caused menorrhagia.

CASE 133.—A left ovarian cyst of the size of an orange; it was adherent to the rectum and elsewhere in the pelvis. The right ovary was decidedly enlarged so it was removed as well.

CASE 134.—The left Fallopian tube was dilated to the size of a cocoanut and contained a tubal mole. It was removed. There were many recent adhesions.

CASE 135.—A left ovarian cyst of the size of a uterus at term. It had grown between the layers of the broad ligament and raised the peritoneum from the left iliac fossa, so that the peritoneal surface of the tumour was continuous with that of the abdominal wall some two to three inches to the left of the incision. It was enucleated. Several inches of the left ureter had to be dissected from the base of the cyst. It contained half a bucketful of thin brown fluid. There were papillary growths on the inner surface of the cyst. There were a right ovarian cyst of the size of a duck's egg and a right hydrosalpinx.

CASE 136.—A tumour of the size of a uterus at four months. The right ovary was not removed.

CASE 137.—A left ovarian cyst of the size of a small cocoanut. The left Fallopian tube was dilated. The mass was fixed everywhere in the pelvis and above to the bladder and omentum. The right Fallopian tube was dilated to the size of the thumb and was adherent to the ovary; this was also removed.

CASE 138.—A left ovarian cyst containing nine pints of straw-coloured fluid. There was a right ovarian cyst of the size of a duck's egg.

CASE 139.—Both sets of uterine appendages were removed with the uterus. The lower angle of the wound broke down about two weeks after operation and a sinus formed from which in a few days large quantities of pure bile passed daily. This gradually diminished and the wound finally closed completely.

CASE 140.—A right ovarian cyst of the size of a child's head and containing straw-coloured fluid. There was a left dermoid ovarian cyst.

CASE 141.—A degenerating subperitoneal fibroid of the size of a uterus at term. It was supposed to be an ovarian cyst. The uterus was not lengthened. The tumour was found on section to be undergoing extensive cystic change and contained much jelly-like material. The right ovary was not removed. Omental adhesions were present.

CASE 142.—A large fibroid in the anterior uterine wall which caused a curious twisting of the uterus on its axis and partly beneath the peritoneum, so that the tumour could not be brought out of the wound till the peritoneum had been stripped down. The left ovary was not removed.

CASE 143.—The right ovary was not removed. On section of the fibroid it was found to contain a cavity admitting two fingers lined by smooth membrane.

CASE 144. The patient had had anterior and posterior colporrhaphy and amputation of the vaginal cervix for prolapse two years previously. The right ovary was not removed. The uterus was of the size of a large cocoanut; it weighed two pounds.

CASE 145.—A left ovarian cyst reaching to the umbilicus and a right ovarian cyst of the size of an orange. Both pedicles were twisted. The tumours were adherent in the pelvis, also to the omentum and bladder. Both cysts contained dark thick fluid. The patient had had an early miscarriage, the ovum being of the size of a walnut, on June 12th, 1905.

CASE 146.—A suppurating right ovarian cyst of the size of a large orange. The right Fallopian tube was thickened, enlarged to the size of a thumb, and was adherent to the tumour. There were extensive pelvic adhesions. The cyst burst during removal. The patient had undergone ovariotomy for left ovarian cyst some time before.

CASE 147.—The tumour occupied the greater part of the abdomen. There were multiple fibroids; one posteriorly and one anteriorly had grown under the peritoneum and could not be brought up till the peritoneum was incised. Both ovaries were removed owing to their position.

CASE 148.—The tumour was of the size of a uterus at five months. The right ovary was not removed. There were a good many rather recent adhesions and in the region of the left tube several loculi formed by serous perimetritis. The left Fallopian tube was dilated and the left ovary was twice the normal size.

CASE 149.—The intestines and omentum were matted so as to form a roof to the pelvic cavity. On separating these the right Fallopian tube was found to be dilated, containing dark firm blood clot, presumably a tubal mole. The case was supposed to be chronic salpingo-oöphoritis before operation.

CASE 150.—A right multilocular ovarian cyst of the size of a uterus at seven months; it contained thick black fluid and was extensively adherent in Douglas's pouch. The pedicle was twisted. The uterus was enlarged to the size of a four months gestation by multiple fibroids. The left ovary was three times the normal size and was also removed. On section it showed a well-marked corpus luteum like that of pregnancy.

(To be continued.)

GLOUCESTERSHIRE COMBINED SANITARY DISTRICT.—At the meeting of the Cirencester rural district council held on July 17th a resolution was read from the Gloucestershire sanitary authorities protesting against the action of the Chipping Sodbury rural district council in withdrawing from the combination without communicating with the other authorities.

TUBERCULOUS DISEASE OF THE CÆCUM, WITH NOTES ON A CASE.

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TUBERCULOUS disease of the cæcum must be a comparatively common occurrence, as Fenwick and Dodwell after examining a large number of cases of tuberculosis found that the cæcum was involved in 85 per cent. of all cases of intestinal tuberculosis. The infection of the cæcum may be either primary or secondary, the latter being most common in children and young adults, the former between the ages of 25 and 40 years. There are two main types, the ulcerative and the hyperplastic. If it occurs during the active progress of pulmonary disease it usually pursues an ulcerative or destructive course with varying rapidity, but if secondary to a healed pulmonary lesion, or if it is primary, then the infection is of a mild type and the pathological changes are of a chronic hyperplastic character. It is of these latter cases that I wish to speak and of which I recently had one under my care in the Royal City of Dublin Hospital.

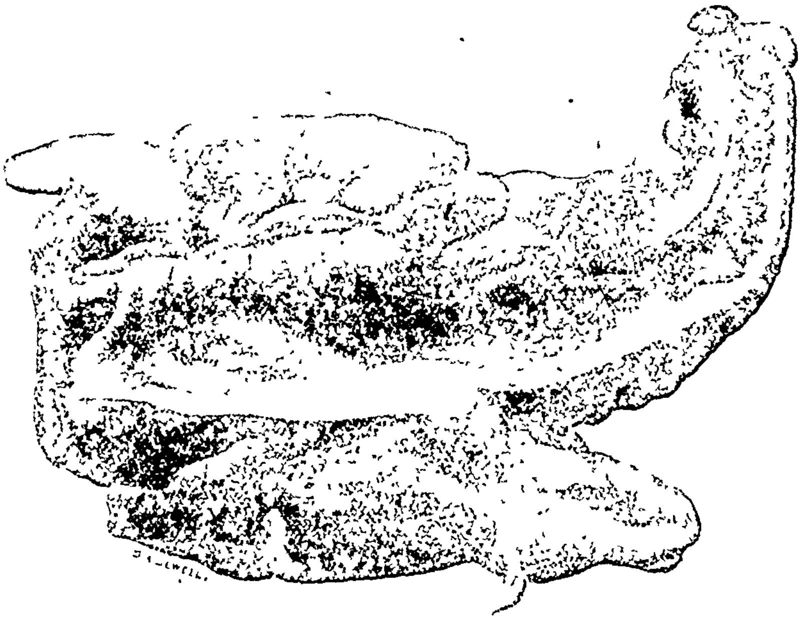
The best account of this disease and of the literature on the subject that I can find is Crowder's article in the *American Journal of the Medical Sciences.* According to him the chronic hyperplastic form of tuberculosis of the cæcum, giving rise to great thickening of the walls and narrowing of the lumen of this part of the intestine, was first described by Durante in 1890. In 1891 Billroth demonstrated a resected cæcum which presented itself clinically as a large hard swelling in the right iliac region, in every respect resembling a carcinoma. Hartman and Pilliet in the same year in Paris called attention to a form of tuberculous typhlitis which accurately resembles a carcinoma and which is not to be distinguished from it by the naked eye. In 1892 Sachs collected 12 cases from the literature and added one of his own. There was no caseation of the retrocæcal glands or ulceration of the mucosa, and the lumen was almost obliterated. Conrath collected 84 cases which had been surgically treated with the low mortality of 16·7 per cent. Crowder himself reported two cases, in the second of which there were combined malignant disease and tuberculosis, there being a perforating tuberculosis of the cæcum which had been secondarily invaded by carcinoma. The mucosa is usually ulcerated but may be merely thickened and covered with papillomatous masses of varying size. The wall of the bowel is thickened, firm and irregular, the lumen being either dilated or contracted; the enlargement and thickening of the cæcum are due to a hyperplasia and not to a compensatory hypertrophy; it is inelastic and rigid from tuberculous infiltration. The tendency is usually for the disease to spread along the colon and not into the ileum, but in cases mentioned by both Esmarch and Sachs there was a similar tuberculous tumour formation in the lower part of the ileum. The retrocæcal glands are practically always involved and later the mesenteric glands also. The appendix is not usually involved to any great extent, but in a case of Thierry and Routier it had undergone changes similar to those of the cæcum.

The characteristic clinical feature of these cases is the development of a tumour which is hard and nodular, moveable but usually only towards the middle line, not in an outward direction, not moving with respiration, and giving a hollow, impaired tympanitic note on percussion. The patients are frequently well nourished but there is usually some disturbance of digestion, attacks of colicky pain occurring at irregular intervals without any apparent cause. "Carcinoma of the cæcum presents symptoms so identical in nature that it is impossible to differentiate the two and even after removal the specimen has often been regarded as malignant until subjected to microscopical examination."

On March 20th last I was asked by my colleague, Dr. T. G. Moorhead, to see a patient of his suffering from a tumour in the right iliac fossa. The following is an account of the case. The patient, a female, aged 23 years, was admitted to the Royal City of Dublin Hospital on March 11th complaining of swelling of the left leg, pain in the left hip, pains in the stomach, palpitation of the heart on exertion, giddiness, headache, and general weakness. One sister died from consumption; several brothers and sisters were also dead but the cause of death was unknown. The patient had been more or less delicate since birth; for the past three years she had been getting worse and she had been confined to her bed, only getting up for an hour or two daily, for some time prior to admission to another Dublin hospital last January. Her chief complaint then was the pain in the left hip; this pain was most marked at night and travelled down the back of the leg to the ankle. She obtained no relief during a month's stay in hospital. For a month before her admission to the Royal City of Dublin Hospital she had been troubled with her stomach; she vomited a few times after taking food and had pain of a stabbing character shooting up from the right side, across the abdomen, and through to the back; it was increased by eating, relieved by pressure, and came on immediately after taking food. She stated that she had always been subject to constipation.

On examination the patient was very anæmic. Her teeth were very carious. The thorax was normal. The left hip was normal; there were no impairment of movement, no pain on movement or pressure, and no deformity. Great pain and tenderness were present on pressure over the spines of the first and second lumbar vertebræ. There was marked but not absolute rigidity of the lumbar spine; pain in this region was caused by downward pressure on the shoulders or vertex. There was no abnormal prominence or angular curvature. The abdomen on inspection appeared to be normal; on palpation very marked hyperæsthesia was present, mapping out in a very beautiful manner the eleventh dorsal segment of Head on the right side. Some pain was present on deep pressure over the right iliac fossa. In this region a large, somewhat irregular tumour could be felt; this was freely moveable in a lateral direction but not in a vertical and was dull on percussion. There was no history suggesting previous attacks of appendicitis or of the passage of blood or pus per rectum. Vaginal and rectal examination revealed nothing further except that the tumour did not appear to be connected with any of the pelvic organs. Owing to the great hyperæsthesia there was considerable difficulty in examining the tumour, so the patient was examined under an anæsthetic on March 23rd. The tumour was then found to be irregular, of about the size of an orange, in the position of the cæcum, freely moveable in a horizontal direction, especially towards the middle line, but only to a slight extent in a vertical direction; it did not move with respiration. The right kidney could be palpated above the tumour. Examination of the urine for tubercle bacilli gave negative results. The temperature was subnormal since admission. The pulse was variable and usually over 90; the respirations also were variable and frequently over 30 per minute.

On March 25th the abdomen was opened by an oblique incision over the right iliac region. The great omentum was found to be adherent to the bottom of the right iliac fossa. The adhesions were easily broken down. A band of thickening was found surrounding the ileum at a distance of about one and a half inches from the cæcum, somewhat rough on the surface and with all the appearance of a typical malignant stricture. The cæcum was then exposed and found to be greatly enlarged and very hard; the appendix also was swollen and hard, especially at its base. These appearances are well seen in the accompanying illustration. As the tumour was thought to be malignant the portion of the omentum which had been found adherent to the iliac fossa was removed. The ileum was divided about one and a half inches on the proximal side of the thickening, the proximal end of the gut being closed by a continuous through-and-through silk suture which was then invaginated and buried by a continuous serous silk suture. The distal end was ligatured, the mucous membrane being swabbed with pure carbolic acid, and wrapped in a piece of gauze. The end of the mesentery was then ligatured in sections and divided, the peritoneum on the outer side of the cæcum and ascending colon was divided, and the whole mass was lifted off the posterior abdominal wall and the colon divided between two clamps. A lateral anastomosis was then made between the ileum and the transverse colon by means of a double row of continuous silk sutures. An attempt was then made to close the cut end of the colon in the same manner as the ileum, but as the peritoneal covering was scanty the serous stitch could not be completed and it was thought safer to fix the gut in the upper angle of the wound which was closed by silkworm gut sutures with the exception of the upper inch. The operation lasted for one and three-quarter hours and was well borne by the patient.



Tuberculous ileum, cæcum, and appendix. The thickened band surrounding the ileum and the corresponding stricture are well shown, also the great thickening of the walls of the cæcum and the stricture in the commencement of the ascending colon, observe also the peculiar shape and appearance of the appendix.

For the first few days after the operation some uneasiness was caused by the fact that the patient's respirations and pulse were abnormally rapid, the former varying from 36 to 50 and the latter from 128 to 148 per minute; but the patient slept well and there was no abdominal tenderness or rigidity. The temperature on the night after the operation rose to 101° F., the next night it was 100°, and the following night 99°; after that it did not rise above normal during her stay in hospital. There was occasional vomiting of small quantities of fluid for the first two days after the operation. The patient was given nutrient enemata every four hours. On the second day she was allowed one drachm of panopeptone every hour and was given a simple enema in the evening which had a fairly good result. The next day the patient was given a soap-and-water enema which produced a good motion and on the following day the bowels acted naturally. From this on the patient made an interrupted recovery; the wound healed by first intention except in the upper part, where a small fæcal fistula formed on the sixth day but closed within a fortnight. The nutrient enemata were stopped on the eighth day after the operation, the patient was allowed bread on the thirteenth and meat on the sixteenth day, she was allowed up on the twenty-first, and left hospital on the thirty-fifth day after the operation. At the time of her discharge the bowels were moving regularly every day without the assistance of any medicine and she had put on weight;

the symptoms present in the lumbar region before operation had entirely disappeared.

On opening the intestine after removal it was found that where the ileum was surrounded by the thickened band there was a distinct stricture reducing the lumen of the bowel to a diameter of half an inch: there was, however, no sign of ulceration or presence of tubercles either in the mucosa or on the peritoneum; from this to the cæcum the wall of the gut was slightly thickened. The walls of the cæcum were enormously thickened, the lumen being merely represented by a small channel. The ileo-cæcal valve had entirely disappeared and the opening of the appendix was reduced to a minute hole. At the commencement of the ascending colon about one inch from where the small and large intestine joined there was a second stricture, the lumen being reduced to about one-third of an inch in diameter. The appendix was about one inch in length, conical in shape, and solid. Most of these points can be well seen in the accompanying illustration. Portions were removed from both strictures and one of three or four slightly enlarged glands found in the loose tissue behind the cæcum. These were cut and examined microscopically; they presented the typical appearances of tuberculosis—giant cells, tubercles, and small patches of caseation. Before the microscopical examination the tumour was thought by all who saw it to be a scirrhous carcinoma and even afterwards on examining the tumour again nothing could be seen by the naked eye to suggest the fact that it was of a tuberculous origin.

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Dublin.

THE RAPID ESTIMATION OF THE AMOUNT OF SUGAR IN URINE.

By R. T. WILLIAMSON, M.D. LOND., F.R.C.P. LOND.,
ASSISTANT PHYSICIAN, ROYAL INFIRMARY, MANCHESTER, ETC.

FOR most clinical work the fermentation method is quite satisfactory for the estimation of the amount of sugar in diabetic urine, providing certain precautions be taken. But it is necessary to wait for 24 hours before the results can be obtained. Sometimes, however, it is desirable to obtain the results of the quantitative estimation of sugar in a few hours or immediately. In such cases the ordinary method of estimation with Fehling's solution is trustworthy but it is troublesome on account of the considerable amount of time required, especially if many specimens of urine have to be examined. Hence many simpler modifications have been employed. Recently I have devised a slight modification in the performance of Gerrard's method which I have found so useful and rapid that for ordinary clinical work I prefer it to all other methods I have tried. The estimation can be made in a few minutes, only a very small amount of urine is required, and the results are sufficiently accurate for most clinical work. The only apparatus required are a test-tube of ordinary size (diameter about five-eighths of an inch); a small narrow burette tube (diameter about three-eighths of an inch and graduated to indicate one-tenth of a cubic centimetre); and a spirit lamp. At my request Messrs. Burroughs, Wellcome, and Co. have kindly prepared "soloids," each equivalent to one cubic centimetre of Fehling's solution, decolourised whilst boiling with a 5 per cent. solution of potassium cyanide (Gerrard's solution).

The rapidity of the method is due to the use of these soloids and to the performance of the estimation with small quantities of the fluids. The estimation is made in the following manner: A little water is placed in the test-tube (about half a drachm or a little more). In it are dissolved, by heating with a spirit lamp, one of the copper sulphate soloids and then one of the alkaline tartrate soloids which are supplied by Messrs. Burroughs, Wellcome, and Co.; together these two soloids form a solution equivalent to one cubic centimetre of Fehling's solution. (The copper in this solution requires 0·005 gramme of sugar for its complete reduction.) Then one of the potassium copper cyanide soloids (already mentioned) is dissolved by heat in the same fluid. The urine which has been placed in the burette tube is rapidly dropped into the boiling fluid in the test-tube until the blue colour of the solution disappears. The amount of urine used is read off from the graduated burette. This quantity must therefore contain 0·005 gramme of sugar. The percentage of sugar can then be easily calculated. When the amount of sugar present is small the urine may be employed undiluted; when the urine contains much sugar or when greater accuracy is desirable it is best to dilute the urine (1 in 10).

The following are the advantages of this simplified method. 1. The estimation can be made very rapidly; only a few minutes are required. (As in the ordinary method of performing Gerrard's test, the oxide of copper is dissolved by the potassium copper cyanide as soon as it is reduced from the Fehling's solution by the saccharine urine and hence the troublesome waiting for the copper oxide precipitate to subside is avoided.) 2. The method can be employed when only a very small amount of urine is available. 3. The estimation can be made easily when the urine only contains a very small amount of sugar. These specimens are very troublesome when the ordinary method of estimation with Fehling's solution is employed.

The use of the soloids saves the time required for accurately measuring the test reagents. The soloids are dissolved whilst the fluid is being heated. The performance of the test with small quantities of the fluids diminishes the time required for boiling the solution; the use of the narrow burette tube increases the accuracy of the measurement of the amount of urine required in the test and thus compensates to some extent for the loss of delicacy through the use of small quantities of fluids. When greater accuracy is desired, one of the cyanide soloids may be dissolved in water in a second test-tube and this solution may be used as a standard of the exact tint to which the mixed Fehling's solution and double cyanide (in the first tube) should be reduced by the addition of the diabetic urine.

Although there are many other rapid methods of sugar estimation, I have ventured to record the modification just described since I have found it so useful in medical practice.

Manchester.

A CASE OF PULMONARY EMBOLUS WITH SOME PECULIAR FEATURES, OCCURRING SHORTLY AFTER NORMAL LABOUR.

By R. J. WAUGH, M.R.C.S. ENG., L.R.C.P. LOND.,
ASSISTANT MEDICAL OFFICER, BETHNAL GREEN INFIRMARY.

A WOMAN, aged 25 years, a healthy multipara, pregnant at full term, was admitted to the Bethnal Green Infirmary on Nov. 16th, 1904. The second stage of labour was well advanced at 11 P.M. on the 17th when I was called to see her. On my arrival I found the fœtal head already distending the vulva and a few moments later the child, a full-time, healthy, male infant weighing 8 pounds, was born. I expressed the placenta almost immediately and left the patient quite comfortable at 11.25 P.M., 15 minutes after the completion of the third stage. At 12.30 A.M., an hour later, I received an urgent message asking me to come at once to see the patient as she appeared to be dying. On reaching the ward I found her sitting propped up in bed gasping for breath. Dyspnœa was extreme, the features were pinched, the lips were blue, and the face and hair were bathed in a clammy sweat. The pulse was rapid, compressible, and extremely irregular. On examining the chest I found the cardiac dulness to be extended as much as an inch beyond the right sternal margin: otherwise irregular and tumultuous action was the only abnormal feature. On auscultation of the upper lobe of the left lung no breath sounds were audible but in their place many fine moist râles could be heard, giving one the impression of an intense local œdema. The percussion note over the corresponding area was distinctly impaired. The lower lobe of the left lung seemed to be but little affected, though the breathing was somewhat faint in this region, especially when compared with the right side of the chest, where the breath sounds might be described as almost puerile in character, so much were they increased. From the commencement of the attack (which I was informed occurred quite suddenly, the patient complaining of great pain above the right breast and difficulty in breathing) a colourless frothy liquid, at times slightly stained with hæmoglobin, had been coughed up in considerable quantities. There was about half a pint in all. Of specific gravity about 1030, it coagulated on boiling, contained no red corpuscles when examined microscopically, but gave the spectroscopic test for oxyhæmoglobin. As the more alarming symptoms seemed to be due to an acute engorgement of the right ventricle a small venesection was performed, about ten ounces of blood being withdrawn, and five minims of solution of strychnine, together with 20 minims of ether purus, were given hypodermically, weak brandy and water being ordered by the mouth, in teaspoonful doses, as the respiratory distress rendered swallowing very difficult.

The patient's condition having undergone a slight improvement I left her about 4 A.M., giving instructions that the hypodermic injections should be continued as directed and that I should be sent for immediately if any change for the worse took place. To my surprise I heard no more of the patient until I made my usual visit to the ward on the following morning at 10 o'clock. She was then resting quietly; all signs of dyspnœa had disappeared and, except for some facial pallor and slight exhaustion, she seemed to be none the worse for her experience of the early hours. On examination of the chest a few moist râles could still be heard over the affected area while all signs of cardiac dilatation had vanished and at 4 o'clock on the same afternoon the chest, being again examined, this time in company with one of my colleagues, was pronounced by him to be normal. From this time onwards the puerperium was uneventful, save for the development of a small, superficial mammary abscess which rapidly yielded to appropriate treatment, and the patient was allowed up on the twenty-first day and discharged herself from the infirmary two days later.

As regards a diagnosis, dyspnœa coming on suddenly after labour in a healthy woman such as this patient, taken together with the physical signs present during the attack, seemed to me to point to an embolus of uterine origin which had been carried away and become arrested in the pulmonary circulation, while the fact of the signs clearing up so rapidly (all physical signs had disappeared 16 hours after onset) makes it probable that the embolus, if such it were, must have been composed of air rather than dislodged blood clot. If, however, this diagnosis be admitted as possibly a correct one it seems difficult to imagine how the air was introduced into the uterus, since no intra-uterine manipulations were made nor was a douche given either before or after labour. The point about which I feel most interest is as to whether a hurried expulsion of the afterbirth, such as was effected in this case, could have given rise to the condition described, air presumably being sucked into the vagina as the uterus was released from the somewhat powerful grasp necessary to expel a not sufficiently separated placenta; and if this be so, why so lengthy an interval as an hour elapsed before the onset of the disquieting symptoms? Should any of your readers feel sufficiently interested I should be grateful for an expression of opinion upon this, to me, somewhat puzzling experience.

Cambridge Heath, N.E.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF FORWARD DISLOCATION OF THE RADIUS AND ULNA WITHOUT FRACTURE OF THE OLECRANON PROCESS OF THE ULNA.

By F. W. STAUNTON, M.B. DUB.,
HONORARY SURGEON TO WATERFORD COUNTY AND CITY INFIRMARY.

THE patient in this case was a man, aged 45 years, whose description of his accident was to the effect that "while walking quickly downstairs he felt as if he had trod on something slippery; his foot went from under him, he twisted round in order to save himself and fell backwards downstairs, the tip of his left elbow striking the edge of the staircase first." On examination the elbow was seen to be held at an angle of 130°. It could be slightly flexed and extended and permitted a good deal of lateral movement. The head of the radius and the olecranon process of the ulna could be felt lying on the shaft of the humerus about two and a quarter inches above the condyles. It was possible to feel both condyles of the humerus, the olecranon fossa, the coronoid depression, the trochlea, and the capitellum; in fact, the lower end of the humerus could be easily grasped in the hand. There was distinct lengthening of the forearm.

The points of interest in this case were: (1) its rarity; (2) the absence of fracture of the olecranon; and (3) the maintenance of the relationship between the radius and ulna. Attention has been called to this in Treves's "Surgery" by Mr. Marmaduke Sheild who states that "this dislocation is extremely rare," and quotes Canton's case in which the radius maintained its relationship to the ulna. Looking up the literature on the subject I find that there are about 12 recorded cases. Erichsen states that six cases of this dislocation are on record. Rose and Carless state that fracture of the olecranon always occurs in this dislocation. Gould and Warren in their "International Text-book of Surgery" refer to this dislocation as "rare and its occurrence without existing fracture has been doubted; in point of fact the latter complication has been still more rarely recorded." Helferich says: "This is a very rare injury; it was formerly said it never occurred without simultaneous fracture of olecranon. May be produced by a fall or blow on olecranon while arm is in extreme flexion." Hamilton quotes nine cases and states "that it seems to have been in most cases caused by a fall upon elbow while forearm is forcibly flexed." Cheyne and Burghard state that this dislocation "is sometimes met with ...... as result of a severe blow upon back of flexed elbow."

Stimson in his book refers to a case which was under his care in 1895. He says: "The elbow is held at a right angle but can be somewhat flexed and extended; is moveable laterally. The epitrochlea can be plainly felt, also the inner face and edge of trochlea. The overlying flexor muscles of hand having been torn away from humerus, the tip of olecranon is below, and even a little in front of, the trochlea, the inner anterior portion of articular surface of which can also be felt on depressing the skin. The head of radius in front of capitellum; the forearm is markedly abducted. ...... The only other reported case is Wright's. The symptoms were similar."

Waterford.

DISAPPEARANCE OF RODENT ULCER UNDER THE APPLICATION OF THE X RAYS.

BY FREDERICK B. JEFFERISS, F.R.C.S. EDIN.,
M.R.C.S. ENG., L.R.C.P. LOND.

THE successful treatment of rodent ulcer by the application of the x rays is now well established and many cases are on record where a complete recovery has resulted. The same, however, cannot be said of carcinomata, some cases improving for a time but relapsing again or even getting worse as the treatment is continued.

The patient in the present instance was an elderly woman who suffered from an epithelial growth on the left frontal region. The history was to the effect that about two years before she first came under my notice she observed a small pimple at the site of the growth which she injured by accidently striking it against the mantelpiece causing ulceration. She treated it herself with zinc ointment without any benefit and it steadily grew for the two years. When I first saw her the growth was about as big as a five-shilling piece, rounded in shape, and very much raised, the ulcer on the top of the growth being about half an inch above the level of the surrounding skin, so that the whole growth was crateriform in appearance. It was very vascular, several large veins ramifying on the surface, and bleeding was easily induced on manipulation. There was no pain but the growth was very tender and the whole was soft, including the edges of the ulcer, which although heaped up were not indurated; the mass was freely moveable and none of the neighbouring glands were involved. A diagnosis of rodent ulcer was made but it could not be confirmed as the patient refused to allow a piece to be removed for microscopic examination.

I began the treatment with the x rays on March 5th, 1904, giving two sittings a week of five minutes each. No change was noticed until after the fifth application, when the surrounding skin, which was not completely covered by the mask of lead-foil I was using as a shield, showed some signs of inflammation. At the next sitting the ulcer had increased in size and after that the elevation of the growth became less marked as the treatment was continued, until after the sixteenth sitting the ulcer was level with the surrounding skin and of about the size of a half crown. As the reaction was marked the treatment was stopped for ten days and the ulcer was dressed with boric ointment. When next seen by me the ulcer was smaller, showing a healthy healing edge, and after four more applications of the rays it had quite healed, just over three months from the first application. At the time of writing, seven months since the ulcer healed, there is no sign of recurrence and no scar is visible.

Chatham.

IODOFORM AND MERCURY IN THE TREATMENT OF TUBERCULOUS PERITONITIS.

By DAVID SANDLER, M.B., CH.B. EDIN.

THE following case of successful treatment of tuberculous peritonitis with iodoform and mercury seems worthy of being recorded.

On May 25th, 1904, I was called to see a female child about six years of age, who was unable to stand and had been bedridden for over seven months. The treatment of several local practitioners as well as the assiduous employment of all sorts of domestic remedies, so much in vogue in this part of the world, seemed to do no good. The parents of the child regarded the case as hopeless and consulted me simply for the sake of novelty as I had newly arrived here. The patient presented a pitiful appearance. She was reduced to a perfect skeleton, her limbs, both upper and lower, being mere bone and skin. Her face was pinched, sallow, old looking and had a remarkably monkey-like expression. Her forehead was covered with wrinkles. Her lips were coated with a foul mass of yellowish-brown sordes. Her head was studded with large boils, some of which were hard and some were fluctuating. Her abdomen presented a wonderful contrast to the extremely emaciated appearance of the trunk and limbs, being very much distended, hard to the touch, and pigmented. Many small nodular masses could be felt through the skin. Several foul bedsores were seen on the buttock. The fæces were liquid and foul smelling. The morning temperature was subnormal, being 96° F. Sometimes slight fever was present. Immediately I had begun treatment the temperature rose on one or two occasions to 102°. There was no difficulty in diagnosing chronic tuberculous peritonitis. I prescribed powders consisting each of half a grain of mercury with chalk and half a grain of iodoform, one powder to be taken in milk three times daily. I also directed equal parts of ointment of mercury and ointment of iodoform to be rubbed, morning and evening, each time for about ten minutes, over the whole abdomen. Under this treatment, which was continued for several months, the child gradually improved. The boils rapidly disappeared. Already in about two weeks there was a very marked subsidence in the distension of the abdomen with a corresponding disappearance of the small nodular masses When the stools ceased to be liquid and foul smelling I ordered also half a teaspoonful of cod liver oil thrice daily. At present the child is almost perfectly healthy. Her face and body generally present a full, well-nourished appearance. Her gait, however, is somewhat unsteady, due undoubtedly to the fact that she has been confined to bed for a long period and has almost forgotten how to walk.

Constantinople.

MEDICAL MAGISTRATE.—Mr. Charles Augustine Hayman, M.D. St. And., F.R.C.S. Irel., L.R.C.P. Irel., L.D.S. R.C.S. Eng., assistant dental surgeon to the Bristol Royal Infirmary, has been placed on the commission of the peace for the city and county of Bristol.

COST OF SMALL-POX PATIENTS.—At a meeting of the Chard (Somerset) rural district council, held on July 17th, a discussion took place with regard to small-pox and it was decided that should any cases arise in Chard they should be removed to Langport where the authorities would be willing to receive them at seven guineas weekly for each patient.

A Mirror

OF

HOSPITAL PRACTICE,

BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ST. THOMAS'S HOSPITAL.

A CASE OF PRIMARY CARCINOMA OF THE APPENDIX VERMIFORMIS.

(Under the care of Mr. W. H. BATTLE.)

FOR the notes of the case we are indebted to Mr. F. O. Spensley, dresser.

A schoolgirl, aged 14 years, was transferred to Beatrice ward from the gynæcological ward, where she had been admitted under the care of Dr. W. W. H. Tate, on July 15th, 1904. She was sent to the hospital by Mr. T. F. Okell of Long Ditton. Her father was said to suffer from pulmonary tuberculosis but the rest of the family were healthy. She is stated to have suffered from an attack of pain in the right iliac region with vomiting on four occasions. The first illness began on July 13th, 1903, and she was ill for two months. The second, which was the most severe, was in August, 1903, and she was ill for two weeks. The third attack was in September of the same year and also lasted for two weeks, whilst the fourth attack in July, 1904, only lasted for a few days.

On admission she was a healthy-looking, well-nourished girl, presenting nothing abnormal in her general condition. She complained of no pain or sickness. There were some resistance to pressure and slight fulness in the right iliac region over the appendix, otherwise the abdomen was natural.

On July 15th Mr. Battle removed the appendix. An incision three inches long was made midway between the anterior superior spine and the crest of the ilium. The rectus sheath was then opened, the muscle was separated and drawn inwards, and an incision was made through the posterior layer of the sheath and peritoneum. (The area of operation was shut off from the rest of the peritoneal cavity with strips of sterilised gauze.) On opening the peritoneum a large mass of omentum was exposed, matted and extensively adherent to the bowel. This was turned forwards and the appendix was found; it was then separated, not without difficulty, and removed, the stump being sutured into the wall of the cæcum. The parts exposed during the operation were washed with warm sterilised salt solution and returned to the abdomen. The opening in the structures behind the rectus abdominis was closed with interrupted silk sutures. The muscle was permitted to return to its position; the anterior part of the sheath was then closed with interrupted silk sutures and the skin with a continuous horsehair stitch. No enlarged glands were found. The appendix was twisted on itself and closely bound down, there being considerable fibrinous exudation all round it. Measuring about two inches in length, it was congested and its wall and mucous lining were much thickened. It presented two constrictions after removal, one near the distal extremity which cut off a marble-like portion in which was a collection of thick purulent fluid; the other was about two-thirds of an inch nearer the cæcum; and between them was a rounded nodule of about the size of a small marble which presented a yellowish white appearance on section somewhat the colour of a caseating mass of tubercle but of firm consistence. This caused a block in the lumen of the appendix When examined microscopically in the clinical laboratory a report was returned by Dr. C. F. Selous: "Spheroidal-celled carcinoma not arising from mucosa. Deep extension in muscular wall. ? Secondary to a visceral growth." The wound healed per primam. There was no rise of temperature or local pain. The patient left the hospital on July 28th and has since continued in good health.

Remarks by Mr. BATTLE.—Carcinoma of the appendix is more frequent as a primary disease in females than in males and the most striking thing about these cases is the age at which the disease has been found. Almost all the younger subjects were women and the youngest, so far as can be ascertained, was a girl 12 years of age, then one of 15, &c. It is not, however, suggested that it is a common complaint —far from it; only about 40 instances have so far been placed on record.

This is a very good instance of the manner in which cases of carcinoma of the appendix come under the notice of the surgeon. A patient is under treatment for attacks of appendicitis, and after operation some unusual change is observed in the appearance of the excised part which causes a microscopical examination to be made and a report of carcinoma is returned. Or the carcinoma is found at a post-mortem examination, when its presence had been quite unsuspected. The effect is very similar on the distal part of the appendix to that of a stricture of the lumen, and an attack of what appears to be of an ordinary inflammatory nature first draws attention to the fact that the appendix is diseased. This complication of the disease probably explains the fact that carcinoma in this part of the body seldom gives rise to secondary deposits; the patient dies, or the growth sloughs, or the appendix is removed. In a case described by Lejars in 1896 the growth rapidly recurred and disseminated, although at the time of operation the appendix appeared normal before it was cut open.

VICTORIA HOSPITAL, KINGSTON-ON-THAMES.

A CASE OF STRANGULATED CONGENITAL HERNIA CONTAINING A MECKEL'S DIVERTICULUM; OPERATION; RECOVERY.

(Under the care of Mr. J. E. S. BARNETT.)

THE patient, a man, aged 23 years, was admitted into the Kingston Victoria Hospital on the night of July 7th last. He was ruptured two years ago while lifting a gun-carriage when a soldier in India. He went to Bangalore Hospital and was invalided out of the service. This hernia was probably an epiplocele and his recent acute trouble arose from the sudden descent of an enterocele. He had been rowing the same day on the river without a truss. He vomited, was pale, sweating, moaning with pain, and begged to be relieved. Taxis had been tried outside the hospital by a medical man. The tumour extended from the left inguinal internal ring to the scrotum; it was narrow above, broad below, and very tense. Transfixion and subsequent dissection revealed a somewhat thickened sac, on opening which no fluid escaped but a considerable amount of omentum. The loop of gut was congested and tightly distended. A Meckel's diverticulum protruded from the posterior portion of the loop; this was not noticed till reduction was being effected. The canal and the processus vaginalis were very narrow and the neck of the sac barely admitted the tip of the little finger. It was necessary to snick this neck three times before reduction was possible. The vas deferens was so adherent to the back of the sac that no attempt was made to separate it completely. The upper end of the divided neck was twisted and ligatured high up and a ligature was tied round the lower end, the vas deferens being isolated. Sutures were passed between the conjoined tendon and Poupart's ligament. On July 10th the patient complained of slight pain in the wound and of "starvation" diet. There were no serious symptoms. At the end of a week skin stitches were removed and the wound had healed by first intention. His good condition must be attributed to the short period allowed to elapse between the strangulation (7 P.M.) and the operation (11 P.M.) and to the fact that no undue efforts at taxis were perpetrated.

GRIMSBY AND DISTRICT HOSPITAL.

A CASE OF ACUTE DILATATION OF THE STOMACH AFTER AN OPERATION ON THE KIDNEY.

(Under the care of Mr. C. B. TURNER.)

FOR the notes of the case we are indebted to Mr. S. B. Gadgil, house surgeon.

The patient, a married woman, aged 36 years, was admitted into the Grimsby and District Hospital on Jan. 14th, 1905, at 10 P.M., with anuria of three days' duration, sickness, and a temperature of 100° F. She had a history of rigors when at home. On examination a large tumour was felt in the right lumbar region of about the size of a fist, which was fluctuating and tender. Mr. C. B. Turner, who had removed her left kidney a couple of years back, having examined the case, came to the conclusion that she was suffering from pyonephrosis and decided to operate immediately.

Taking into consideration that the patient had only one kidney Mr. Turner simply drained the tumour through the lumbar incision, when a large amount of urine with pus came out. No stone was felt and on account of the nature of the case no more exploration was made. A drainage tube was put in and the patient was sent back to bed. She felt better on the next day. The temperature was 98·4° 12 hours after the operation but the vomiting did not stop. She also passed urine per urethram. After another 12 hours the temperature fell to 97° and the pulse remained very feeble and slow. Stimulants were tried but nothing was done in the way of washing out the stomach for the vomiting which kept on as before. The vomit was reddish, dark, and brown in colour and very profuse in quantity. On the next morning —i.e., 36 hours after the operation—she lost more ground. Her temperature was 96° and she died about eight hours later.

Necropsy.—At the post-mortem examination the kidney had its capsule very adherent, due to inflammation (past), and it contained two stones, one in the pelvis of about the size of a marble and the other in the tissue, which was smaller. There were also two or three suppurating foci in the tissue of the kidney. The pelvis of the kidney was moderately dilated. But the remarkable point was the size of the stomach. The lower curvature of the stomach was very much below the level of the umbilicus and hardly any part of the intestinal canal could be seen. The stomach wall was attenuated, so that when the abdomen was opened and nicked a couple of pints of dirty fluid simply welled out and after tying the opening the stomach was found to be still full of fluid.

Remarks by Mr. GADGIL.—Acute dilatation of the stomach being a rare complication after operations on the kidney I thought it well to record the above case.

The persistent vomiting and the absence of desire for food should have led me to do something for the stomach in the way of lavage but whether it would have been of any use I cannot say. Perhaps someone who has met with a similar case may be able to tell his experience.

That the case was one of acute dilatation is inferred from the fact that the woman never complained of any gastric troubles before and that the anuria was not due to pressure of the stomach contents on the ureter is shown by the fact that she passed urine per urethram *after nephrotomy.* During this operation I believe the pressure upon the ureters was relieved. There was a *stone found in the pelvis* of the kidney which not being taken away at the operation could not have been the cause of anuria. The stomach was left undisturbed throughout the whole course of the complaint.

I have to thank Mr. Turner for allowing me to report the case.

Reviews and Notices of Books.

Squint: its Causes, Pathology, and Treatment. By CLAUD WORTH, F.R C S Eng. Second edition. London: John Bale, Sons, and Danielsson, Limited. 1905. 8vo, pp. 231. Price 6*s*.

THIS treatise belongs to a class of works which are happily becoming more and *more* numerous and in which a surgeon whose opportunities of observation are large selects a particular form of disease, studies its varieties, obtains accurate statistics of age and sex, endeavours to ascertain its pathology, and notes the effects of different methods of treatment. It is only in this way that real advances can be made.

The various opinions that have been held in regard to the causation of squint form an edifying commentary on the effects of more exact knowledge upon our theories of the nature of disease. If even a well educated medical man had been asked so late as at the *middle* of the last century to what cause he would attribute the occurrence of squint he would have replied that it was due to weak-sightedness, imperfect vision from short-sightedness, or some congenital defect of the retina causing the squinting eye to be very considerably inferior in power of sensation to the other. It was known, even at that time, that the muscles presented no appreciable change and it was considered that the defect was occasioned either by some opacity of the cornea or by some lesion of the retina. Additional and subsidiary causes were found in hereditary predisposition, in the child being allowed to hold his book too close to the eyes, in imitation, and in the habit of looking at the point of the nose, and it was noticed that it frequently followed irritation of the nerves or the brain by worms or teething, or inflammation of the brain itself. After the appearance of Donders's well-known treatise, in which he demonstrated the connexion of convergence with accommodation, it was generally believed that hypermetropia was the fundamental cause of the affection. But it was soon ascertained that high degrees of hypermetropia are by no means constantly associated with squint and that although an important factor in the maintenance of that affection when once established, it could not be accepted as the exclusive cause. Mr. Worth now comes forward with another theory which regards convergent squint as the result of an imperfect development of the fusion faculty. This faculty he believes to be acquired as a rule in early infancy, reaching its full development about the sixth year. This view has an important bearing upon the treatment which he adopts. That treatment consists in training the fusion faculty by means of an instrument named the amblyscope, of which he gives a drawing and description. Fusion training, Mr. Worth considers, to be of any material benefit must be undertaken at a very early period. Before the age of five years it may be in suitable cases quickly and easily accomplished. After the age of six, or at the latest seven, years the results are not worth the time and the trouble which they cost. The deviating eye, it is hardly necessary to say, must not be too blind. Divergent squint, Mr. Worth states, presents two distinct varieties, the myopic and the neuropathic. In the myopic form the fusion sense is usually well developed and the squint develops gradually. It may often be cured by the use of appropriate glasses. The neuropathic form is less amenable to treatment by means of glasses and an operation effecting advancement of the tendon of the internal rectus is frequently necessary to remedy the defect. The author cites a number of cases that have been under his care of the ordinary forms of squint as well as others which illustrate the rarer forms of heterophoria that are highly instructive and we commend the book cordially to the attention of every ophthalmic surgeon.

An Atlas of Dermatology, showing the Appearances, Clinical and Microscopical, Normal and Abnormal, of Conditions of the Skin. By MORGAN DOCKRELL, M.A., M.D. Dub., Senior Physician and Chesterfield Lecturer on Dermatology to St. John's Hospital for Diseases of the Skin. With 60 coloured plates. London: Longmans, Green, and Co. 1905. Price 50s. net.

THE scientific study of dermatology has been delayed until comparatively recent years owing to the lack of knowledge of the morbid histology of cutaneous diseases. The microscopic pathology of the internal organs had attained a high degree of perfection before the study of the morbid histology of the skin had even been commenced. Two reasons are given in explanation of this somewhat remarkable fact. Firstly, the symptoms of skin diseases, unlike those of internal diseases, are visible to the eye of the physician and seem at first to be so definite and distinct that the need of histological knowledge is not urgently felt; and secondly, cutaneous diseases being rarely fatal sections from the cadaver are not frequently obtainable. As the clinical study of cutaneous diseases advanced descriptions of naked-eye observations made by various competent dermatologists became so involved and the nomenclature and classification in consequence so vast and intricate that the necessity of histological investigation became increasingly evident. Not until biopsy—i.e., sections of skin for microscopic examination taken from the living subject—was introduced and welcomed as a harmless and almost painless operation did the study of cutaneous diseases begin to make scientific progress in keeping with the advance in other departments of medicine and surgery in the latter part of the nineteenth century. The practical use of this recent development comes into play in the diagnosis and consequently affects the treatment of diseases which may baffle the skill of the most experienced with naked-eye examination alone. Thus, a lupus erythematosus is readily distinguished under the microscope from a lupus vulgaris, yet the very names of these diseases betray their frequent clinical similarity.

Many atlases have been published showing the clinical aspects of cutaneous diseases, and several excellent books, notably the monumental work of P. G. Unna, have been written on the histo-pathology of the skin. So far as we are aware the atlas before us is the first to attempt to combine the clinical and the histological appearances of cases of disease of the skin met with in everyday practice. The International Atlas of Rare Skin Diseases (conducted by Unna, Morris, Duhring, Leloir, and Besnier), which first appeared in 1889, contained in most cases illustrations of the microscopic sections as well as of the clinical appearance of the diseases dealt with, but, as the title informs us, that atlas was concerned only with a few rare diseases. We therefore welcome an atlas which supplies a distinct want at the present day and congratulate Dr. Dockrell on producing one at once so accurate and so artistic. The book is portable, handsomely printed, and contains two additional illustrations of the normal skin, which can be removed for purposes of reference or comparison.

The microscopic plates, with the exception mentioned below, call for high praise. Dr. Dockrell is fortunate to have in Mr. Colhoun a histologist who has reproduced with such careful accuracy the minute details that make up a faithful picture of a microscopic specimen. To understand a section prepared for examination under the microscope it is all important to recognise the varieties of cells met with in the tissue examined—leucocytes and connective tissue, epithelial, mast and plasma cells. With this object Dr. Dockrell has devoted Plate IV. to the representation of cells. The degenerate "balloon cell" which is met with chiefly in herpes zoster is clearly depicted in Plate IV. It is a matter for regret that on Plate XLIII., which deals with herpes zoster, the reader is not referred to Plate IV., because of the two plates the latter has much the better picture of a "balloon cell." The various fungi of the hair and the skin are illustrated in this atlas and we are disappointed to find that these are somewhat blurred in outline; the spores and mycelial segments of the ringworm fungi do not show the sharp definition seen in a stained microscopic preparation, nor are the differential points of the small and large spored ringworm fungus brought out as distinctly as we have seen in many black-and-white drawings in ordinary text-books.

The illustrations of the clinical appearances of skin diseases are highly to be commended, but owing to the method of colour reproduction many of the plates fail to give a lifelike outline and colour. Thus, a greenish-yellow hue predominates in Plate IX. (seborrhœic dermatitis), while the letterpress draws attention to the brick-red colour of the lesions. Again, in Plate VI. (vesicular eczema) the vesicles would scarcely be recognised to be such. These faults, it is true, may be found in all atlases and are not due to an error on the part of the artist. While the majority of the plates in this atlas reach a high level, yet some of the plates fall short of the life-like representation obtained by the four-colour process, known as citrochromy, in Professor Jacobi's portfolio of dermochromes, with which, no doubt, most of our readers are familiar. The only illustration in regard to which we consider that the artist is open to adverse criticism is that of small-pox. The size of this plate is inadequate; the lesions in consequence are so crowded and each is so minute that it is impossible to distinguish the umbilication referred to in the letterpress. The lesions of varicella might also with advantage be enlarged. We mention these few drawbacks because they stand out in an otherwise excellent atlas.

With regard to the letterpress, the author admits that this is somewhat brief but this is certainly an error on the right side. Dr. Dockrell uses few words but these are always to the point. His lucid and convincing style is admirably seen in his differentiation of lichen acuminatus and pityriasis rubra pilaris; the accompanying plates (XII. and XIII.) bear out his contention that in pityriasis rubra pilaris the hair follicle is involved from the first and that the infiltration is greater than in lichen acuminatus, while the epithelium does not undergo the hyaline change met with in lichen.

This atlas will be of use to the practitioner or senior student who has not time or opportunity to undertake courses of instruction in the clinical and microscopic study of dermatology in a hospital or laboratory; it will also form a valuable aid to those more fortunately circumstanced who are enabled to devote the necessary time to the practical study of the subject.

LIBRARY TABLE.

Paludisme et Trypanosomiase. Par A. LAVERAN, Membre de l'Institut et de l'Académie de Médecine. Paris: J. B. Baillière et Fils. 1905. Price 2 fr. 50. Pp. 124.—In this small work we find a most complete *résumé* of the actual state of our knowledge of these two maladies. The section on Malaria, constituting the greater portion of the work, is just what would be expected from its author who is so well known in connexion with this subject. M. Laveran commences by detailing the geographical regions affected by the disease; he then narrates the general conditions favouring its outburst, such as those connected with season, humidity, altitude, and so on. The question of congenital paludism is answered by a possible affirmative. Then the history of the provocative agent is entered upon and the subject is traced from the last century up to the present time. The author, as is well known, in 1880 first described the hæmamœba malariæ and in 1884, in his treatise on "Marsh Fever," advanced the opinion that the parasite had a stage of its being outside the human body and probably in the mosquito. This was ultimately proved to be the case by the researches of Ross, supplemented by those of Grassi, Bignami, Bastianelli, and Manson. The parasite is well described in its different stages, with the manner of its evolution in the body of the mosquito. Mention is made of the experimental proof by T. Manson who contracted tertian ague from an infected mosquito's bite sent from Italy after biting there a patient suffering from that disease. With respect to the question whether there are several species of the hæmatozoon, M. Laveran states that he does not admit this to be the case. The method of the examination of the blood is well described. The author deals with the period of incubation, which he holds to be from six to eight days at a minimum. The clinical forms of the disease are described—the intermittent, the continued, the pernicious, the larval, and finally the cachexial. The description of the pernicious class is particularly lucid. We then come to the various complications that may be met with, namely, those of the spleen, liver, kidneys, lungs, heart, glands, nervous system, bones, and affections of the organs of vision. The relationships of dysentery and enteric fever are discussed, as are also those of tuberculosis, diabetes, scurvy, and small-pox with malaria. After a section on the post-mortem appearances we come to the question of diagnosis and here the importance of an acquaintance with the microscopical appearance of the hæmatozoon is insisted on. The various points in the differential diagnosis are explicitly detailed. A few words on prognosis follow and the section concludes with the subject of treatment. As regards quinine, it is well stated that although it may be better to give it during the apyrexial periods yet we cannot wait to do this in the grave forms of the fever. With respect to prophylaxis the methods are the destruction of the mosquitoes, the protection against their bites, the treatment of malarial patients, and the rendering individuals immune to the disease. The concluding part of the work deals with Human Trypanosomiasis and Sleeping Sickness. The medical history of this disease is first given and the various theories formerly in vogue are described, and then are detailed the steps during which the trypanosoma was finally adjudged to be the cause of the disease. The geographical distribution is shown, the predisposing causes of the malady connected with sex, age, race, and so on, are mentioned, and then we come to the description of the disease in its first and second periods. The pathological anatomy, the description of the parasite, its dissemination by the glossina palpalis, the diagnosis of the disease, and its prognosis and its treatment successively follow. With respect to the last, iron, quinine, and arsenious acid are recommended. As regards serotherapy no definite opinion is expressed as it is still under discussion.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series, No. 14: On a Parasite found in the White Corpuscles of the Blood in Dogs, by Captain S. P. JAMES, M.B. Lond., I.M.S. Calcutta: Office of the Superintendent of Government of India Printing, India. Pp. 12. Price 10 annas or 1s.—The author records in this memoir some observations that he has made on a leucocytic parasite which is not uncommon in the peripheral blood of dogs in Assam. The observations are extremely interesting as there is no previous record in literature of the discovery of parasites of the white blood corpuscles of mammals. Captain James first refers briefly to the work of Danilewsky, Sacharoff, Ziemann and others regarding the leucocytic parasites found in the screech owl, crows, rooks, and magpies, and concisely summarises the researches of Schaudinn on these micro-organisms, according to whom the so-called leucocytozoa of the latter are the resting asexual stages of his trypanosome like parasite, the nucleated mass in which those observers thought the parasite was contained being in Schaudinn's opinion neither a leucocyte nor a red blood corpuscle but an erythroblast to which the parasite has attached itself, and which, with the exception of the nucleus, it absorbs into its own substance. With regard to the parasite which is the subject of this memoir, in June, 1904, the author relates that his attention was directed to a peculiar body in the leucocytes of the blood of a dog by Dr. C. A. Bentley of Assam and in subsequent examinations it was found by the author in the peripheral blood of six out of 45 dogs, either alone or with other parasites. In number the bodies varied a good deal, from one parasite in every 11 polymorphonuclear cells to one in every 64. Especially noted was the presence of nucleated red blood cells in considerable numbers. The blood films were examined, fixed in alcohol, and coloured by Romanowsky's method. The parasites were found to be contained almost invariably in polymorphonuclear leucocytes and it was necessary to stain deeply the films in order to bring out their structure distinctly. They were found to consist of two parts—(1) a definite oblong, almost quadrilateral cytocyst, with (2) a parasite inclosed within this cytocyst. The facts relating to the position of the parasite in the leucocytes and its effect upon them are then narrated. Captain James believes that two forms are always present in the peripheral blood of infected dogs. He thinks that the parasite represents a hitherto entirely unknown form of mammalian blood infection, inasmuch as it is parasitic entirely upon the leucocytes, and suggests for it the name of "leucocytozoon canis." A clear plate accompanies this interesting memoir.

"*Verb. Sap.*" *on Going to West Africa, to Northern and Southern Nigeria, and to the Coasts.* By ALAN FIELD, F.R.G.S. London: John Bale, Sons, and Danielsson, Limited. Pp. 166. Price 2*s.* 6*d.* net.—This little work constitutes an excellent guide on all matters appertaining to the countries named in the title. It opens with a preliminary note on the outfit that an official should provide himself with and we are glad to see that the fact is emphasised that woollen vests must be worn under the body linen in order to obviate "fever." The expenses of a good outfit are put down as £100. A descriptive article on the voyage from Liverpool to Lokoja follows, after which there are eminently practical chapters on the Climate and Health and the Mode of Life in the above regions. Here the reader will find all the essential points for preservation of the health. The precautions to be taken with regard to malaria are excellent; especially valuable are those having reference to mosquitoes. Here we note with pleasure that the mosquito nets are directed to be tucked under the mattress and hung inside the rods or poles and not outside. The remarks regarding sunstroke are equally valuable; stress is laid on the fact that an attack can be caused through the eyes. There is, however, no mention of the advisability of lining the helmet with red cloth, which experience in India has shown to be very efficacious. The book also contains notes on sport, languages, and so on, and, in fact, everything concerning which a newcomer would require information.

JOURNALS AND MAGAZINES.

The Practitioner.—In addition to cases of particular interest narrated by Sir Dyce Duckworth and Mr. A. W. Mayo Robson the July issue of the *Practitioner* has an attractive little series of articles under the heading, The Effect of Tobacco in Health and Disease. Sir Lauder Brunton deals with the heart and the circulation and he consoles the smoker by the reflection that "smoking in moderation does not seem to be injurious to grown-up people." Dr. Norman Dalton, in connexion with the gastro-intestinal tract and tobacco, agrees with Dr. T. Clifford Allbutt that in certain persons a hyperchlorhydria is produced with an intense heartburn which is relieved by food. Dr. James Taylor discusses the effects of tobacco on the nervous system and Mr. W. G. Spencer those upon the mouth and the tongue.

Journal of Anatomy and Physiology. Conducted by Sir WILLIAM TURNER, K.C.B., F.R.S.; D. J. CUNNINGHAM, M.D., F.R.S.; G. S. HUNTINGTON, M.D.; A. MACALISTER, F.R.S.; and J. M'KENDRICK, F.R.S. Vol. XXXIX., Part IV. July, 1905. London: Charles Griffin and Co. Pp. 145. Annual subscription, 21*s.*—The articles contained in this number are as follows: 1. On the Origin of Vertebrates, deduced from the study of Ammocœtes, by Walter H. Gaskell, F.R.S., Part 12. 2. On Pressure Epiphyses, by F. G. Parsons, F.R.C.S. 3. On Imbrication of the Papillary Ridges in Man, by Walter Kidd. 4. Skulls from the Round Barrows of East Yorkshire, by William Wright, F.R.C.S., with six plates. The skulls are described in a very technical manner. For example, Skull 33 is that of a female; it is brachycephalic, hypsicephalic, chamæprosopic, orthognathous, and mesorhine, besides presenting other characteristic features. Skull 46 is a male skull. It is mesaticephalic, orthocephalic, mesognathous, leptoprosopic, and mesorhine. The plates which accompany the article are from excellent photographs. 5. The Anatomy of a Sirenomelian Monster, by Gillman Moorhead, M.D. 6. Cranio-cerebral Topography, by G. J. Jenkins, M.D. 7. The Development of the Retina in Amphibia: an Embryological and Cytological Study, by John Cameron, M.D. Edin., with two plates, Part 3. The author recognises four groups of structures in the inner wall of the retinal cup—namely, germinal nuclei, neuroblast nuclei, spongioblasts, and myelospongium The processes of the cells in the ganglionic and internal nuclear layers emerge from the nuclei and not from any surrounding cytoplasm and the first rudiments of the rods and cones are partly in the form of protrusions of nascent achromatin from the external nuclear layers. This substance attacks the yelk granules and transforms them into clear achromatic "yelk globules." The rod and cone rudiments ingest the pigment of the pigment cells and metabolise it into a substance which stains very intensely with iron alum-hæmatoxylin and is apparently rhodopsin. The so called "oil globule" of the amphibian cone is simply the remains of the original yelk globule. 8. A note on the Variations of the Tibia and Astragalus, by D. Macrae Aitken, F.R.C.S. Edin. 9. On the Limits of the Sensibility to Odours and of the Methods of detecting Emanations, by M. Berthelot. 10. A Curious Abnormality of the Renal Arteries, by Charles R. Whittaker, F.R.C.S. 11. Abstract of a paper on Ossification of the Lower Jaws of Man, by Edward Fawcett, M.B. Edin. This part of the journal also contains the Fifteenth Report on Recent Teratological Literature, by Bertram C. A. Windle, M.D., F.R.S., and the index of the thirty-ninth volume of the journal.

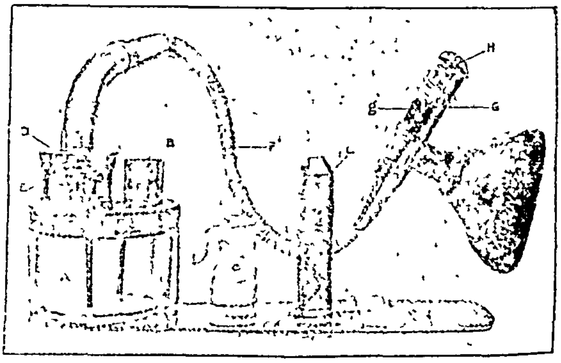
Transactions of the Bombay Medical and Physical Society. Vol. IX., No. 2. April, 1905. Bombay: Printed at the Times Press. 1905. Pp. 23 and six plates.—This issue contains the report of a clinical meeting held in the University Library on April 17th. Among the papers read were two on cases of Leishman-Donovan Disease by Major L. F. Childe, I.M.S., and by Major C. H. L. Meyer, I.M.S., and a most interesting one from the F. D. Petit Laboratory, Bombay, by Dr. R. Row, on Obscure Irregular Continued Fevers of the Typhoid Group and their probable relation with different species of bacilli of the typhocoli race, as seen from the specific bacteriolytic value of blood serums of such cases on various members of the typho-coli group of microbes. This paper is illustrated with excellent plates. The author states that his study of fevers of a continuous type familiar in Bombay—fevers characterised by their atypical and irregular course, by pronounced abdominal and later by typhoid symptoms, with the blood sterile and free from malarial, relapsing, or other parasites—leads him to concur with the views of Major D. B. Spencer, I.M.S. (*Indian Medical Gazette* April, 1900), that apart from the genuine enteric fever (produced by Eberth's bacillus) met with in India, practitioners have often to deal with a group of fevers which though generally styled "typhoid," are in reality intestinal infection produced, as he believes, primarily by a single type of bacillus or a mixture of enteric bacilli (distinct from, although closely allied to, Eberth's bacillus typhosus) setting up a simple or a complex reaction on the part of the patient and in some cases a complex phenomenon resulting from secondary infections superimposed in the course of reaction set up by the primary cause. Dr. Row says that Major Spencer's observations from a clinical point of view are in harmony with his own and that they strongly support the inferences enumerated in this paper which are drawn from bacteriological evidence.

New Inventions.

A NEW CHLOROFORM AND ETHER REGULATING INHALER.

THE aim of the anæsthetist when administering chloroform should be to give a constant minimal dose and to maintain an unvarying depth of anæsthesia, but by the rough-and-ready method with mask and drop bottle it is almost impossible to attain this ideal except at the hands of experts, and even then only approximately. By the old methods the dosage is necessarily far from accurate and is therefore unsatisfactory; it is, moreover, on account of this inaccuracy, this varying dose of chloroform, and varying depth of anæsthesia that dangers during narcosis from chloroform usually arise. Most anæsthetists therefore welcomed the advent of the Vernon-Harcourt regulator and it was doubtless a revelation to many of us that a very large number of patients can be kept sufficiently anæsthetised with fractions of 1 per cent. of chloroform vapour in the inspired air. The apparatus is, however, very cumbersome and inconvenient and in my hands it is incapable in many cases—for instance, extensive abdominal operations in certain types of patient—of giving a sufficient dose of chloroform for all contingencies and to suit all surgeons. It has, moreover, certain other inherent disadvantages, such as the restriction of its air-ways by several right-angle bends. For these reasons it has, in spite of its virtues, been discarded by many. I have therefore devised, and Messrs. Krohne and Sesemann have very carefully made after many experiments, the apparatus illustrated below, which enables the anæsthetist to attain the ideal I have predicated and which is without any of the disadvantages of the Vernon-Harcourt apparatus. The two indispensable points about any chloroform inhaling apparatus are that it should be capable of giving a sufficient dose to any kind of case under any ordinary surgical conditions and that it should offer no obstruction to the patient's respiration, which is easily depressed by chloroform. In this apparatus the air-ways are made five-eighths of an inch in diameter, so that there is absolutely no sense of oppression in breathing through them. The apparatus is capable of giving all percentages from zero up to an approximate maximum of 4 5 per cent. I have made no attempt to limit the dose to a so-called "safe" percentage, as I think it is a wrong principle to put an apparatus for giving chloroform into the hands of inexperienced persons and lull their legitimate fears by telling them that it is "safe" Chloroform can never be quite safe and only harm can result by trying to make people think otherwise. It is a mistake to minimise the necessity for the very closest attention on the part of an administrator and to take away the necessity for his judgment and initiative. In the inhaler now to be described an ample percentage of chloroform can, if desired, be obtained for all conditions, and this is particularly useful in those cases where it is very difficult to fit the face-piece with perfect accuracy; in such instances a little admixture of air round the face piece can be compensated for by increasing the percentage in the chloroform delivery.

The apparatus consists of a graduated glass reservoir (A) four inches in diameter by three inches deep. The reservoir is made of this large sectional area to enable ether to be quickly evaporated, since when the apparatus is used as an ether inhaler it is necessary that the inspired air shall pass in close contact over a large area of ether in order that it shall take up sufficient ether vapour. The reservoir is fitted, by means of a bayonet catch, with a metal lid; this lid is perforated by two openings, the air inlet at B and the outlet at E, for the mixture of air and chloroform vapour: this latter opening is closed with a balanced valve. Both openings are five-eighths of an inch in diameter. B is a slotted metal collar around the air inlet which takes the "increase tube" C; the variations in the position of this tube alter the strength of chloroform vapour in the inspired air, since by its means at each inspiration a column of air is made to impinge more or less directly and forcibly upon the surface of the anæsthetic fluid. Thus when it is at its highest point and with one ounce of chloroform in the reservoir the volume of chloroform vapour in the inspired air is 3 per cent. to 2½ per cent. depending upon the frequency of the respiration and the temperature of the chloroform; when at its lowest point the volume rises to 3½ to 4 per cent. depending upon the same conditions, and when the "increase tube" is removed the volume is only 0·75 per cent., which may be further reduced at will by revolving the air inlet collar (g) to admit more air and thus dilute the chloroform vapour. This dilution can be made irrespectively of the position of the "increase tube" if this plan of reducing the dose of chloroform be preferred. The "increase tube" C is fitted with a metal grooved ring (c) to which a petticoat of gauze may be attached in such a way that when it is desired to give ether and when the tube is in place the end of the gauze dips into the ether, acting like a wick and thus increasing the area of evaporation. The orifice and valve (E) are inclosed in a glass valve observation chamber, to the lid of which is attached by a bayonet catch a piece of flexible aluminium tubing 18 inches in length (F); this connects the reservoir with the stopcock (G). The inspiratory valve E is so delicately balanced that the least lowering of pressure in the tube and valve chamber immediately causes the valve to rise and thus there is no sense of oppression in breathing through it. The face-piece is fixed to the stopcock (G), which is of standard size, so that any ordinary face-piece of Clover's inhaler or gas apparatus will fit it. It has an opening to admit air which is opposite the face-piece and when fully open is wide enough to take the whole of the respiratory stream, no air then passing through the apparatus over the surface of the chloroform; this orifice may be closed at will by a revolving collar (g) which is seen in the figure half across the opening. This collar carries, by means of another collar plugged upon it, the expiratory valve (H) which is guarded by a cross of stout wire. By means of its collar, which is made to rotate, the valve (H) may always be kept dependent in any ordinary position of the stopcock, so that it completely closes the expiratory orifice and does not tend to fall away from it. To the opposite end of the stopcock the flexible aluminium tube is fixed. All parts of the apparatus are detachable and can be easily removed for cleansing or repair. The reservoir is held in a convenient position close to the patient's head, where all its parts will be well in view and where it is out of the way of the surgeon or his assistants by means of the stand (I). This consists of a stout wire cage which closely fits round the reservoir and is fixed to a flat telescoping base. This base is made in two parts which may be pushed one upon the other until the length is reduced to ten inches, so that it can be carried easily in the anæsthetist's bag, or when in use it may be extended to 18 inches. By pushing the base of the stand under that part of the mattress on which the patient's shoulders rest on the bed or operating table the whole apparatus is kept perfectly rigid. If preferred the stand may instead be placed upon a table beside the patient, the length of the base when fully extended insuring sufficient immobility without the additional weight of the patient resting upon it. Since the reservoir is so close to the patient's head only a short length of tube is required and thus the respiration is not impeded; moreover, the air-ways are not encroached upon by angular bends. It will be seen that the apparatus is extremely simple, handy, and portable, and that there is nothing to get out of order.



The best way to use the inhaler is as follows. Half an ounce or more of chloroform is put into the reservoir—the quantity depending upon the probable duration of the operation—the "increase tube" is fixed at its highest point, the air inlet collar is revolved so wide that only the faintest taste of chloroform is perceptible when a breath is taken through the apparatus, the inhaler is placed in its stand, and the base of the stand is pushed under the patient in a convenient position. After applying the face-piece the air opening is closed very gradually by rotating the collar which covers it, thus gradually making more and more of the inspired air pass over the surface of the chloroform as less and less passes through the air inlet *in the stopcock*; in this way the percentage of chloroform in the inspired air is slowly increased. Experience will soon teach how rapidly this gradual increase of dose may be effected, but six minutes will usually be sufficient in which to induce anæsthesia. If the percentage of chloroform be not too quickly increased patients will, as a rule, quietly pass into the anæsthetic sleep without a struggle or sign of discomfort. Should, however, the subject be alcoholic or inclined to struggle, in spite of a very gradual administration, the "increase tube" may be placed at its lowest point and the percentage of chloroform thus considerably increased. After full anæsthesia has been established the patient will need very much less chloroform to maintain it, only sufficient, in fact, to make up for that which is eliminated at each breath. The percentage therefore should be reduced and kept at as low a point as is consistent with the requirements of the surgeon. When once the minimum point has been found nothing more is required than to keep the face-piece closely applied; the patient will then remain in an unvarying depth of anæsthesia because he will be inhaling a practically unvarying dose. In course of time, however, the chloroform in the reservoir will become cooler and other things being equal the percentage of chloroform in the inspired air will, from diminished evaporation, slightly fall; but since as the operation progresses the patient needs less chloroform this automatic diminution in the dose is an advantage. During the administration the anæsthetist must, of course, watch the condition of the patient closely and reduce or increase the amount of chloroform as may be necessary. Generally speaking, all he has to do is to keep the face-piece applied, but he must remember that chloroform can never be an absolutely safe anæsthetic and that its administration involves the gravest responsibility and risk, that in the administration of an anæsthetic more is involved than the mere exhibition of a certain dose of the anæsthetic drug, and that unless he *devotes* his closest attention to the matter in hand he courts disaster. With this apparatus he is enabled to administer an exact and constant dose in the simplest manner and provided he keeps the air-way free and works with as small a dose as possible an accident is a remote contingency.

In the event of the patient showing symptoms of shock in the course of a long or extensive operation ether may be added to the chloroform by pouring it down *the* "*increase* tube"; or if it be desired to change to ether entirely the remaining chloroform may be poured out of the reservoir and ether substituted, after placing the ring carrying the gauze petticoat (c) upon the "increase tube" *inside the reservoir* It is not recommended to induce anæsthesia with ether in this way, the better plan being to accomplish this with ethyl chloride or gas in another inhaler and then to change to ether in the regulator. In giving chloroform by this means the consumption is not more than one-third of that necessary by means of a mask and drop-bottle; if, however, ether be given the consumption is greater than when a closed inhaler is used, but the regulator possesses this obvious advantage that there is no re-breathing in and out of a stuffy bag, a process which is unhygienic in the highest degree. The patient instead takes in fresh air laden with ether vapour with each breath and in consequence of the freedom from asphyxia there is but little secretion, no sweating and therefore less *risk* of chill, no cyanosis, and the respiration is less *forcible*. The after-effects are naturally less. I have used the inhaler constantly both at the London Hospital and in private *practice* since last autumn and have experienced no trouble with it, and by the kindness of Mr. C. Carter Braine and Dr. J. Blumfeld I have been enabled to demonstrate its use twice at the Charing Cross Hospital in serious abdominal operations on patients weighing over 16 stones—one in the Trendelenburg position for over an hour—and once at St George's Hospital for an abdominal operation. In each instance the administration was conducted to the entire satisfaction of the surgeons and the anæsthetists on duty at the time. The apparatus is admirable for teaching purposes since the effects of definite percentages of chloroform *can* be easily demonstrated. The comfort of administration by its means and the freedom from anxiety can only be fully appreciated by actual trial of the instrument. I believe its general use would *materially* lessen the mortality from *chloroform*. The percentages were *estimated* by Mr. P. Richards, lecturer on chemistry at the Charing Cross Hospital Medical School, for whose kind help I am most grateful.

HARVEY HILLIARD, M.R.C.S. Eng.,
L R.C.P. Lond.,
Assistant Instructor in Anæsthetics at the London
Hospital and Anæsthetist to the Royal
Dental Hospital.

A DROP-BOTTLE FOR THE CHLOROFORM-ETHER ANÆSTHETIC MIXTURE.

DURING the past ten years I have found a mixture, consisting of one part of chloroform with two parts of ether by volume well shaken together, to be a most valuable anæsthetic when administered upon a honeycomb sponge by means of Dr. J. F. W. Silk's celluloid Rendle's mask. My own method has always been to hold the mask with the left hand close to, but not touching, the patient's face before the anæsthetic is poured on, and after instructing the patient to breathe slowly through the mouth to introduce the mixture upon the sponge in the flannel lining at the distal end of the mask by inserting the spout of a suitable drop bottle through the most convenient of the holes which are pierced through the celluloid for respiration. By this means a gradually increasing strength of vapour can be administered without removing the mask until the third stage of anæsthesia, with a weakly active corneal reflex, is attained. The bottle for this purpose should hold four ounces of the mixture and possess a bayonet catch to the stopper, so that it may be fixed open and the spout may then deliver a free stream of anæsthetic when the bottle is held by the body without the necessity of pressing the stopper with the index finger.

FIG. 1.

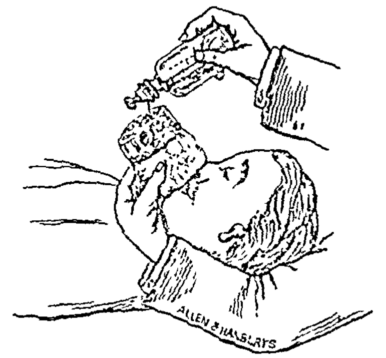
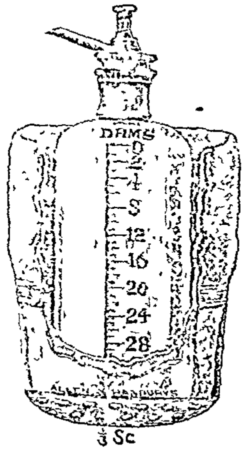


FIG. 2.



Messrs. Allen and Hanburys of Wigmore-street have made a bottle suitable for this purpose which packs easily into the mask for transit, as shown in the accompanying illustrations.

Mansfield street, W.

H. BELLAMY GARDNER.

THE LANCET.

LONDON: SATURDAY, JULY 29, 1905

The British Medical Association: The President's Address.

THE Presidential Address of the British Medical Association, delivered by Mr. G COOPER FRANKLIN, surgeon to the Leicester Infirmary, and printed in our columns this week, forms an interesting contribution to one of the most important questions in medical politics Medical education is in a critical position in many ways, and all discussion which deals with the numerous questions pressing for solution will be welcomed by thoughtful members of our profession After a brief *résumé* of medical education before the Act of 1858 Mr FRANKLIN describes with some detail the curriculum of the medical student of the present day and as a result comes to the conclusion that the prescribed course of training is still, as it has been in times gone by, deficient in three particulars He considers that the quality of the preliminary examinations is poor, that insufficient attention is paid to obstetric medicine, and that practical experience in the administration of anæsthetics is not adequately provided for It is a relief to come across concrete objections to the present state of affairs instead of merely nebulous abuse of British technical training, or criticism of the proceedings of the University of London, or complaints of the inefficiency of the examination system, and Mr FRANKLIN will find his words to be all the more heeded that their purport is so straightly defined

One of the main defects in the present education of the medical student is undoubtedly constituted by the fact that certain of the examinations which form an introduction to the career of a medical man are not sufficiently stringent Mr FRANKLIN'S consequent proposal is that every medical student should pass an examination of equal stringency to the matriculation examination of the University of London. We quite realise that the increasing scope of medical knowledge makes it necessary that the medical student should be increasingly receptive but this proposal seems to us to be a little extreme The matriculation examination of the University of London, owing to improvements in its arrangement, is no longer the stumbling block to the student that it was, but it remains a test for which a lad of 17 or 18 years of age requires good teaching if he is to be brought up to the point of learning at which he is fairly sure to pass it Many lads of the indicated age, as well as many young women among their coevals, can pass it with ease, but some who are really abler students find it a most awkward check to their progress, a check which they can hardly surmount unless they are specially "coached" to that end It has to be remembered that boys of 17 are not all of the same age, some being men in their powers of concentration and in their early development, while others are veritable schoolboys By the age of 24 or 25, however, a levelling process will set in, the forward lad comes back to those whom he had distanced, the backward lad catches many of those who bade fair to outstrip him entirely. It is the chief argument against an examination of real stringency at the age of 17 that the barrier may prove unimportant to men who at the age of 24 prove themselves capable of no great intellectual achievement, while it may terribly impede the career of other men who, on arriving at the age when individual action is necessary, display themselves as the possessors of real originality It must be admitted that from the medical student's point of view the best thing that can happen to him is to have his career blocked at the outset by a thoroughly stringent examination—such an examination is a blessing in disguise Over and over again it has been found that the student who starts his career in possession of a good education of a general sort finds no difficulty in passing the professional tests to so many of which he has to submit himself later. And yet the matriculation examination of the University of London is too severe to form the portal to the medical profession The best course at the present moment is probably an intermediate one A stringent examination guards the portals of the Foreign Office, of the Home Office, of the Indian Civil Service, of the Treasury, and so on, but it must be remembered that those who pass it are, to a certain extent, made men. Their parents ought not to grudge for them the expensive education and special "coaching," because good interest is reaped on the capital expended But this position does not prevail in the case of the medical student and his entrance examination ought not to be made of the kind that will burden the purse of his parents, or that will lead to the rejection of valuable candidates whose powers for this reason or that are slow to develop. Yet the entrance examination for the medical profession ought to be of a much higher standard than it now is at many centres of medical education The smattering of knowledge which is all that the medical student need possess when he enters upon his professional career is of no real service to him and this is a situation with which the General Medical Council must soon deal

With regard to the lack of practical teaching of obstetric medicine and of anæsthetics at our medical schools we think that these reproaches cannot be so fairly urged to-day as they could have been five years ago The inspectors and visitors for the General Medical Council of the various final examinations of the United Kingdom have been careful to insist that the tests in obstetrics should be so far as possible practical, and as a result the student is now better equipped than formerly for one of the most important parts of his professional life It is not possible to insist upon a course of training for all medical students at a special hospital devoted to midwifery having regard to the amount that has to be got through in the five years of the curriculum, but short of this all care is, we believe, now taken to perfect the knowledge of the student in practical obstetrics It must be remembered also that attention to ordinary antiseptic principles means so much in the conduct of a normal labour that the general instruction obtained in the surgical wards furnishes a large part of the routine of midwifery practice. As regards a knowledge of anæsthetics, their administration is taught now at most hospitals and students have opportunities at many medical schools of producing anæsthesia under the immediate eye of an experienced anæsthetist. Mr. FRANKLIN has rightly urged the necessity of the medical student being familiar with these two important branches of his life-work, but we think that he has hardly appreciated how entirely his views are the views of those responsible for medical training.

The British Medical Association: The Address in Medicine.

WE may congratulate the British Medical Association on its selection of Dr. HENRY MAUDSLEY to deliver the Address in Medicine and likewise felicitate him on his choice of the subject of "Medicine, Present and Prospective." To review the present position of an advancing science and an applied art such as medicine and to indicate fruitful fields to cultivate in the future requires a catholicity of range, a depth of knowledge, and a position of disinterested detachment which it is given to few to possess. Fortunately, our profession owns in Dr. MAUDSLEY a hysician who is at once a philosopher and a man of proound and original thought, with the faculty (too rare owadays) of expressing his opinions in graceful yet ucid language. The address delivered by him is a model of its kind, affording material for careful conideration and ideas for future advancement; there is at times a vein of gentle satire, incisive but never unkind, which gives a piquancy to it. After enunciating the truism that error does not become truth because it is repeated thousands of times by many thousand persons, he suggests that "if a competent thinker constituting himself a sort of *advocatus diaboli* were to write a book entitled 'Medical Doubts,' setting forth reasons why some accepted truths may not after all be true, he would do a real service to medical science." In this we agree with Dr. MAUDSLEY and may express the wish that he will constitute himself the mentor and yield to medicine this needed service. "There is no darkness but ignorance," said the jester in *Twelfth Night*, so in science there is no stagnation like that due to the blind acceptance of time-honoured dogma.

The pace of medical progress was never so rapid as during the last 50 years says Dr. MAUDSLEY, and though the right of present congratulation is rather to surgery yet he is anxious lest the surgeon in his zeal to restore quickly the normal shall supplant instead of aid nature, and points out the mutual aid and instruction which surgery and medicine may and should afford to one another. He rightly deprecates the present tendency to multiply words, too often of barbarous construction, descriptive of operative procedures or diseased conditions as not only unpleasing but a positive hindrance to thought. The future of medicine lies in the prevention of disease or in the arrest of its early processes; at present too often the medical practitioner is hampered in these matters by the late stage at which he is summoned to intervene; early arrest, no less than prevention, is to be preferred to cure. In prevention there are two plain courses to be followed: the one by precautions to prevent those attacks which arise from without, whether in gross form or of microbic nature, and the other to obviate the predispositions to disease by fortifying the powers of resistance of the organism against these same inimical agencies. It is this second aspect of preventive medicine, until recently somewhat neglected, which forms the main theme of the Address in Medicine. The question is asked whether we might not with advantage study the effects of marriage unions of different tendencies and immunities as factors in increasing or lessening predisposition to diseases and in illustration inquiry is made as to what is the constitutional disposition, if any, most likely in breeding to diminish a tendency to cancer or insanity. When we find the answer to such questions we shall have an opportunity of enunciating and applying practically rules such as Mr. FRANCIS GALTON desires as the basis of his new science of eugenics. In this connexion Dr. MAUDSLEY is glad to note that the present position of medicine in relation to tuberculosis shows a wise recognition of the necessity of fortifying the body inwardly to resist infection—that is to say, to lessen vulnerability rather than to hope for the absolute elimination of exposure to infection. While recognising the value of sanatoriums, he regrets the want of sobriety in some medical statements on the popular platform whereby public opinion is misled into supposing that pulmonary tuberculosis is curable and is no longer to be regarded as a bar to matrimony. He asks, "Can we eliminate the predisposing influence of heredity?" And again, "Might not the ultimate cost to the commonwealth be greater were these persons [the 60,000 or so consumptives who die annually in England and Wales] to go on living and breeding in it?" He admits that the subject is a tender one and continues: "Human life is so precious nowadays in all its states—phthisical, insane, criminal, inebriate, and the like—that it is the pious duty of the social organism not, as the healthy bodily organism tries to do, to extinguish or extirpate a morbid element, but to absorb it into its system, growing sympathy being the vital principle of social growth," but he fears the ultimate issue of such morbid absorptions. Of course, as he points out, these matters are not the concern of medicine but of sociology or eugenics. None the less, we cannot but feel that here he is perhaps too pessimistic; we may hope that the present is but a phase—a mere stage on the road to the general improvement towards which all research is directed, when disease processes can be dealt with at an early stage and morbid tendencies repressed or eradicated, and these indeed are the methods which he himself advocates. At the same time it is a matter for the common sense of the nation in general to determine whether the reproductive capacities of the unfit shall in the interests of the race be prohibited.

Like H. D. THOREAU, the apostle of simplification, Dr. MAUDSLEY pleads for the observance of the simple salutary rules of life and for temperance in matters mental and emotional as well as physical. He refers to the rôle which chemistry and physics, especially the newer discoveries, are playing in the elucidation of many vital problems, of the importance of the complex by-products of vital processes as poisons when function is deranged, and of the toxins of extraneous organisms, such as bacteria, in producing disease processes. After pointing out how chemical research is steadily sapping the barrier between organic and inorganic nature and has now reached the very confines of life, he foresees that it is inevitable "that all divisions of science shall gradually be effaced, even that which metaphysics has fixed between bodily and mental life, the partitions being received as conveniences of thought, if all nature be one process of orderly evolution and the function of science be to find it out." He is of opinion that the artificial barrier set up by metaphysics between body and mind has been a hindrance in the past and he proceeds to show the absolute and essential unity of both and the importance of so regarding them whether from the physiological or the pathological point of view. "Mind works in every function of the body; a sound body is the foundation of a sound mind; and the lunatic is lunatic to his finger-tips," sums up his views in his own words. He further hopes just as increasing knowledge in other branches of biology leads to practical advances, so also that a more clear and just conception of the subtleties of the forces at work in mental action may lead to their scientific application to cure diseases of the body. He foresees that medical science will play a large part in the future improvement of the race and that the laws of mental breeding, yet to be discovered, will play a part in that improvement. It is a mistake to assume that moral qualities are not dependent upon physical constitution, and vice and sin require scientific inquiry and explanation if they are to be eradicated no less than poisons do. "If one thing is certain," says Dr. MAUDSLEY, "it is that wrongdoing—whether error, vice, or sin—is avenged on earth—not always, it is true, on the individual wrongdoer, but somehow, somewhere, on others bound together with him vitally in the social system."

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The British Medical Association: The Address in Surgery.

MR. C. J. BOND imparted a somewhat novel tone to the Address in Surgery by deviating from the lines which have become traditional. It has been the custom almost invariably for the orator to dwell upon the recent successes of surgery and to show the advances which have been made. Mr. BOND, however, took as his subject an interesting physiological question—that of the possibility of a retrograde current in mucous canals. Physiology is usually regarded as the handmaid of medicine and surgery, but in this case Mr. BOND claimed that surgery was helping to solve an important physiological problem. It has long been known that patients to whom has been administered a castor-oil enema claim to be able to taste the oil, and cases have even been recorded where the patient has vomited a small portion of a substance introduced into the rectum, though in some of these the possibility of malingering must be considered. The fæcal vomiting of intestinal obstruction is analogous and of this two explanations have been given. According to one the peristalsis of the bowel has been reversed, though any other evidence of such an occurrence is lacking, and according to the other theory there has been an upward central current reflected from the obstruction. The hydraulic possibility of this latter theory is not beyond doubt and it must be confessed that the true explanation is not yet forthcoming. Mr. BOND's observations deal, however, with less gross manifestations of a retrograde current in mucous canals, his experiments being made on the large intestine, the female generative tract, the upper intestinal, the urinary, and the respiratory tracts, and also the ducts of glands.

In nearly all these regions he has utilised cases in which fistulæ have formed, or been made, and he has introduced an insoluble coloured powder, indigo or carmine (carefully sterilised), into the lower aperture of the canal, and after an interval he has been able to demonstrate the presence of the pigments at the fistula. For instance, in a case of fistula after an excision of a portion of the sigmoid flexure for carcinoma Mr. BOND introduced some carmine into the rectum and within 24 hours the colouration of the carmine could be distinctly seen at the colectomy wound. In another case, where an operation for acute appendicitis with abscess resulted in the formation of a fistula communicating with the cæcum, indigo suppositories were introduced into the rectum. Three days later the particles of indigo were found in the discharge from the fistula. Still more surprising, however, is the fact that during those three days, while the particles of indigo were making their way slowly upwards along the colon, the patient took two aperients and free actions of the bowels occurred on all three days. In this case it is clear that the upward movement could not be due to any reversal of the peristalsis, for during the upward progress of the pigment there was an energetic peristalsis in the opposite direction. Even a marked narrowing of the bowel cannot stop this upward movement, for in one case there was apparently complete malignant obstruction high up in the rectum, yet indigo introduced in the anus showed itself at the colotomy wound within 24 hours. We must suppose that though complete obstruction to the passage of fæces was present, yet the occlusion was not absolute. Care was taken in all cases to prevent the direct transference of the pigment from the anus to the colotomy wound, so that we cannot deny that there was a slow upward movement of the indigo or carmine from the anus to the fistulous opening in the left or right groin. In considering the method by which this removal was effected we must bear in mind that as insoluble pigments were chosen it is impossible for the blood or lymph stream to be responsible for the ascent. It is not due to any capillary action; for in the dead bowel no upward movement occurs. Mr. BOND considers that any increase of peristalsis, as produced by an aperient, favours the upward current. This movement has been shown, also, to occur even in healthy bowel, unmodified by disease or operation, for a guinea-pig has been killed 48 hours after some indigo had been inserted in the rectum and the pigment was discovered high up in the colon.

Mr. BOND claims that the explanation of these phenomena is to be found in the presence of an upward mucous current close to the mucous membrane, capable of carrying minute particles with it. He does not suppose that this peripheral current is continuous but suggests that it may be intermittent and perhaps alternating with the downward peristalsis. Experiments have been made with particles of various sizes and Mr. BOND found that the particles of lycopodium powder were the largest that could be carried. Observations, essentially similar, were made on the upward passage of solid particles along the female generative tract. When indigo was placed just within the os uteri in cases of disease of the Fallopian tubes 24 hours before the operation for the removal of the diseased tube, in the vast majority of cases the pigment was found in the contents of the tube. The operation of cholecystostomy afforded many opportunities for observing the upward passage of pigment along the common cystic ducts, the indigo having been administered by the mouth. We need not detail the result of Mr. BOND'S observations on the urinary tract and the breast, although in these cases also very definite evidence of the upward passage of pigment particles was obtainable; for the particulars we must refer our readers to the paper itself which is published at p. 275 of our present issue. The practical importance of these numerous observations is obvious. If large solid particles like those of indigo and carmine can be carried from the anus to the cæcum, from the duodenum to the gall-bladder, from the external os uteri to the Fallopian tubes, from the nipple to the interior of the mammary gland, and from the bladder to the kidney, we may well conclude that the far more minute bacteria can also pass readily in the same direction, and thus we have an explanation of many infections hitherto inexplicable. In the case of the breast we can appreciate the especial importance of these observations, for the occurrence of all forms of microbic mastitis can be easily explained. And it is certain that Mr. BOND'S observations will impress on the surgeon more strongly than ever the danger of infection of many tracts by the introduction of micro-organisms into their outer openings. Other observers will repeat, confirm, and extend the experiments described in Mr. BOND'S address and it may well be that we are underrating the importance of this upward mucous current, now first described.

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The Proposed Amalgamation of London Medical Societies.

A TIME has come when it behoves every member of every kind of medical society in London to think carefully of his future as such a member. For representatives of his society will be called upon, presumably at no very distant date, to state that society's views as to the desirability of amalgamation with other societies. And these representatives will, we hope, be justified in feeling that the opinion which they express is the deliberate choice of, at any rate, the great majority of their fellow members. What that opinion will be we do not care to speculate, but we may candidly state our own warm sympathy with the scheme as it is suggested by the report of the executive committee, to the appointment of which we alluded recently,[1] and we may draw attention to a few of the arguments which ought to influence members of all the societies and their representatives. Every reform, no matter in what sphere of social or political life, entails difficulties and arouses resentments whether of a general or of a private nature. The wise man, however, is able to judge between his individual feelings and the general advantage, and to vote for that which enhances the one even if it at the same time rather sacrifices the other. It is some such wisdom that many of our readers will be called upon to exercise if they are asked to merge their own particular society into an institution comprising also all the sister bodies. Yet whatever be the particular society to which a man belongs, however dear its ancient traditions, however revered its surroundings, and however flourishing its financial state, we believe that its members will gain more by the apparent sacrifice that they may be called upon to make than they will by a conservatism which, if it keeps for them one or two comparatively small privileges, certainly robs both themselves and many members of less influential societies of the benefits that accrue from a great central institution. That a certain amount of sacrifice is involved in the proposed change is inevitable. A pleasing sense of individuality must be given up, but the individuality which tends to keep a special branch of medical study apart from all other branches should be lost with no regret. The sacrifice of money to which it is possible the richer bodies may be put is one that will not, we believe, influence their rulers when it is a question of helping to extend great benefits to the whole medical profession of the country. Moreover, as the report points out, the financial practicability of the scheme, and consequently the financial damage to be incurred in any direction, is uncertain until a definite statement is possible as to which societies will join the proposed Royal Society of Medicine.

Some of the societies again possess valuable libraries and may look with apprehension upon their removal from an old-established resting place. They will, however, be removed to one as safe and as dignified, only perhaps more frequented. There is no doubt that the accumulation under one roof of the several fine medical libraries, general and special, belonging to various London societies will be of the greatest service to workers in many branches of medicine and the sacrifice of duplicate copies, weighs as nothing against the advantages of one complete library of reference. The economy in the working staff that is derived from concentration of this kind needs no demonstration. This economy, moreover, is likely to remove from the harassed hands of honorary secretaries much labour that can be conveniently accomplished by the regular efforts of a paid official The report of the executive committee, which we publish on p. 310, seems to warrant the supposition that the new society would start upon a sound financial footing. For in supposing that about 4000 members of societies, other than the Royal Medical and Chirurgical Society, would become members at the rate of a guinea per annum, we do not think too high an estimate of the probable number has been made. Indeed, it seems pretty certain that so far as the individual member of any one society is concerned the new scheme gives nothing but advantage. It is only where a society as a corporate body is concerned that there can be any question of the gain in amalgamation. To most of the societies it will be a gain in prestige to form part of a Royal Society, and to all it will afford the satisfaction of an increased sphere of usefulness. That this would ensue from an amalgamation scheme we have no doubt at all and may point in illustration merely to one feature of the institution as proposed in the report of the executive committee. We allude to the monthly publication of the proceedings. Such a periodical would be of the highest value to every medical man who aims at keeping his knowledge up to date in all its branches. Moreover, such a publication is impossible except as coming from a body of the nature of the proposed Royal Society. We cannot be accused of partiality when we refer to the value of a periodical of the nature suggested, for without a doubt it would seriously affect the interest of certain portions of our own pages. The monthly periodical would offer a boon not to its readers only but perhaps even more markedly to the authors of the papers. At the present time so long a period elapses between the evening when a paper is read and the date at which it appears in the Transactions that interest has often diminished even if fresh and contradictory material has not discounted the original value of the writing. Moreover, there would be a certain authoritative value about the publications of the Royal Society of Medicine and in the case of papers selected for publication in the yearly Transactions this would be very great. In fact, the selection of the papers would, we imagine, form one of the most formidable of the difficulties confronting the executive of the new body. No doubt each section would be represented on the selection committee for the Transactions, but even then it is easy to imagine heart-burnings over non-selected papers with subsequent suggestions th the sectional representation was inadequate or inefficient.

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[1] THE LANCET, April 15th, 1905, p. 1003.

All such questions as these, however, are matters of detail and in no way really affect the broad principles of the scheme which alone the report pretends to put forth. Both the ideas represented and the manner in which they are put forward appear to us to reflect great credit upon the executive committee and in particular upon its secretaries whose labours must have been anything but light. One detail over which there will doubtless be much difference of opinion is the title of the new amalgamated society of medicine. In these columns we have occasionally spoken of the future body as the Royal Society of Medicine and this is one of the suggested titles. We have chosen it by way of silent protest against the suggested alternative. "Academy" is, we think, a word carefully to be excluded from the name. Either it conveys the impression of a selective exclusiveness which cannot appertain to any body of the nature of the proposed amalgamated society or it reminds us of an institution that exists to foster art and is largely notorious for neglecting even the best exponents of art unless they conform to an uninspiring conventionality.

DONATIONS AND BEQUESTS.—Mr. Philip H. Vaughan has given £5000 towards the £50,000 which the committee of the Bristol Royal Infirmary is raising.—Sir Massey Lopes, Bart., has increased his endowment to the Plymouth Public Dispensary by £500, making his endowment now £2500.

Annotations.

"Ne quid nimis."

THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE British Association for the Advancement of Science, as all our readers know, will this year hold its meeting in South Africa, the main proceedings being divided between Cape Town and Johannesburg, whilst lectures and addresses will be delivered at various other towns. This is the third time only since the foundation of the society in 1831 that it has met outside the United Kingdom, Canada having been chosen as the place of meeting in 1884 and in 1897. The inaugural meeting this year will take place at Cape Town on August 15th and on the following day Professor G. H. Darwin will deliver the first half of his presidential address, the second portion of which he will deliver at Johannesburg on August 30th. He proposes to discuss the general principles involved in theories of evolution with special reference to the world of inanimate matter. In addition to Cape Town and Johannesburg the itinerary of the association includes Durban, Pietermaritzburg (where Colonel David Bruce, R.A.M.C., will deliver a lecture on sleeping sickness), Pretoria (where Professor A. E. Shipley, the University Lecturer at Cambridge on Advanced Morphology of Invertebrates, will discuss fly-borne diseases and malaria), Bloemfontein, Kimberley, and Bulawayo. The matters to be discussed are divided into 11 sections but Sections D and I, which deal respectively with Zoology and Physiology, will naturally appeal most closely to the medical members. In Section D Mr. L. Doncaster will discuss recent work in Gametogenesis and its Bearing on the Theories of Heredity. Colonel Bruce, R.A.M.C., who is president of Section I, will take for his subject the Advance in our Knowledge of the Causation and Prevention of Stock Diseases in South Africa during the last Ten Years, such as rinderpest, pleuropneumonia, and horse sickness. Dr. Theiler and Dr. G. Turner, medical officer of health of the Transvaal, will also read papers on the same subjects. Professor G. Sims Woodhead will discuss the subject of Dysentery and other papers are announced to be read by Dr. D. Ferrier, Dr. D. Macaulay, and Dr. Louis G. Irvine. Other medical men who may read papers or open discussions in this section are Sir Lauder Brunton, Professor Mackendrick, Dr. A. J. Gregory, Dr. A. Jasper Anderson, Professor Bohr, Dr. J. A. Mitchell, Dr. B. S. Black, Mr. John Maberly, Dr. A. Edington, and Dr. W. Robertson. In connexion with this meeting the proprietors of *Knowledge* have issued a special number of their journal, which contains a biographical notice of the President of the British Association with portrait, a sketch of the origin and progress of the British Association, with portraits of the presidents of sections, a route map showing the various places to be visited by members of the Association, and articles on the Races of South Africa, the Diamond Mines of South Africa, South African Natural History, the Extinct Reptile Fauna of South Africa, the Zambesi and its Sights, and many other features of interest both to those who are fortunate enough to be able to visit South Africa and to those who are compelled to follow the proceedings of the Association as reported in the scientific journals at home.

LONGEVITY.

THE question how shall a man live to be 100 years old has been asked by many generations of men. Anciently the belief in extreme longevity was based on Scriptural authority or on the analogy of certain folk-lore traditions according to which some animals, such as crows and deer attain to immense ages. In the Middle Ages, in fact, the stag was supposed to be capable of living 1000 years, and it required all the acumen of Sir Thomas Browne in his "Popular Errors" to show that deer are not likely to be long-lived and that, as a matter of fact, some 30 to 36 years probably mark the span of their existence. Sir Thomas Browne argued that there is a certain ratio between the years of growth and those of decline, and at a later date Flourens worked this theory out and concluded that animals have the capacity, as a general rule, of living five times longer than their growing period. "Assuming this," wrote Dr. Protheroe Smith in 1885, "as regards man, on an average, to be 21 years (and excluding accidents, diseases of heredity, and unhealthy and unfavourable surroundings and habits), our term of life should be at least 100 years." The growth of what Dr. Protheroe Smith called spino-pelvic deformity was held by him to shorten life. Accordingly he proposed to keep the pelvis in its "natural oblique plane" by means of a "pelvic band," by which "the pelvic plane is easily restored to the normal angle of 140 degrees" and the viscera are kept in their proper places. It is the displacement of the viscera through loss of the spino-pelvic curve in old age which produces derangement of "the pelvic and the renal organs." These often "give out first in the final struggle to avert the termination of life." The "pelvic band," by keeping everything in place, keeps the human frame youthful despite the advance of years. Dr. Protheroe Smith, in fact, was for the attainment of longevity by the use of an appliance. His was the anatomical view. Sir James Crichton-Browne, on the other hand, is reported to have said recently that improved sanitation and a quiet life would conduce most to the attainment of a measure of existence far exceeding the 70 years spoken of by Moses in Psalm 90. In this view he follows Sir James Sinclair who wrote on longevity in 1807 and held that it depended chiefly on regimen and favourable external conditions.

THE IDEAL MILK FARM AND THE PRODUCTION OF MEDICALLY CERTIFIED MILK.

IN an interesting paper read at the recent meeting of the Royal Institute of Public Health Mr. H. Reginald Rhodes described the method by which medically certified milk is produced in the United States and he also said that if he was encouraged he was prepared to develop and to advance the principle of this method in England. Medically certified farms have been established in the State of New York during the last few years for the express purpose of producing milk of the very highest attainable purity by means of a system of rigorous cleanliness and precaution against all possible sources of contamination through the cows, the employés, or the utensils. Everything is sterilised except the milk which is produced as nearly as possible under aseptic conditions. At the Woodlawn farm the dairy buildings consist of two main blocks: (1) the living or feeding cowhouse; and (2) the washing and cleaning shed and the milking and bottling shed. The day's work commences quite early in the morning when each cow is led singly and in turn from the stable into the washing and cleaning shed. Here it is washed antiseptically with sponges and brushes and dried with sterilised towels. The cow is then taken to the milking shed. The milkers are required to wash themselves thoroughly in a bath-room provided for the purpose and to wear clean linen clothes which are frequently washed and sterilised twice daily. The milk is passed directly from the milking stable through a "drum" in the bottling room and is bottled immediately. All bottles and utensils are kept rigidly clean and are sterilised before and after use. In the bottling room troughs of water are kept at a very low temperature by means of pipes from the refrigerator in the building. The bottles of milk are kept quite cold after filling and sealing. The latter is done by means of a special pasteboard cap covered by a capsule furnished by the medical inspector. The bottles in the cooling troughs are subsequently packed in ice in cases of one dozen each and distributed. Special attention is paid to the conditions under which the cow is kept and stalled. There are no mangers or feeding troughs. All fodder is eaten from a concrete floor and once or twice each day the whole surface is swept with water from a hose pipe. The walls are paint-enamelled and are washed regularly. The cows are not allowed to graze on the farm land but the buildings in which they are kept and in which the various operations are carried on are well ventilated and well lighted. The system is obviously based on sound hygienic principles and its promoters candidly admit what must be equally obvious that its adoption raises the cost of milk production. But the question of cost may be dismissed when the gain to human health and life which would result were the system made universal is considered. The experience in New York is that the demand for medically certified milk is greater than the supply, though it costs about 1s. per quart. In England certain items of expense, however, could be reduced, as, for example, that of labour, and the price of the milk would be correspondingly less. It is urged that by insisting on the cleanly methods outlined the bacteria in the milk are diminished from 5,000,000 in ordinary milk to some hundreds only per cubic centimetre in the milk produced under hygienic precautions, and this is a strong argument for the abandonment of methods which only too clearly are not in accordance with the requirements of public health. It is highly desirable that milk as a factor in disease and mortality should be as far as possible eliminated.

DEMENTIA PRÆCOX.

AT the meeting of the American Neurological Association, which was held in September, 1904, Dr. B. Sachs opened a discussion on this condition and his paper has been published in the *Journal of Nervous and Mental Disease* for June, 1905. Dr. Sachs observes that the definition of dementia præcox as given in the writings of Kraepelin and his followers is broad enough to embrace almost every form of psychic derangement in the young. There is consequently a great temptation to diagnose a vast majority of the cases of mental disease in youthful persons as cases of that disorder. If this were justifiable the age of the individual would of itself postulate the diagnosis. Dr. Sachs enters a strong protest against these tendencies. The only feature which the forms of the disease distinguished by Kraepelin have in common is a supposed termination in dementia, but even this writer states that in 17 per cent. dementia never sets in and that in others there are long periods of remission during which the patient enjoys perfect health. In former days, when the insanities of adolescence were diagnosed under various headings, we were content to state that in certain circumstances, such as frequent repetition of the attack or presence of distinct hereditary taint, dementia might ensue. Dr. Sachs asks whether there is any gain in pushing the idea of dementia into the foreground and then setting the seal of ultimate mental deterioration upon these cases. He considers that the term "dementia præcox" implies a far too grave prognosis in many of the cases. A case is detailed in which this disorder was diagnosed by a well-known alienist but the patient regained almost completely his mental health and his subsequent history showed that it was a distinct injustice to make a diagnosis of dementia. In a second case which occurred before the spread of Kraepelin's doctrine but in which, had the patient been examined at the present day, the diagnosis of dementia præcox would no doubt have been insisted on, a complete recovery took place, the individual attaining a prominent position. The limits of the paper preclude the record of further cases which show that a process of apparently progressive mental deterioration may be arrested and that the patient may regain full mental vigour. Whilst protesting against the too extensive application of the term "dementia præcox" Dr. Sachs is willing to admit that our knowledge of the youthful insanities has been considerably advanced by its introduction.

THE STANDARDISATION AND STORAGE OF DRUGS.

AT the opening of the annual meeting of the British Pharmaceutical Conference at Brighton, last week, the President, Mr. W. A. H. Naylor, F.I.C., chose as the subjects of his address the Standardisation and Storage of Drugs. The object of standardisation is, Mr. Naylor said, to secure uniformity of strength, more especially in respect of medicinal activity. The required standard may have a physical, chemical, or physiological basis and may have reference to one or more definite principles or to a mixture of undefined substances. It should be the aim of the pharmacist to produce preparations that will fully represent the therapeutic activity of the drugs operated on, except in cases where it is desired to obtain the medicinal effects of certain definite principles to the exclusion of others. As an illustration, a preparation of opium might be required free from narcotine. In the case of drugs containing several active constituents it may in the future be desirable to apply the process of standardisation to certain principles hitherto disregarded which modify the therapeutic action. The pharmacologist may be depended on to point the way and, with the assistance of workers skilled in pharmaceutical research, to overcome the present tendency to produce a preparation and to standardise it on the basis of one particular principle, regardless of other constituents which may, directly or indirectly, be of therapeutic value. For instance, according to present knowledge the chief active constituent of scopolia and henbane is hyoscyamine. If a tincture of each be prepared so as to contain the same percentage of alkaloid it is doubtful whether, from a therapeutic point of view, it is a matter of indifference which of them is selected for use. The fact that the physician finds it advantageous to administer henbane at one time and scopolia at others suggests that these drugs do not give identical results. This may be taken as *primâ-facie* evidence that other constituents are present which modify the action of the hyoscyamine. Mr. Naylor devoted some attention to a number of potent drugs for which there are at present no satisfactory methods of standardisation, including Calabar bean, hemlock, henbane, jaborandi, stramonium, and strophanthus. The most recent investigations of Calabar bean point to the presence of three bases, of which eserine is supposed to represent the therapeutic properties on which the physician depends when he prescribes the official extract. In the case of hemlock the medicinal properties of the drug may be due to one or more of the following constituents, coniine, ethyl piperidine, methyl coniine, conhydrine and pseudo-conhydrine. From the experiments of Findlay we may conclude that the fluid extract of hemlock and the mixed alkaloids obtained from the drug act physiologically in a manner analogous to pure coniine. Hence the determination of total alkaloids in preparations of hemlock would probably serve the purpose. The standardisation of preparations of henbane is complicated by the fact that in addition to hyoscyamine the drug contains hyoscine, which is readily changed into atroscine (optically inactive scopolamine). It is not known whether hyoscine and atroscine have the same physiological value, hence it is desirable that care should be taken to prevent the change as far as possible during the manufacture of preparations of henbane. Jaborandi affords another problem in standardisation, as this drug contains at least two alkaloids, pilocarpine and isopilocarpine. Professor Marshall has shown that while these alkaloids produce similar effects on the secretory activity of the sweat and salivary glands, the former is the more powerful. It would seem advisable to base a method of standardisation of jaborandi on the amount of pilocarpine which it contains. The standardisation of stramonium on the basis of the mixed alkaloids would scarcely be justified in the absence of precise information as to the physiological value of the several alkaloids. A preliminary announcement has just been made by Professor Ernst Schmidt of Marburg that the only mydriatic alkaloid present in stramonium is hyoscyamine, so that it may be possible in the near future to fix a definite standard for this useful drug Perhaps there is no drug that shows greater variations in the strength of its preparations than does strophanthus There is little doubt that its usefulness in affections of the heart is due to the glucosidal principle first isolated by Fraser from *strophanthus Kombé* and named strophanthin. But different species of strophanthus appear to yield glucosides which vary in their degree of toxicity, chemical constitution, and physical characters. To add to the confusion the seeds that reach this country are the mixed products of several species of strophanthus and they resemble each other so closely that they cannot be distinguished macroscopically. Fortunately, one species, *strophanthus gratus*, is readily distinguished by inspection from all other African species and contains a crystalline strophanthin which, according to Thoms, is identical with Arnaud's ouabain. A process for standardising strophanthus may therefore be regarded as within sight. Speaking of the storage of galenical preparations Mr. Naylor drew attention to the liability to loss of active principles by chemical change or precipitation on keeping. In his experience varying conditions of storage produce changes in galenical preparations. Even under the same conditions of storage they are not equally affected. The preparations of belladonna and nux vomica appear to be the most stable, those of cinchona less so, and the liquid extract of ipecacuanha the least of all, the loss of strength in each case being largely due to precipitation. Pharmacists, therefore, cannot bestow too much thought and care upon the storage of important preparations which, even when kept under the most favourable conditions, are not free from liability to a reduction in strength and consequently to impairment of their medicinal value.

THE INTERNATIONAL SOCIETY OF SURGERY.

AS we announced last week the first Congress of the International Society of Surgery will be held in Brussels in September under the patronage of His Majesty the King of the Belgians. The congress will be in session from Monday, Sept. 18th, to the following Saturday inclusive, under the presidency of Dr. Theodor Kocher, professor of surgery in the University of Bern The morning of each day will be arranged for visits to hospitals and clinics, for the exhibition and examination of patients, and for other matters of interest connected with the congress as well as with the city of Brussels. The afternoons will, so far as possible, be reserved for the consideration of the subjects selected for discussion. These are as follows:— 1. The Value of the Examination of the Blood in Surgery. 2. The Treatment of Prostatic Hypertrophy. 3. Surgical Intervention in Non-cancerous Diseases of the Stomach. 4. Treatment of Articular Tuberculosis. 5. The Treatment of Peritonitis. 6. The Diagnosis of Surgical Diseases of the

Kidney. Other communications of a practical nature (of which due notice should be given as well as the time they will occupy), including the presentation of patients, specimens, and surgical instruments and appliances, may be made. Messrs. Thos. Cook and Son, Ludgate-circus, London, E.C., have been asked to make suitable arrangements for the convenience of members of the profession going to Brussels from Great Britain. Facilities for a visit to the Liége Exhibition might be included in these arrangements. All information in regard to travelling may be obtained from Messrs. Cook but inquiries about hotel and lodging accommodation should be addressed to the secretary-general at Brussels. Further information can be obtained from the secretary-general, Dr. Depage, 75, Avenue Louise, Brussels, or from Mr. Reginald Harrison, 6, Lower Berkeley-street, London, W., delegate for Great Britain.

INTERNATIONAL LABORATORY OF PHYSIOLOGY.

IT may interest some of our readers to know that a laboratory with a hostel has been established at Col d'Olen as an adjunct to the International Laboratory of Physiology on Monte Rosa. This (lower) laboratory is mainly intended for biological research but it is understood that provision has also been made for the study of terrestrial physics and meteorology. The Royal Society has the permanent nomination to two posts, each of which includes a living room in the hostel, a bench in the laboratory, and the use of apparatus, but the expenses of living and of special researches must be borne by the investigators. The laboratory is especially connected with the University of Turin but is under the immediate direction of a committee. Applications for nominations to the two posts referred to above may be addressed to the secretaries of the Royal Society, Burlington House, London, W.

CONTINENTAL TRAVEL AND ITS DANGERS.

"THERE is in Italy," writes an Italian correspondent, "a national association to encourage the influx of foreigners (*Un' Associazione Nazionale per l'Incremento del Forestiere*) and its directors, among whom are Members of Parliament, bankers, and other leading citizens, have recently been conferring with the Minister of Foreign Affairs, Signor Tittoni, as to the best means of obviating what is becoming a deterrent to the tourist or 'desirable visitor'—to wit, the robberies practised on the main routes by the 'ladro cosmopolita' (the cosmopolitan thief) who appears to grow in numbers and dexterity with the increase of the travelling public. His Excellency gave the customary assurances that the subject would have his immediate attention while he would redouble the vigilance of Italian representatives abroad and, by their means, enlist the coöperation of the diplomatic *personnel* of other countries for the suppression of an evil which was becoming more or less general. For some time, moreover, there has been concerted action between the heads of the police in the chief continental States; and the experiences, such, at least, as have been made public, of these functionaries and their agents are full of warning to the world so soon to be 'on the wing.' Organisation, with division of labour, has been carried by the 'ladro cosmopolita' to something very near perfection until he finds himself 'at home,' with confederates always available, from Nijni-Novgorod to Palermo, from Ostend to Seville. Always well dressed, with no lack of money, he affects the 'train de luxe,' and, most of all, the 'corridor carriage,' with the dining saloon and the sleeping compartment. There he 'takes stock' of his victim and (if, indeed, he has not relieved him of handbag or purse already) follows him to the hotel or *pension* at which he alights. There he is generally to be found in the best apartments and at *table d'hôte* or in winter garden or reading room; he is as 'correct in his conduct as in his dress, speaking more than one language fluently and volunteering help or advice often acceptable. Naples, Rome, Florence, Milan, Venice have all been favoured with his society of late, till scarcely a week passes without their journals putting on record an 'incident' of which the following is a typical example. Having secured a bedroom contiguous to that of his intended 'prey' he begins operations by perforating the wall near where his unconscious neighbour lays his head (instruments for the purpose he possesses in abundance) and at night through the aperture thus made he passes a cannula, long and fine, through which he anæsthetises the sleeper, generally with chloroform! He then forces the door, always with instruments perfectly adapted to the purpose, and at his leisure helps himself to whatever he wants from valise, handbag, or exposed purse, or jewellery, and decamps in the early morning in time for the 'through express.' A Florentine journal of the day now passing (July 18th) gives a yet more dramatic 'object lesson' in the methods of the 'ladro cosmopolita.' When he cannot get accommodated next to his intended victim he finds means during the day of 'introducing' himself into the said victim's room; he gently undoes the fixings of the lock and, again at night, he brings into play the other resources of his 'profession'—the 'maschera cloroformizzata' (the mask with the chloroform), the eel-skin loaded with small shot wherewith to stun the victim by a sudden blow; nay, the finely pointed stiletto with which to reach the heart in a twinkling, should resistance be offered. Landlords, particularly on the French or Italian Riviera, are now familiar enough with this type of 'ladro' to give him a special name—'topo d'albergo' (hotel rat) being the title he is known by in Italy. That he should be on the increase, while it testifies to the growing yield of victims, should also intensify the vigilance of the continental Governments in the course now taken by the Italian Foreign Minister. Luggage robberies, which ought in Italy at least, to be minimised by the transfer of the railways to Government control with a better manned and better paid *personnel*, have hitherto been a not inappreciable deterrent to the 'influx of foreigners.' On the other hand, the improved appointments, sanitary and other, mainly due to the 'requirements' of the English-speaking world, in hotels and *pensions* are now a distinct inducement to the visitor from abroad in search of distraction or health. It is high time that, with these reforms *in esse* or *in posse*, another should be made by the suppression of the 'ladro cosmopolita,' so as to convince the travelling world that if crime can keep pace with civilisation the latter is not without 'resources for the correction of its sinister developments.'"

THE EPIDEMIC OF ICE-CREAM POISONING AT BIRMINGHAM.

Dr. John Robertson, the medical officer of health of Birmingham, presented to the members of the Birmingham city council his report on the recent epidemic of ice-cream poisoning. In all there were 52 cases of illness. One patient was an adult 46 years of age, one 20, one 18, one 17, and the others under 14. The interval between the purchasing of the ice-cream and the onset of the illness varied from half an hour to eight and a half hours and all the patients complained of pain in the stomach and vomiting. Diarrhœa and collapse were symptoms in the majority of the cases. The chemical analysis disclosed none of the ordinary poisons. The bacteriological examination showed that it contained a poison and that in certain cases it was capable of causing inflammation and death in guinea-pigs. The poisonous property of the ice-cream was due to the presence of a bacillus or bacilli belonging to the colon group. The bacteriological analysis was made by Professor R. F. C. Leith. It appears from the report that about 250 people purchased the ice-cream. Dr. Robertson states that the ice-cream was made amid very insanitary surroundings and in close proximity to three water-closets which were in a very filthy state. He conjectures that excremental organisms had been blown into one of the buckets of ice-cream while it was in a warm condition and that rapid multiplication of the organisms took place. The condition of the premises in which this ice-cream was manufactured was not, Dr. Robertson concludes, worse than that of many other premises where ice-cream and other foods were stored or manufactured in Birmingham, so that there was a possibility of similar outbreaks occurring on other occasions. It is to be hoped that some prompt measures will be taken by the health authorities of Birmingham to prevent further outbreaks and that other local authorities will keep a strict watch upon the manufacturers of this dangerous article.

THE CHAIR OF MIDWIFERY IN THE UNIVERSITY OF EDINBURGH.

THE University of Edinburgh will shortly proceed to the election of a Professor of Midwifery in room of Professor A. R. Simpson whose resignation of the chair has been accepted as from August 31st next. A Lectureship in Gynæcology is also to be instituted and candidates for the chair of Midwifery will have to agree on an adjustment of the several duties of the professor and lecturer under the direction of the University authorities. Further particulars may be obtained on application to the secretary of the University Court, Mr. R. Herbert Johnston, W.S., with whom each candidate for the chair is requested to lodge, not later than Friday, Sept. 15th next, eight copies of his application and eight copies of any testimonials which he may desire to submit. One copy of the application should be signed. The secretary's address is 4, Albyn-place, Edinburgh.

THE STERILISATION OF SO-CALLED DEGENERATES.

MEDICAL officers of asylums so rarely succeed in securing from the community at large that degree of recognition which their work merits that to find a superintendent's report appearing in the public press is a circumstance sufficiently remarkable to be worthy of record. The *Gloucester Journal* of July 15th devotes three and a half columns to the reproduction *in extenso* of the last annual report upon the Gloucester County Lunatic Asylums by Mr. F. H. Craddock and this fact may be regarded as evidence that the general public is at last beginning to recognise the importance of the social problem which insanity presents. Mr. Craddock's views, as interpolated among the statistics which are customary in publications of this class, though not presenting any special novelty for the medical reader, are calculated to arrest the attention of the laity and cannot fail to prove illuminative. After admitting "the inability of any attempts to cure insanity in the present state of our medical knowledge," Mr. Craddock suggests that there is only one way of dealing with this question—viz., "by rendering it physically impossible for those affected (whether more or less deeply) with the taint of insanity to reproduce their species." Approval is expressed of the sentiment that prohibition is "useless without the bistoury" and the sterilisation of degenerates on the lines laid down more particularly by Dr. R. R. Rentoul is advocated. We are so completely in sympathy with Mr. Craddock's aims that we are loth to criticise unfavourably the methods of accomplishing them to which he gives support but we are constrained to wonder whether the upholders of sterilisation have a clear conception of the magnitude of the departure from the current conventions of society which they propose. Considering the immense difficulty of obtaining even such legal powers as would enable the community to supervise and to control its degenerate members, there does not seem the slightest probability that any scheme of asexualisation will fall within the sphere of practical politics. Accepting Dr. Rentoul's quoted estimate that the proportion of mental degenerates is 1 in 50 and of the "physically diseased and undeveloped" 1 in 5 of the total population, it would appear that there is hardly a family in this country which would not have to make a sacrifice of its most cherished instincts of humanity. We believe that a certain physician of Kansas achieved some considerable share of unpopularity by performing castration on 58 boys, but it does not appear that he obtained results which simple detention would not have supplied equally well, and, indeed, it is probable that the procedure of sterilisation would only be practicable in cases where, owing to the absence of opposition on the part of friends, permanent detention would present no difficulty.

HEART-BLOCK IN MAMMALS AND STOKES-ADAMS DISEASE.

IN the *Johns Hopkins Hospital Bulletin* for June Dr. Joseph Erlanger has published some interesting observations on the phenomenon termed by physiologists "heart-block," which throw light on the rare and curious affection known as Stokes-Adams disease (persistent bradycardia with epileptiform fits). In studying a case of this disease under the care of Professor W. Osler he found that the disturbances in the circulation were obviously due to heart-block. When the block was complete the auricles responded normally to influences exerted on the heart through its extrinsic nerves, but the rate of pulsation of the ventricles seemed to be uninfluenced by changes in posture, by atropine, or by moderate exercise. However, the rate was increased by more severe exercise. On the other hand, when the block was partial the ventricles, as well as the auricles, responded normally within certain limits to extrinsic influences. During the attacks of unconsciousness the interval between the beats of the ventricle was as long as 12 *seconds*. These observations led Dr. Erlanger to study heart-block in mammals without destroying all the tissue in a cross section of the heart. He found that in the dog this could be done by clamping the limited region in which lies the only muscular connexion between the auricles and ventricles, the auriculo-ventricular bundle of His. When the clamp was placed in this position the heart continued to beat with undisturbed rhythm but when the arms of the clamp were cautiously screwed together the normal sequence of the auricular and ventricular beats gave place to a partial block in which the beats of the auricles were to those of the ventricles as 2 to 1. With further clamping a 3 to 1 rhythm was sometimes established and this usually passed into a complete block in which the beats of the ventricles were independent of the beats of the auricles. These changes occurred in reverse order when the clamp was unscrewed. As a rule the changes of rhythm occurred suddenly, that is, without preliminary stoppage of the ventricle. In two experiments on tightening the clamp the normal sequence gave place to complete block without passing through intermediate stages; the ventricular rate was markedly slowed and the blood pressure fell to a very low level. In one case the interval between two ventricular contractions was 21 seconds. The ventricular rate and the blood pressure then gradually increased. With each change of rhythm the blood pressure was much affected, falling with the fall of ventricular rate and rising with its increase. But even in complete block a fair pressure might be maintained. With partial block both auricle and ventricle might be inhibited by stimulation of the vagus as easily as under normal conditions. But when the block was complete no diminution or only slight diminution of the rate of the ventricle resulted from stimulation of the vagus. The auricles reacted normally to vagus stimulation. Section of both vagi had little or no influence on the rate of the ventricular beat when the block was complete. But stimulation of the accelerator nerve usually increased the rate of the ventricle. This was sometimes as great proportionally as in normal conditions. The reaction of the auricles to stimulation of the accelerator nerve was not influenced by the block. The analogies between heart block in the dog and Stokes-Adams disease are thus obvious. Dr. Erlanger therefore concludes that the situation of the lesion must be the same in both conditions.

OVERLYING AN INFANT PUNISHED AS MANSLAUGHTER.

At the recent Chester assizes, on July 19th, Mr. Justice Phillimore sentenced a woman, aged 31 years, to 21 months' imprisonment with hard labour. It was given in evidence that 11 days after her confinement, at Birkenhead, she insisted on taking her child, who was thoroughly healthy, to bed with her when she was in a drunken state; she slept heavily and overlay and suffocated the infant. The jury found her guilty of the manslaughter of her babe by an act of gross and culpable neglect. Many coroners have tried to secure such a verdict in similar cases of alcoholic infanticide but they find it very difficult sufficiently to persuade the inquest juries sitting upon such unnatural deaths and even where these juries have agreed to a verdict of manslaughter when the case comes before the sessions or the assizes the grand jury commonly finds "No true bill," for public opinion does not yet consider the massacre of the innocents concerned as a criminal offence capable of proof.

THE ADDITIONS TO THE SCHEDULE OF POISONS.

As announced in THE LANCET recently[1] the Council of the Pharmaceutical Society has recommended certain additions to the schedule of poisons. These suggestions have been considered by the Privy Council with the result, as announced in the *London Gazette* of July 18th, that the majority of the substances named have been added to the schedule. Of these, cocaine and its salts, picrotoxin, preparations of cocaine, digitalis and its preparations, mercuric iodide, mercuric sulphocyanide, and strophanthus and its preparations are now deemed to be poisons within the meaning of the Pharmacy Act, 1868, while cocaine and its salts and picrotoxin are deemed to be poisons in the first part of the Schedule A of the same Act. The substances not approved by the Privy Council as additions to the schedule are acetanilide, soluble salts of oxalic acid, and sulphonal. These are quite ignored by the Privy Council, in spite of the fact that the Departmental Committee on Poisons unanimously recommended the addition of these substances to the schedule. It may be that the authorities at Whitehall have listened favourably to the objections advanced by interested persons to the inclusion of these substances in the schedule. Be that as it may, the responsibility will rest with the Privy Council if further fatalities occur through the unrestricted sale of these drugs. The Council of the Pharmaceutical Society has exercised its statutory functions in the matter and has performed a public duty. This is not the first time that a Government department in its wisdom has over-ridden the representations of departmental committees and other technical advisers.

THE following are among the recent amounts received at the Mansion House in behalf of the Metropolitan Hospital Sunday Fund:—St. Mary Abbots parish, Kensington, £758 13*s.* 11*d.*—viz., St. Mary Abbots, £540 12*s.* 3*d.*; Christ Church, £100 16*s.* 4*d.*; and St. Paul's, Vicarage Gate, £117 5*s.* 4*d.*; St. Nicholas parish church, Chislehurst, with St. John the Baptist, £265; St. John, Paddington, £195; St. Paul, Avenue-road, £145; St. Paul, Beckenham, £140; and Lincoln's Inn Chapel, £105. The total now exceeds £61,000.

DR. A. C. Houston has been appointed Director of Water Examinations, Metropolitan Water Board, at a salary of £1000 per annum.

THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THE QUATER-CENTENARY CELEBRATIONS.

THE Royal College of Surgeons of Edinburgh began the celebration of its quater-centenary on Wednesday evening, July 19th, by a formal reception of its guests at its home in Surgeons' Hall. The more public part of the celebrations began on Thursday morning and were continued without much interval until early on Saturday forenoon. The weather fortunately was very fine and contributed not a little to the success of the series of entertainments organised in honour of the occasion.

The opening public ceremony was a service in the old Cathedral of St. Giles. The College authorities had fortunately obtained permission to use part of the hall of Parliament House as a meeting place and there their distinguished visitors, representatives of many local bodies, of learned societies, and of the medical press met, and being carefully marshalled walked in procession across Parliament House-square to the west entrance of the cathedral from which point, passing up the central aisle, they reached their seats in the choir. Academic costume or uniform was worn. An elaborate attention to detail, due to the younger Fellows of the College under the direction of Mr. J. W. Dowden, the special secretary for the occasion, characterised all the functions and gave a smoothness and finish to them worthy of the masters of the ancient craft and pleasant to those who had the privilege of participating in them. The service in the cathedral consisted of a specially printed liturgy, the prayers having particular bearing upon the occasion. They were read by the Very Rev. Dr. Cameron Lees, Minister of St. Giles and Dean of the Chapel Royal of Scotland. The sermon was preached by the Rev. Dr. William P. Paterson, Professor of Divinity in the University. He took as his text St. John ix. 1–3: "And as Jesus passed by, he saw a man which was blind from his birth. And his disciples asked him, saying, Master, who did sin, this man, or his parents, that he was born blind? Jesus answered, Neither hath this man sinned, nor his parents: but that the works of God should be made manifest in him." The preacher at the outset referred to the old connexion between the Incorporation of Barber-Surgeons and St. Giles's, the Incorporation in the early days maintaining an altar in St. Giles's dedicated to God and to their patron saint St. Mungo. He thought that apart from this there was sufficient reason that the intimate relations between the healing art and the Christian Church should be prominently recognised at such a celebration as the present. It was true, he said, that at certain periods the Church attempted to obstruct the march of science along particular lines and retarded to some extent the development of a rational system of medicine, but as an offset to that it was to be remembered that amid the shocks and losses of mediæval times it was the Church which was the chief custodian of the scientific legacy from antiquity which saved the world from intellectual bankruptcy, while the enthusiasm of humanity which had supplied the moral dynamic of the medical profession in the modern western world had been chiefly engendered by the religion which adored in a good physician God manifest in the flesh and which proclaimed the infinite value of every human being as made in the image of the Eternal God. The preacher then proceeded to examine the problem of human suffering and to contrast the old-world idea that it was to be explained on a penal principle with the Christian view laid down in the text, that a world of disease was a world of divine opportunity. The remarkable saying of Christ found its most obvious illustration in the rise and progress of medicine and surgery. A grim necessity, as Hippocrates put it, was the mother of the healing art. The universal and unceasing distress was an imperious summons to thought and action and in responding to it the human mind found a field in which it discovered and matured its latent powers and also entered upon a course of brilliant and beneficent discovery. The preacher at considerable length then traced the development of the healing art and showed how pure science became in the first place a by-product of practical medicine until knowledge came to be sought for its own sake.

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[1] THE LANCET, April 15th, 1905, p. 1013.

After the service in St. Giles's Cathedral a luncheon was given by the Lord Provost, magistrates, and town council in the City Chambers. The company numbered about 100 and consisted of members of the town council, prominent Fellows of the Royal College of Surgeons of Edinburgh, and all the distinguished guests of the College. The toast of "The Royal College of Surgeons of Edinburgh" was proposed by Sir ROBERT CRANSTON, the Lord Provost, in felicitous terms, and was briefly replied to by the PRESIDENT, Sir PATRICK HERON WATSON.

The great event—the commemoration ceremonial—was held in the afternoon in the McEwan Hall. The area of the hall, the seats in which were all numbered, was reserved to the left of the chair for the Fellows of the College, and to the right of the chair for representatives of other colleges, of various universities, and other learned bodies. Academic costume was worn. The platform and two or three rows of seats in the area were reserved for special persons, including those upon whom the honorary Fellowship was to be conferred and who at the appointed hour entered the hall in procession, the President of the College, with the mace-bearer, leading, followed by the Lord Provost. The raised area and the galleries were occupied largely by ladies. When all had taken their places the aspect of the hall was very striking and effective, the weather favouring the scene and the ladies being in the brightest of summer attire.

The PRESIDENT then rose and delivered a short address of welcome in which he dwelt on the ancient history of the College. The origin of the Royal College of Surgeons of Edinburgh as a corporate body, he said, must be traced back to the reign of James IV. of Scotland. He it was who, on Oct. 13th, 1506, confirmed by Royal Charter the "Seill of Cause" which a year previously, in July, 1505, had been granted to the barber-surgeons resident within the burgh of Edinburgh by the provost, bailies, and council of the burgh. There is, however, reason to believe that even prior to this date an organised body of practitioners had already existed in Edinburgh to whose laudable desire for an accredited position and for authority to practise and to teach the College is indebted for its inception. This body by its energy and indomitable perseverance met and overcame the difficulties which stood in its way; and on recalling to mind the comparatively barbarous condition of the country at that time, and the terrible strife by which it was torn, it is impossible to do otherwise than to regard with admiration and with respect the work which these men were able to accomplish as pioneers of a great cause. At this period Scotland appears to have been placed at a serious disadvantage owing to the early age at which its sovereigns were called upon to ascend the throne. James III. of Scotland, the father of the founder of the College, was but a boy of eight when called upon to occupy this difficult position by the death of his father—James II. The haughty Scottish nobility were incapable of appreciating the King's devotion to intellectual pursuits and great dispeace was thus created which ended in rebellion and, finally, in the death of James at Sauchie in 1488. On the accession of his son, King James IV., the rebellion was subdued and a period of comparative peace was entered upon. King James IV. is described as having been a man of polished and agreeable address, with qualities of mind as outstanding as those of his bearing, while his knowledge of languages appears to have been of a high order, for he spoke, in addition to his own tongue, fluent French, German, Flemish, Italian, and Spanish, and had a good knowledge of the Latin classics. In character he was neither prodigal nor avaricious but liberal when occasion required and he was courageous to the point of rashness. This was the Prince who, by his enlightened qualities of mind, was led to confirm by Royal Charter in 1506 the establishment of the College of Surgeons of Edinburgh. He is said to have made it his special care to provide for the health and the well being of his army by supplying it with surgical aid and it is conceivable that in granting official recognition to the College by the bestowal of a Royal Charter he had before him the possible realisation of this great-minded purpose. The President concluded an eloquent address by first referring all interested in the past of the College to Dr. John Smith's admirable treatise upon its history and then by expressing the deep sense of regret that all Scots must feel at the loss of the late Principal of the University, Sir William Muir.

At the close of the address the secretary, Dr. Francis Cadell, constituted the meeting of the College by reading the following prayer, which is traditionally understood to have been framed by John Knox: "O eternal God, our loving and merciful Father in Christ Jesus—Seeing we are convened to treat of those things which concern our calling, we beseech Thee, O Lord, to be merciful to us and give us grace to proceed therein without malice, grudge, or partiality; so that the things we do may tend to the glory of God, the weal of our vocation, and the comfort of every member of it; through Jesus Christ our only Lord and Saviour. Amen."

The conferring of the honorary Fellowship was then proceeded with. Sir Halliday Croom, Vice-President of the College, acted as promoter, introducing each of the distinguished men upon whom the College had decided to confer this honour and passing on each a short and pithy eulogy. All the names were received with applause, while the whole audience rose to their feet in honour of Lord Lister who was absent. After this most interesting part of the ceremonial some words of thanks and of appreciation were said by the various recipients of the honour who were present. This part of the proceedings had also been well organised, for the words of thanks were as brief and as pointed as were the promoter's. Following are names of those on whom was conferred the honorary Fellowship of the College:—

AUSTRIA.

VON EISELSBERG, ANTON FREIHERR, M.D., Professor of Surgery, University of Vienna.

(*In absentiâ*) FUCHS, ERNST, M.D., Professor of Ophthalmology; Director of the First Division for Eye Diseases in the Allgemeines Krankenhaus, Vienna.

DENMARK.

SAXTORPH, SYLVESTER, M.D., Professor of Clinical Surgery, University of Copenhagen; Surgeon to the Kommune Hospital; Knight of the Order of Danneborg; formerly Surgeon to *His Majesty* the King of Denmark.

FRANCE.

(*In absentiâ*) GUYON, FELIX, M.D., Professor in the Faculty of Medicine, Paris; Surgeon to the Necker Hospital; Member of the Institute; Member of the Academy of Medicine.

[illegible], JUST, M.D., Professor of Surgery in the [illegible]; Member of the Academy of Medicine.

[illegible], M.D., Professor of Surgery in the Faculty of Medicine, Lyons; Corresp[illegible] Member of the Academy of Medicine; formerly Surgeon-in Chie[illegible].

SEGOND, PAUL, M.D., [illegible] in the Faculty of Medicine, Paris; Surgeon [illegible].

(*In absentiâ*) TERRIER, LOUIS FÉLIX, M.D., Professor of Surgery in the Faculty of Medicine, Paris; Surgeon to the Hôpital de la Pitié; Member of the Academy of Medicine.

GERMANY.

[illegible] S. EXC. ERNST, M.D., F.R.C.S. Eng. [illegible] University of Berlin; Royal Prussian [illegible] (*I*[illegible] M[illegible] [illegible]ial Russian Actual Councillor of State; Knight of the Prussian Order of Hohenzollern, the Prussian Kron and Red Eagle Orders; Knight Grand Cross (with Diamonds), Imperial Russian Orders of the Holy Anne, of the Holy Stanislas, and the Holy Vladimir; *General-Arzt of the Prussian Army*, with the rank of Major-General.

BIER, AUGUST, M.D., Professor of Surgery, University of Bonn; formerly Professor of Surgery in Greifswald.

[illegible] VINCENZ, M.D., Professor of Surgery, [illegible]

[illegible]RANZ, M.D., F.R.C.S. Eng. (*Hon.*), Professor [illegible] Clinical Surgery at the Charité Hospital, Berlin; General [illegible] suite of the Army Medical Corps.

(*Sent to relatives*) VON MIKULICZ-RADECKI, JOHANNES, LL.D. Edin., Glasg., and Phila., General Arzt à la suite of the Medical Corps of the Royal Prussian Army; Professor of Surgery and Director of the Surgical Clinic, University of Breslau. *Died June 17th, 1905.*

ITALY.

DURANTE, FRANCESCO, M.D., F.R.C.S. Eng. (*Hon.*), Senator; Professor of Clinical Surgery, Royal University of Rome; Knight of the Most Distinguished Order of the "Merito Civile di Savoia"; Knight Grand Cross of the "Corona d'Italia."

JAPAN.

(*In absentiâ*) SANEYOSHI, BARON YASUZUMI, Director-General of the Medical Department, Imperial Japanese Navy.

RUSSIA.

(*In absentiâ*) SUBBOTIN, MAXIM SEMENOVIC, Chief of the Surgical Clinic, Military Hospital, Imperial Academy of Medicine, St. Petersburg.

SWEDEN.

LENNANDER, KARL GUSTAV, M.D., F.R.C.S. Eng. (*Hon.*), Professor of Surgery and Obstetrics, University of Upsala.

SWITZERLAND.

(*In absentiâ*) KRÖNLEIN, ULRICH, M.D., Professor of Surgery, University of Zürich.

UNITED STATES OF AMERICA.

HALSTED, WILLIAM STEWART, M.D., F.R.C.S. Eng. (*Hon.*), Professor of Surgery, Johns Hopkins University, and Surgeon to the Johns Hopkins Hospital, Baltimore.

KEEN, WILLIAM WILLIAMS, A.M., M.D., LL.D., F.R.C.S. Eng. (*Hon.*), Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College; Surgeon to the Jefferson Medical College Hospital, Philadelphia.

KELLY, HOWARD A., A.B., M.D., Professor of Gynæcology and Obstetrics, Johns Hopkins University; Gynæcologist and Obstetrician, Johns Hopkins Hospital, Baltimore; Corresponding Member of the Société Obstétricale et Gynécologique of Paris and of the Gesellschaft für Geburtshülfe of Leipsic.

(*In absentiâ*) MAYO, WILLIAM J., M.D., Surgeon to St. Mary's Hospital, Rochester, Minnesota.

(*In absentiâ*) WARREN, JOHN COLLINS, M.D., LL.D., F.R.C.S. Eng. (*Hon.*), Professor of Surgery, Harvard University; Surgeon to the Massachusetts General Hospital.

BRITAIN.

(*In absentiâ*) BOMFORD, Lieutenant-Colonel GERALD, M.D., C.I.E., Director-General of the Indian Medical Service.

CAMERON, IRVING HOWARD, M.B., F.R.C.S. Eng. (*Hon.*), Professor of Surgery and Clinical Surgery, University of Toronto; Surgeon to the Toronto General Hospital.

CHANCE, ARTHUR, President of the Royal College of Surgeons in Ireland; Surgeon to the Mater Misericordiæ Hospital and to the Dublin Orthopædic Hospital; Consulting Surgeon to St. Michael's Hospital; President of the Surgical Section of the Royal Academy of Medicine, Ireland.

CLARK, HENRY [illegible] of the Faculty of Physicians and Surge[illegible] of Surgery, St. Mungo's College, Glasgow; [illegible] yal Infirmary; Honorary Associate of the Order of St. John of Jerusalem.

ELLIS, HERBERT MACKAY, Director-General of the Royal Navy Medical Service.

(*In absentiâ*) FITZGERALD, Sir THOMAS NAGHTEN, C.B., M.D., Honorary Surgeon, Melbourne Hospital; Consulting Surgeon, St. Vincent Hospital, Melbourne; Ex-President, Inter Colonial Medical Congress of Australasia; President of the Medical Society of Victoria.

KEOGH, ALFRED HENRY, C.B., M.D., Director-General of the Army Medical Service

(*In absentiâ*) Lord LISTER, P.R.S., D.C.L., LL.D., Serjeant-Surgeon to His Majesty the King.

(*In absentiâ*) MACCORMICK, ALEXANDER, M.D., Lecturer on Surgery in the University of Sydney; Surgeon to the Prince Alfred Hospital, Sydney; Member of the Royal Society of New South Wales.

PLAYFAIR, JOHN, M.D., President of the Royal College of Physicians of Edinburgh; formerly Physician to the Royal Hospital for Sick Children, Edinburgh.

TWEEDY, JOHN, President of the Royal College of Surgeons of England; Emeritus Professor of Ophthalmology, University College; Consulting Ophthalmic Surgeon, University College Hospital; Consulting Surgeon, Royal London Ophthalmic Hospital; President of the Ophthalmological Society, London.

SHEPHERD, FRANK J., M.D., Professor of Anatomy in M'Gill University, Montreal; Lecturer in Operative Surgery.

(*In absentiâ*) M'BURNEY, CHARLES, M.D., Professor of Clinical Surgery, Columbia University; Consulting Surgeon to the New York Hospital.

Thereafter congratulatory addresses were presented by the following bodies :—

The University of St. Andrews.—By the Dean of the Faculty of Medicine (Professor REID) and the Principal of University College, Dundee (Professor YULE MACKAY).

The University of Glasgow.—By the Dean of the Faculty of Medicine (Professor MURDOCH CAMERON).

The University of Aberdeen.—By the Dean of the Faculty of Medicine (Professor R. W. REID).

The University of Edinburgh.—By the Principal (Sir WILLIAM TURNER, K.C.B.).

The Royal College of Surgeons of England.—By the President (Mr. JOHN TWEEDY).

The Royal College of Surgeons in Ireland.—By the President (Mr. ARTHUR CHANCE).

The Royal College of Physicians of Edinburgh.—By the President (Dr. PLAYFAIR) and the Treasurer (Dr. P. A. YOUNG).

The Faculty of Physicians and Surgeons of Glasgow.—By the President (Professor H. E. CLARK).

The Royal Society of Edinburgh.—By the Senior Vice President (Professor GEIKIE).

The Edinburgh Medico-Chirurgical Society.—By the President (Professor CHIENE, C.B.).

The Edinburgh Obstetrical Society.—By the President (Dr. N. T. BREWIS).

The Royal Medical Society.—By the President (Dr. R. J. JOHNSTON).

The Merchant Company of Edinburgh.—By the Master (Mr. JOHN HARRISON).

The Managers of the Royal Infirmary of Edinburgh.—By the Chairman (the LORD PROVOST).

Some of the earlier presented addresses were read but the others were merely handed to the President. This very interesting ceremonial, which passed off without any hitch worthy of remark, was concluded by the singing of the National Anthem accompanied by the organ.

The dinner hours were monopolised by the Fellows of the College in dispensing the most liberal hospitality to friends from the city and the country, as well as to their guests from England, America, and the various countries of Europe. At half-past nine a reception was held by the President and Fellows of the College in the Royal Scottish Museum, at which there were some thousands of guests, the scene being a bright and gay one.

Friday forenoon was free of public function but in the early afternoon the Royal College of Physicians gave a luncheon in the hall of its College in honour of the sister College and of the distinguished guests. The chair was occupied by the President of the College, Dr. John Playfair, and there was a large party of Fellows and guests. The afternoon was devoted to a garden party given by the President and Fellows of the Royal College of Surgeons in the grounds of George Heriot's Hospital. The hospital, which is situated opposite the Royal Infirmary, is one of the finest specimens of Tudor architecture extant and was thrown open to the guests. The grounds are large, the day was bright and warm, and the scene was gay and animated.

In the evening a grand banquet was held in the Music Hall, to which about 350 sat down. The President was supported to right and left by the Lord Provost of Edinburgh, by the French Ambassador, M. Cambon, and other prominent officials and distinguished guests. The hall was beautifully decorated for the occasion and the banquet itself was of a choice description. The loyal and patriotic toasts were proposed in a few words by the PRESIDENT; then the VICE-PRESIDENT proposed "The Lord Provost and Magistrates of the City of Edinburgh," which was responded to by the LORD PROVOST. In both speeches the old relations between the town council and the ancient craft were referred to. "The Honorary Fellows of the College" was then proposed by the PRESIDENT in a few appropriate sentences and was received with much enthusiasm, the company singing "For they are jolly good fellows." Professor Freiherr VON EISELSBERG and Dr. HALSTED replied for the honorary Fellows, the former speaking of Simpson and of Lister, and the latter of the hospitality which had been lavishly bestowed upon them.

The toast of "The Guests" was in the hands of Principal Sir WILLIAM TURNER who in carefully measured terms and eloquent manner spoke of the origin of medical guilds and corporations from the private working of members of the profession and not from the State, for it was found that men could work better in combination than as isolated units. As the outcome of these combinations there emerged a system of medical education, gradually perfecting itself throughout the generations, a method of testing the system of education by examination, and, what he thought was of more importance within the profession even than these matters, a sentiment of professional honour—a code of conduct which should regulate the action of medical men towards each other and towards the great public with which they were so intimately associated. Many of the guests recognised the value of that corporate combination. Their guests from the continent, however, had come there because they remembered that they were all members of a common profession whose function it was to probe into the causes of disease, to do what seemed to them to be the best to get rid of the causes of disease, and to put the practice of medicine on a wide and proper footing. It was not one country that did that, it was by a combination of all the countries where medical science was practised, and he illustrated this by reference to Pasteur, Lister, and Koch. He ventured to think that there was a wider significance in their meeting that evening. It was more than a mere professional gathering for they were honoured with the presence of the Ambassador for the great Republic of France. Sir William Turner referred in glowing terms to the old connexion of Scotland with France, the greatness of France and of the French people, and hoped that brotherly love between the two peoples might ever prevail. That this admirable speech, every syllable of which was heard in every part of the hall, had expressed the sentiments of the whole company was shown by the shouts of applause with which it was received. When M. CAMBON rose to reply the whole company rose and gave him an ovation which could not be surpassed in its evident spontaneity and the warmth of its expression. M. Cambon must have felt that the *entente cordiale* had a deeper foundation than mere statecraft or diplomatic understanding.

The last toast on the list was in the name of Sir JOHN URE PRIMROSE, the Lord Provost of Glasgow, and "The Royal College of Surgeons of Edinburgh" could not have been in more capable hands. After referring to the 400 years during which the College had existed as full of momentous issues for Scotland, for Britain, and for the world, he proceeded to pass a high eulogy upon the profession of medicine and surgery. He said that, as one who had participated in civic administration and had felt that underlying it was the doctrine of making this world brighter, happier, wholesome, and a more desirable dwelling place for the human unit, and as one who had loyally held to that doctrine, what a debt of gratitude they owed to the medical profession in all its branches. He expressed, also, great faith in the future of medicine, for he believed that the most eminent men in that assembly would confess that as yet they stood on the threshold of the investigation of causation and cure, and the mind that assumed that attitude, with lowliness and meekness, but with sincerity, was the truest and most possible force in future achievements. He believed that for years to come from the ranks of a college such as this, and inspired by the traditions of a college such as this, many men would rise to confer benefits on their fellows that would justly entitle their fellows to call them blessed. This toast was briefly responded to by the PRESIDENT who acknowledged the high conception formed by the proposer of the toast of the duties of the medical man. Thereafter the company joined in singing the National Anthem, followed by "Auld Lang Syne."

This brought to a close the official programme of the College and it only remains to compliment those concerned upon the administrative faculty shown by the celebration secretary, Mr. John W. Dowden, F.R.C.S. Edin., and the group of younger surgeons upon whom much of the labour of the arrangements necessarily fell, and to congratulate the President and the Fellows of the College on the manner in which all the proceedings were carried through and upon the public interest shown in the College.

On Saturday the University of Edinburgh held a special graduation ceremonial with the object of conferring the honorary degree of Doctor of Laws upon the foreign, American, and colonial guests of the Royal College of Surgeons. The following were thus honoured:—The French Ambassador, His Excellency M. Paul Cambon; Professor Irving Howard Cameron, Dr. Just Lucas-Championnière, Professor Francesco Durante, Professor Anton Freiherr von Eiselsberg, Professor William Stewart Halsted, Professor William Williams Keen, Professor Karl Gustav Lennander, Professor Saxtorph, and Professor F. J. Shepherd.

Principal Sir WILLIAM TURNER, at the close of the capping ceremonial, said it was not customary to have replies from the recipients of the honour but as this was a special occasion he thought it would be gratifying to the Senatus and to many of the friends assembled if he requested the French Ambassador to speak a few words on behalf of the European honorary graduates and Dr. Keen on behalf of those who came from the other side of the Atlantic.

M. CAMBON, speaking in French, made complimentary reference to the honour which the University had conferred upon him and proceeded to speak of the illustrious position of the University of Edinburgh and of the traditional friendship between France and Scotland and of the pleasure that it had given him to visit Edinburgh.

Dr. KEEN said that he and his transatlantic brethren came to Edinburgh as their academic Jerusalem—beautiful for situation, the pride of the whole earth. They were not strangers. They had been encompassed with kindness and they had not only been "capped" but "captured."

The proceedings concluded with the benediction.

THE PROPOSED AMALGAMATION OF THE LONDON MEDICAL SOCIETIES.

THE following is the report of the executive committee to the committee composed of representatives of the societies, which was accepted by the committee on Wednesday, July 19th. We deal with it in a leading article this week:—

Your committee beg to report that in accordance with their powers they coöpted Mr. Makins and appointed Dr. Arthur Latham and Mr. Herbert S. Pendlebury to act as honorary secretaries.

We instructed Messrs. Newson-Smith, Lord, and Mundy, chartered accountants, to investigate the rolls of membership and the accounts of the following societies:—Medical; Royal Medical and Chirurgical, Pathological; Clinical; Obstetrical; Gynæcological; Neurological; Epidemiological; Medico-Psychological; Ophthalmological; Laryngological; Laryngological Otological-Rhinological Association; Otological; Dermatological of London; Dermatological of Great Britain and Ireland; Society for the Study of Diseases of Children; Odontological; Association of Medical Officers of Insurance Companies; Balneological; Society of Anæsthetists; Electro-Therapeutic; Therapeutic.

The accountants inform us that the 22 societies whose membership lists were collated have a total membership of 7229, constituted by 4997 persons. Of these 3725 are members of one society only, and the balance, 1272, are members of [illegible]

The accountants, upon th[illegible] e societies, further inform us th[illegible] bequests and trust funds) over liabilities of these societies is more than £40,000. If 3800 members of societies other than the Royal Medical and Chirurgical Society become members at a subscription of £1 1s. per annum the new society will have a small balance of income over expenditure. If any members of these societies become Fellows at a subscription of £3 3s. per annum the balance will be proportionately increased. This estimate is based on the present income and expenditure of the Royal Medical and Chirurgical Society, together with the present income and expenditure of 17 other societies, as given in subjoined table, and makes no allowance for any economies which may be effected by the union.

Estimate of Income and Expenditure of the proposed Royal Society of [illegible] housed at 20, Hanover square, on Basis of Income and Expenditure of existing 18 Societies for the Year ending Dec. 31st, 190[illegible].

EXPENDITURE.		INCOME.	
Royal Medical and Chirurgical Society	£4,307	Royal Medical and Chirurgical Society	£4,911
Loss of rent by union	770		
Of other 17 Societies.		*Of other 17 Societies.*	
"Transactions," less sales but without allowance for income by advertisements ...	2,545	Rent of Medical Society	940
Staff	650	Investments	350
[illegible]	166	Interest from investment of present cash balance	50
[illegible]	121	Entrance fees	166
[illegible]ture	1,670	3800 subscriptions at £1 1s	3,990*
Balance	198		
	£10,427		£10,427

* The actual amount received last year from subscriptions by these 17 societies was £5033.

In view of the facts that 3525 persons already subscribe £1 1s. to these 18 societies per annum, that 1272 pay from £2 2s. upwards, and that under the proposed scheme many individuals who are not Fellows of the Royal Medical and Chirurgical Society would become Fellows of the Royal Society of Medicine at an annual subscription of £3 3s., your committee consider that the new society would have a sufficient balance of income over expenditure to provide for improvements and for any sinking fund rendered necessary by extensions to 20, Hanover square, supposing that all the scheduled societies joined.

This is shown more clearly from the following estimate of subscriptions which may be received from members of the various societies who are not Fellows of the Royal Medical and Chirurgical Society:—

	£
600 members of societies as Fellows at £3 3s. ...	1890[1]
3200 members at £1 1s	3360
Library subscriptions at £1 1s., say	525
	£5775

If this £5775 replaces the conservative estimate of £3990 from subscriptions in the foregoing estimat[illegible] the [illegible] estimated annual balance of £198 [illegible] further information as to the fina[illegible] until we know exactly which societies have definitely decided to join the proposed Royal Society.

Your committee suggest that every member of the societies which shall amalgamate shall have the option of joining the new society without entrance fee and that as far as possible the members of these societies shall retain their present privileges in the new society. For example, any Fellow of the Royal Medical and Chirurgical Society who has compounded for his subscription will be entitled to join the Royal Society of Medicine as a Fellow without further payment of any kind and a member of any society who has compounded for his subscription [illegible] section of the Royal Society of [illegible]

Your c[illegible] suggestions might be embodied [illegible] new society, namely, that—

1. The new society shall be called the Royal Society of Medicine, or the Royal Academy of Medicine, according to the vote of the societies concerned.

2. All moneys, books, premises, and other properties belonging to any of the societies which join the proposed union shall become the property of the new society.

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[1] This figure 600 is arrived at as follows: 1272 members belong to two or more societies, the figures, taking 1300 instead of 1272, show that—

751 members belong to two societies
300 " " three "
134 " " five "
72 " " six "
31 " " seven "
5 " " eight "
6 " " nine "
1 " "

The number of Fellows of the Royal Medical and Chirurgical Society paying an annual subscription of £3 3s. is 420 (many of these probably belong to no other societ[illegible] but if we deduct their entire number from [illegible] 1272 there are at [illegible] societies. The co[illegible] become Fellows of [illegible]

3. The society shall be housed at 20, Hanover-square. Increased accommodation, if required, can be obtained by extending the premises and by the absorption of certain rooms now occupied by tenants of the Royal Medical and Chirurgical Society.

4. The society shall meet four or more times a year to discuss subjects of medical and scientific interest.

5. The society shall consist of the following sections, with power to add new sections or to modify existing ones with the consent of the members (1) Anæsthetic; (2) Clinical; (3) Dermatological; (4) Diseases of Children; (5) Epidemiological; (6) Laryngological, Otological, and Rhinological; (7) Medical; (8) Mental Medicine (Psychiatry); (9) Neurological; (10) Obstetrical and Gynæcological; (11) Odontological; (12) Ophthalmological; (13) Pathological; (14) State Medicine; (15) Surgical; (16) Therapeutical, including General Therapeutics, Pharmacology, Electro-therapeutics, Balneology, and Climatology. It is hoped that in the early future an anatomical and physiological section may be formed.

6. The society shall consist of Fellows, Members, Honorary Fellows, and Honorary Members.

7. The Fellowship of the society shall be restricted to those who are registered medical practitioners of the British Empire and to men whose scientific attainments are satisfactory to the general council.

8. A Fellow shall pay, subject to any future by-law, an annual subscription of £3 3s., and shall have the right to attend all meetings of the society or of any of its sections, and shall have full use of the library. After the society is constituted (i.e., after a date to be subsequently determined) a new Fellow shall pay an entrance fee of £2 2s.

9. Each section shall have the power to elect as members of the society such persons as the council of the section may think fit, provided that the names of the candidates proposed for election be previously submitted by the sectional council to the council of the society for their approval.

10. A member of any particular section shall pay, subject to any future by-law, £1 1s. per annum, and shall have the right to attend all the meetings of his section, but must pay an additional £1 1s. per annum if he wishes to have the use of the library, and a further subscription of 10s. 6d. per annum for each additional section.

11. The general management of the society shall be under the control of a general council, consisting of the president, the presidents of the various sections, two treasurers, two librarians, two secretaries, and eight other Fellows.

12. The entire management of the funds of the society shall be in the hands of a finance committee, subject to and acting as a sub-committee of the general council.

13. In order to enable existing societies to retain their individuality as far as possible each section shall have power to make the necessary laws and regulations for the conduct of its business.

14. The presidents of sections shall be *ex officio* vice-presidents of the society, and shall serve on the general council of the society.

15. In the estimate provision has been made for a monthly publication (July, August, and September excepted), to be called "The Proceedings of the Royal Society of Medicine." This publication will be under the control of an editorial committee, and will contain a record of the work of each section during the previous month. By such prompt publication the value of the records will be greatly increased. In addition, the committee will select, subject to the approval of the general council, such papers as they may consider worthy of publication in the "Transactions" of the society.

The committee further suggest that it would be to the advantage of the Royal Society if a committee were formed of representatives of the various sections, charged with the duty of receiving all papers to be read before the society or its sections. This committee should have power to decide before which section any given paper should be read, and to decide whether other sections or the whole society should be asked to join in the discussion. Authors of papers should have the privilege of suggesting the section or sections before which they wished to read their papers.

It is hoped greatly to increase the value of the present library at 20, Hanover-square, and to provide an additional reading room for the use of Fellows and members.

Your committee ask the various societies concerned to consider the scheme submitted at an early date and to inform the honorary secretaries of their views. As soon as the committee is in possession of these views further steps can be taken.

In conclusion, your committee beg to express the unanimous opinion that the union of medical societies will do much to enhance the prestige of British medicine, that it will increase the value of the work at present carried out by existing societies, and that it will be to the great convenience of the medical profession.

(Signed) W. S. Church, Chairman.
R. Douglas Powell.
Henry Head.
John Langton.
David H. Goodsall.
G. H. Makins.
Charters J. Symonds.
Arthur Latham, } Honorary
Herbert S. Pendlebury, } Secretaries.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE annual meeting of this association was held at the Medical Society's rooms, Chandos-street, London, W., on July 20th and 21st.

On the opening day the chair was occupied during the earlier portion of the meeting by the President, Dr. R. Percy Smith, and after the purely business portion had been transacted by the new President, Dr. T. Outterson Wood. There was a very large attendance of members from all parts of the kingdom. Dr. Percy Smith was heartily thanked for his services as president during the year. Dr. Wood, on taking the chair, was cordially received.

In his Presidential Address Dr. Wood sympathetically referred to the death of the late Sir John Sibbald and proceeded to compare the position of the association with that of 25 years ago. In 1880 there were 394 members and to-day there were 680. The success of the association had been much helped by the formation of subdivisions. He proceeded to call attention to the responsibility resting upon medical men in prescribing powerful drugs and the ease with which patients could obtain them in unlimited quantity by taking the prescription from one druggist to another. Such poisons had been used for committing suicide. On the question of incipient insanity he referred to the action of the association in recommending that a patient whose insanity was doubtful should be placed under care and treatment away from home on the application of a relative to a magistrate, which action was supported by the British Medical Association. He then alluded to the abuse of the practice of "single care" by advertisers who had no knowledge of the treatment of the insane. He advocated as a remedy the registration of places and persons taking mental cases, especially including the so-called "nursing homes." The President also touched upon the question of voluntary boarders in public asylums and said that there was a field for extension in the direction of encouraging the early treatment of incipient insanity. The address dealt very fully with the question of nursing the mentally afflicted. There were now 6900 nurses, male and female, holding the association's certificate for proficiency, probably the largest number of any organisation in the nursing world holding certificates of uniform value from one constituted authority. Last year the period of training was definitely fixed at three years, which would give the association's nurses a status that they had never before enjoyed. He objected to referring to male nurses in asylums as "attendants," and much preferred the term "nurse" for both sexes. Some members had advocated the principle of substituting female nurses for male to look after male patients, but he thought the proportion of suitable cases for that could not be large. A temperate letter appeared in the *Asylum News* from a matron, stating that a kind heart, common sense, devotion to duty, and loyalty to proper authorities were not the sole prerogatives of women and that a man with those qualities could nurse insane men as well as, and with greater propriety than, any woman. The President called special attention to the importance, in the case of a nurse, of a good personal character and individual fitness for the work, and if the association would be prepared to take one more step towards bringing its nurses into line with the members of the Royal British Nurses' Association and the Midwives Board a registration board might be established which could make it compulsory for each nurse to qualify for the certificate. He was not sure that all the stir now being made about State registration would be of much material benefit to the nurses themselves, nor that the perking them up with a glistering pride might not end in their wearing a crown of sorrow. Whatever might be the outcome of the movement in regard to the State registration of nurses, he doubted if any scheme could improve upon the excellent system of the Royal British Nurses' Association under the presidency of Her Royal Highness the Princess Christian, to whom the association was largely indebted for the interest which she took in the status of asylum-trained nurses. In conclusion, the President declared that psychological medicine was now more intimately associated with general medicine than formerly, and he trusted that it would continue to be the object of the association to strengthen the bonds which united them and which he believed would ere long bring them into one harmonious whole.

Dr. George M. Robertson, medical superintendent of the Stirling District Asylum at Larbert, Stirlingshire, introduced for discussion the question of the Employment of Female Nurses for the Care of Insane Men. He argued that nursing was better done by women and that they were more tidy, bright, genial to patients, and looked better after the cleanliness of bedding and linen than did male nurses. Patients also were more amenable to tactful management by them, but he thought that cases of delirium tremens, acute mania, and dangerous suicidal tendency were best placed in the care of male nurses. As a system the female nursing of male patients, he argued, was to be encouraged. In Scotland it was tried and found to be successful and the Scottish

Commissioners in Lunacy spoke of it in high terms.—In the discussion which followed Dr. ROBERT JONES, medical superintendent of Claybury Asylum, referred to the economic aspect of the question. He thought that the matron should not be loaded with the responsibility of having the charge of male patients.—Mr. JOHN F. BRISCOE criticised Dr. Robertson's statements and conclusions as somewhat one-sided. Those types of insanity, he argued, which tended nowadays to be of the quiet type (demented or depressive), and easy to manage, might be nursed by women but the majority of men required male nursing.—Another speaker said that they could do with female nurses in easy cases but in certain specially difficult male cases (epileptics, maniacs) they could not do without male nurses.—Dr. DAVID THOMPSON, medical superintendent of the Norfolk County Asylum, preferred the male nursing of patients. He found male nurses quite as good as, and even better than, female nurses both in his own asylum and at asylums at the Hague and elsewhere on the continent. Nursing, like cooking and dressmaking, was not the exclusive province of the female sex, and when good male nurses were met with they surpassed the women as men also did in cooking and dressmaking. In cases of delirium tremens male nurses were a *sine quâ non.*—Dr. C. HUBERT BOND of the Ewell Colony for Epileptics found female nursing suitable in the case of his patients, whether male or female.—Dr. BEDFORD PIERCE said that they should not ignore the fatherly instinct of man which made him as good and tender a nurse as the motherly instinct of woman constituted her a nurse. He thought that Dr. Robertson's observations were fallacious and did injustice to the class of male nurses.—Dr. G. E. SHUTTLEWORTH said that if the plan of female nursing as advocated by Dr. Robertson were carried out to its logical limit it would produce a mere "bread-and-cheese class of nurses."—The PRESIDENT, in summing up the discussion, said that male nurses were in certain circumstances more proper than females in the nursing of male cases; female nursing had also its acknowledged merits, but if it was pushed too far it would diminish the goodness of a good work.

On July 21st, in view of the introduction of two Lunacy Bills before Parliament (now withdrawn) the treatment of insanity and the proper accommodation to be provided, especially for early mental disorders, was the first subject of discussion of the day. In introducing the subject the PRESIDENT referred to the two Bills in question—namely, (1) a Bill to Amend the Lunacy Acts, printed on April 17th, 1905, presented to the House of Commons by the Attorney-General and supported by the Solicitor-General; and (2) a Lunacy Acts Amendment Bill to authorise the London County Council to provide receiving houses for the reception of persons mentally afflicted or alleged to be of unsound mind and to authorise the detention of such persons in such houses and for other purposes connected therewith. This Bill was presented to the House by Sir John Batty Tuke, and supported by Mr. John Burns, Mr. Williams Benn, Mr Claude Hay, and others. The technical provisions of the Bills and the bearings thereof on lunacy practice were discussed by several members present.

As germane to this discussion Dr. HELEN BOYLE, late assistant medical officer at Claybury Asylum, read a paper upon Some Points in the Early Treatment of Mental and Nervous Cases, with special reference to the Poor.

Dr. J. MILSON RHODES (a member of the committee which reported recently upon asylums in the United States) read a paper upon the Provision of Suitable Accommodation for the Various Forms of Insanity. He said that he did not believe that insanity was increasing faster than the population. He thought that British asylums were very good as regards accommodation for patients and administration and that they were admirably staffed in comparison with asylums abroad. The French, he said, praised the British asylum system, the medical officers, the attendants, and the lunacy laws. The number of the Commissioners in Lunacy wanted increasing; the public asylums were as good as any in the world, but the parochial spirit should give way to broader views as regards the erection of new asylums. Custodial institutions for chronic cases of lunacy were bad in theory and in practice. Economy was given as the reason for their continuance but that was the only redeeming feat[illegible] and garden[illegible]ng patients" [illegible]ing [illegible] stimulated to work.

Dr. ALAN MCDOUGALL contributed a paper on the David Lewis Manchester Epileptic Colony which was opened in September, 1904, for the treatment of sane epileptics at Alderly Edge, Cheshire. The colonists were provided with industrial occupation and recreation while the mode of life and the diet adopted were those best adapted to ameliorate or to cure their malady. Interesting details were given of the system of buildings, the dormitories, and the workshops. A uniform charge of 14*s.* a week was made to adult colonists. Males and females were received. Special arrangements were made for the training and treatment of epileptic children.

The question of pulmonary tuberculosis in asylums was brought up for discussion in a paper by Dr. GEORGE W. GREENE, assistant medical officer of Claybury Asylum, read by Dr. ROBERT JONES in the absence of the author.—In the discussion following the paper several speakers took part.—Dr. ROBERT JONES gave an interesting account of the mortality from pulmonary tuberculosis as based upon the returns of deaths and post-mortem examinations at the various London county asylums.—Dr. F. G. CROOKSHANK said that the conclusion which he had published seven years ago, to the effect that the death-rate from pulmonary tuberculosis in the asylum population was ten times that from the same disease in the general population, was in no way discredited by Dr. Greene's arguments. He thought that Dr. Greene had confused the death-rate from pulmonary tuberculosis in the insane with the proportion of deaths due to that disease generally.—Further remarks were made by Dr. LIONEL A. WEATHERLY on the System of Warming and Ventilation in Sanatoriums; by Dr. W. LLOYD ANDRIEZEN on Segregation, Diagnosis of Incipient Phthisis, and "Tent Life" for the Tuberculous Insane (of which a graphic account was cited as practised in the United States by Dr. MacDonald of Manhattan Asylum); by Dr. T. DRAPES of Ireland, who condemned steam heating; by Dr. ROBERTSON, Dr. A. R. URQUHART of Perth (who gave credit to Dr. Toulouse of the Villejuif Asylum, France, for the open-air system of treatment which he had adopted as long as 12 years ago), by Mr. H. F. HAYES NEWINGTON, and by the PRESIDENT, after which Dr. JONES replied.—The proceedings then terminated.

THE CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH.

THE annual meeting of the Royal Institute of Public Health was held in London from July 19th to 25th at the Polytechnic, Regent-street, and at King's College, Strand, under the Presidency of the MARQUIS of LONDONDERRY.

SECTION OF PREVENTIVE MEDICINE.

Sir JAMES CRICHTON-BROWNE, the Lord Chancellor's Visitor in Lunacy, presided over this section which was held in the Polytechnic, Regent-street. Sir James Crichton-Browne took for the subject of his address

The Prevention of Senility.

The value of preventive medicine, he pointed out, was shown by the diminution of the death-rate as a whole. There were three great epochs of life—namely, growth, equilibrium, and decline—but that division was by no means precise, for the boundaries of the epochs were ill-defined. It was literally true that "we die daily and are daily born again." The processes of decay followed on the beginnings of growth and formative energies were still at work when only decay seemed to be in possession. It was a good working hypothesis to say that the natural life of man was 100 years. Every man was entitled to his century and every woman to a century and a little more. Children should be brought up impressed with the obligation of living to 100 and they should be taught how to avoid the irregularities that tended to frustrate that laudable ambition. To lengthen as well as to strengthen the lives of the people was the object of preventive medicine. Regular employment must be secured and poverty diminished, so that they might no longer have amongst them 13 millions on the verge of hunger and dying in multitudes before their time. These things were beyond the scope of preventive medicine but within its sphere; although much had been done much remained to be done. If old age were to be attained a good start in life must be given, hence the importance of questions such as infant feeding and milk-supply; the degeneration of the people must be arrested by giving them decent houses and promoting their physical development by affording them facilities for exercise.

Diet and Disease.

Dr. J. HADDON read a paper on this subject, remarking that he lived on one meal a day and ate no animal product except butter.

The PRESIDENT of the section said the reader of the paper was enthusiastic but pointed out that enthusiasm often degenerated into faddism. It ought to be remembered that concurrently with the decrease in the death-rate there had been an increase in the consumption of meat. Nature was against one meal per day.

Dr. S. G. MOORE (Huddersfield) read a paper on

Infantile Mortality.

He said that in the worst parts of some of the great cities only three out of four children born lived for 12 months. With regard to supplying milk for infants he advocated the formation of children's dispensaries, such as existed in France. Misleading statements relating to food should be stopped. Some of the foods advertised for infants caused many deaths. He knew of one article freely advertised as a special food for infants which upon analysis proved to be nothing but baked flour, not only insufficiently nutritive but even injurious to children.

Dr. T. N. KELYNACK opened a discussion on

Sanatoriums for Consumptives.

He said that one-third of all the deaths from consumption in London took place in Poor-law institutions. There were now some 70 sanatoriums in the United Kingdom, with accommodation for about 2760 patients, but the beds available for the working classes and destitute were very few, and even in the best of our paying institutions for the poor beds had to be kept vacant owing to lack of funds. In regard to the poor public effort was merely touching the fringe of the difficulty. It was well to remember that we were still in the experimental stage of our research. He advocated a direct controlling body which could deal with all cases of pulmonary tuberculosis throughout the country. The time was ripe for a Government inquiry into the methods of treatment of the consumptive poor.

SECTION OF MUNICIPAL ADMINISTRATION OF THE EDUCATION ACTS.

This section also met at the Polytechnic, where the President, Mr. J. H. YOXALL, M.P., gave an address on

Secondary Education.

What was wanted, he said, for the bulk of children who were transferred from elementary schools to places of secondary education was a continuative education which would fit them for the higher posts of service in the world of industry and commerce and not the kind of education which would lead up to the learned professions.

Ventilation of Public Buildings.

Mr. J. H. BLIZZARD, after remarking that properly ventilated and sanitary school buildings were the foundation upon which the medical profession should start to prevent the spread of infectious disease, referred to churches which he said were the best places for the spread of pulmonary tuberculosis and the dissemination of the germs of infectious diseases.

Medical Inspection of Schools.

Sir GEORGE KEKEWICH advocated the appointment by the Board of Education of a medical officer whose duty should be to see that local authorities appointed a medical officer to inspect every school in the country and to report on its sanitary condition and the health of the children. He was also of opinion that there should be a thorough inquiry into the sanitary condition of all schools and that those found to be seriously defective should be eliminated.

SECTION OF CHILD STUDY AND SCHOOL HYGIENE.

Training of Teachers.

Lord STANLEY of ALDERLEY presided over this section which was held at the Polytechnic and in his address dwelt upon the necessity of teachers possessing some preliminary training in biology and physiology.

ENGINEERING AND BUILDING CONSTRUCTION.

Sir ALEXANDER BINNIE presided over this section which was opened in the Polytechnic and delivered a most interesting address on

The Drainage of London

which was both historical and practical as regards modern conditions.

A paper was read on the Destruction of Town Refuse by Councillor ATKINSON (Hull), and at King's College, Strand, Mr. C. G. MOORE discussed

Problems in Practical Disinfection.

He dwelt on the ineffective character of many of the routine methods of disinfection and called attention to the variable and often valueless character of the so-called disinfectant fluids of commerce. Although the disinfection of clothes and other fabrics was practised by some sanitary authorities it was neglected very largely in districts which had failed to understand the importance of providing that means against the spread of infection.

Dr. DAVID WALSH read a paper on

How to Sterilise London Drinking Water.

Referring to the contamination of the Thames by sewage, he said that hitherto it had not been possible to sterilise sewage on a very large scale but now it could be done by the Salvator apparatus which had been tested and found to render water absolutely sterile. By its aid water could be rapidly sterilised and delivered cool, sparkling, and palatable. The same machine could be used to sterilise all sewage effluents discharged into the upper Thames.

Smoke Abatement.

A paper on this subject was read by the Hon. ROLLO RUSSELL. He expressed the opinion that kitchen and ordinary domestic fires were the main cause of London fogs. The remedies he suggested were improved methods of heating but the best of all remedies, he said, would be the removal of the people of London to the country.

The Air Supply of London.

Dr. T. GLOVER LYON read a paper dealing with the question of supplying fresh air to London and said that "tube" railways could be arranged to supply pure air to the central part of the city and to remove vitiated air from it. There ought to be a department of public Health presided over by a Minister sitting in the Cabinet.

Looking Back.

FROM

THE LANCET, *SATURDAY*, July 28, 1827.

ASSISTANT SURGEONS IN THE NAVY.[1]

To the Editor of THE LANCET.

SIR,—I am surprised that you should have inserted in a former number of THE LANCET, the fastidious and unfounded complaints of "An Assistant Surgeon in the Navy." He talks about being degraded to mess in the midshipman's berth, "with unruly boys." What! is it a degradation for a medical school-boy (for such, in point of practical experience is a young assistant surgeon,) is it a degradation, I ask, to mess with a young Rodney, a Howe, a Duncan, a Nelson! Doubtless, if this assistant had been *so* degraded, he would have gloried in his shame, and stood "a tip toe" when their names were mentioned. "Surely," says this Assistant Surgeon, "his education, and respectability as a medical man, entitle him to rank with any lieutenant, master, purser, or marine officer in the Navy." Now, Sir, neither respectability nor education entitle any officer to rank; and no such degree of them, as thirteen years' experience have enabled me to observe in assistant-surgeons in the navy, will render them superior in general information to the junior officers, whose society this gentleman deems so unruly. I do not hesitate to say, that in any midshipman's berth he ever entered, there was as much respectability, and as much education, before his entrance as after it. Non omnia possumus omnes; even the medical gentleman himself is not *ground* in all knowledge. Is there no education but what is anatomical? Is there no respectability but what is medicinal? Are the sciences exclusively medical? Is plane trigonometry concentrated in the carving of lozenges, or spherical in the rolling of pills? Surely, Sir, there is no less absurdity in comparing the "airy apartments of a house on shore, to the necessary confinement of a ship; and in complaining of his want of accommodation, there is no less injustice in the statement of the Assistant Surgeon. When the junior officer—the unruly boy—the offensive messmate of this respectable and educated assistant, is "biding the pelting of the pitiless storm," he, "good easy man," is snugly housed between decks, reading books, learning, or most probably picking bones. When the "degraded" midshipman is on the high and giddy mast, watching the out-hauling of a weather earing, the scientific "idler," as he is not inaptly called at sea, is either elaborating an extract, or rotating a pill; and instead of being recommended by the wet or cold, his manipulations are aided *laterally* by the rolling of the ship, and *anteriorly* by her pitching; in short, Sir, he is at perfect liberty to take every advantage of the wind and weather.

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[1] See letter from "An Assistant Surgeon in the Navy" reproduced under the heading of "Looking Back" in THE LANCET of June 24th, 1905, p. 1750.

In battle too, when the "unruly boys" are lifting their voices amidst the roar of cannon, and surrounded by "the pride, pomp, and circumstance of glorious war," the respectable medical assistant is doing his duty, deeply sunk in a bomb proof element.

The education of this respectable assistant has taught him, it seems, that it is very warm in hot climates, so much so, indeed, as to render it agreeable to dine with the coat off. Forsooth this hot weather and close apartments, are insufferable to our gallant assistant; it is by no means salubrious "Look," says he, "at the army medical man dining in a comfortable airy apartment, and enjoying all the luxuries of the *shore*." It is certainly natural for the human members to take care of the human belly, and especially for medical members to consider a medical belly; but there is somewhat too much of this, even in a respectable assistant surgeon, who has been so many years in the naval service. He appears to me, what his messmates, the unruly boys, would certainly call him, a shore-going doctor. "Look again," says he, "at the army medical man, who has his quarters allotted to him with every convenience that can be procured on *shore*." I suppose such an assistant would have the ship herself on *shore*.

The Assistant Surgeon invidiously notices, "That the gunner, boatswain, and carpenter, are each entitled to a cabin." Now, Sir, had his superior education only lifted his mind from the mortar, to contemplate the reason of the circumstances which stood around him, and had his respectability permitted him, he might have perceived that these warrant officers are each of them at the *head* of their respective professions, and can attain no higher station, and should therefore justly be allowed as many privileges as may render their situation a desirable one, to excite the emulation of such as may seek it. He would not thus have complained, that such privileges were withheld from an assistant surgeon, to whom are open the superior ranks of surgeon and physician, with their respective profits and accommodations. The Assistant Surgeon complains that he is obliged to sleep in a hammock "like one of the lowest rank;" why, Sir, all his messmates sleep in hammocks, the lieutenants, the captain, and even the admiral himself sleep in "cots," a species of hammock, and sometimes prefer the hammock itself! What, in the name of Æsculapius, would the assistant sleep in? "Airy apartments, quarters allotted to him, dressing tables, &c." Why, Sir, even the Lord High Admiral himself dispenses with these things. With respect to his comparison between the pay of the medical men in the army and navy, it least of all becomes one of his class to make the complaint. It is true that the navy generally is paid far inferior to the army. But both in pay and convenience the naval assistant surgeon is better accommodated than any of his rate on board, and the full surgeon than his rate; the assistant surgeon's pay is far greater than a midshipman's who has served ten or twelve years; he has no watch to keep, and is never exposed to the inclemency of the weather. By inserting this letter, you will do but justice to the government of the navy, as it respects assistant surgeons.

I am, Sir,
Your obedient humble servant,
G. H. H.

Dublin, June 29, 1827.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8900 births and 4002 deaths were registered during the week ending July 22nd. The annual rate of mortality in these towns, which had been 12·7, 11·6, and 12·9 per 1000 in the three preceding weeks, further rose to 13·4 per 1000 last week. In London the death-rate was 12·7 per 1000, while it averaged 13·7 in the 75 other large towns. The lowest death-rates in these towns were 3·1 in Hornsey, 5·5 in Bournemouth, 5·8 in Smethwick, 6·0 in Burton-on-Trent, 6·2 in Hastings, 7·6 in Handsworth (Staffs.), 7·7 in Derby, and 7·8 in Gateshead; while the highest rates were 18·4 in Sunderland and in Merthyr Tydfil, 18·9 in Great Yarmouth, 19·1 in Stockport, 19·9 in Barrow-in-Furness, 20·5 in Oldham, 22·1 in Liverpool, and 24·1 in Bootle. The 4002 deaths in these towns last week included 612 which were referred to the principal infectious diseases, against 371, 388, and 486 in the three preceding weeks; of these 612 deaths 431 resulted from diarrhœa, 64 from measles, 45 from whooping-cough, 32 from diphtheria, 24 from scarlet fever, and 16 from "fever" (principally enteric), but not any from small-pox. No death from any of these diseases was registered last week in Hornsey, Bournemouth, Great Yarmouth, Burton-on-Trent, King's Norton, Derby, Tynemouth, and Newport (Mon.), while they caused the highest death-rates in Aston Manor, Stockport, Birkenhead, Liverpool, Bootle, Leeds, Sheffield, and Sunderland. The greatest proportional mortality from measles occurred in Birkenhead, Barrow-in-Furness, and Sunderland; from whooping-cough in Aston Manor; and from diarrhœa in Hanley, Aston Manor, Stockport, Birkenhead, Liverpool, Bootle, Wigan, Leeds, Sheffield, and Merthyr Tydfil. The mortality from scarlet fever, from diphtheria, and from "fever" showed no marked excess in any of the large towns, and no death from small-pox was registered during the week. The Metropolitan Asylums Hospitals contained three small-pox cases at the end of last week, against four, five, and four at the end of the three preceding weeks; no new cases were admitted during the week, against one, two, and two in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2473, 2499, and 2520 on the three preceding Saturdays, had declined again to 2485 on Saturday last, July 22nd; 304 new cases were admitted during the week, against 334, 354, and 356 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 140, 90, and 104 in the three preceding weeks, further rose to 117 last week, but were three below the number in the corresponding period of last year. The causes of 47, or 1·2 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Bristol, Salford, Leeds, and in 46 other smaller towns; the highest proportions of uncertified deaths were registered in Liverpool, Warrington, Sunderland, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 16·5, 14·7, and 14·3 per 1000 in the three preceding weeks, further rose to 15·2 per 1000 during the week ending July 22nd, but was 1·8 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 9·0 in Leith and 13·0 in Dundee, to 16 5 in Paisley and 19·8 in Perth. The 510 deaths in these towns included 22 which were referred to diarrhœa, 21 to measles, 12 to whooping-cough, three to diphtheria, two to "fever," and one to scarlet fever. In all 61 deaths resulted from these principal infectious diseases last week, against 65, 57, and 55 in the three preceding weeks. These 61 deaths were equal to an annual rate of 1·8 per 1000, which was 0·2 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 14, 13, and seven in the three preceding weeks, rose again last week to 22, of which 16 occurred in Glasgow, two in Edinburgh, and two in Dundee. The deaths from measles, which had been 17, 14, and 19 in the three preceding weeks, further rose to 21 last week, and included 14 in Glasgow, four in Edinburgh, and two in Perth. The fatal cases of whooping-cough, which had been 31, 26, and 25 in the three preceding weeks, further declined last week to 12, of which seven were registered in Glasgow and two in Paisley. The deaths from diphtheria, which had been one, three, and one in the three preceding weeks, rose again to three last week and included two in Edinburgh. Of the two deaths from "fever," one from typhus occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 68, 65, and 65 in the three preceding weeks, further declined last week to 62, and were 13 below the number in the corresponding period of last year. The causes of 13, or nearly 3 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 14·9, 16·9, and 19·7 per 1000 in the three preceding weeks, further increased to 20·1 per 1000 during the week ending July 22nd. During the past four weeks the death-rate has averaged 16 9 per 1000, the rates during the same period being 11·9 in London and 15·3 in Edinburgh. The 146 deaths of persons belonging to Dublin registered during the week under notice were three in excess of the number in the eceding week and included 20 which were referred to the incipal infectious diseases, against seven, eight, and 17 the three preceding weeks; of these, 18 resulted om diarrhœa, one from whooping-cough, and one from fever," but none from small-pox, measles, scarlet ver, or diphtheria. These 20 deaths were equal to annual rate of 2 8 per 1000, the death-rates last eek from the principal infectious diseases being 1 5 in ondon and 1·4 in Edinburgh. The fatal cases of diarrhœa, hich had been two, six, and 14 in the three preceding eeks, further rose last week to 18. The 146 deaths in ublin last week included 45 among children under one year age and 30 among persons aged 60 years and upwards; e deaths of infants corresponded exactly with the number the preceding week, while those of elderly persons owed a slight increase. Eight inquest cases and nine aths from violence were registered; and 45, or nearly e-third, of the deaths occurred in public institutions. he causes of 11, or nearly 8 per cent., of the deaths gistered in Dublin last week were not certified.

THE SERVICES.

Royal Navy Medical Service.

In accordance with the provisions of Her late Majesty's rder in Council of April 1st, 1881, Fleet Surgeon William ogerson White, C B., has been placed on the Retired List, ith permission to assume the rank of Deputy Inspector-eneral of Hospitals and Fleets (dated July 17th, 1905).

Royal Army Medical Corps.

Major C. G. Spencer, from the Curragh, is attached to the oyal Army Medical College. Lieutenant-Colonel F. P. ichols is posted to the Eastern Command to take charge f the Station Hospital and troops at Norwich, vice Major . M. O'Callaghan, who goes to Colchester for duty.

Colonel W. E. Webb retires on retired pay (dated July 22nd, 905). Lieutenant J. Waddell, from half-pay, to be Lieuenant (dated June 23rd, 1905). Lieutenant J. Waddell to e Captain (dated June 23rd, 1905).

Channel Islands Militia.

3rd or South Battalion, Royal Jersey Light Infantry: urgeon-Major A. B. Voisin resigns his commission (dated une 17th, 1905).

Imperial Yeomanry.

The City of London (Rough Riders): Surgeon-Lieutenant . F. M. Clarke resigns his commission (dated July 3rd, 905); Robert Martin McQueen to be Surgeon-Lieutenant dated July 3rd, 1905). Nottinghamshire (South Nottinghamhire Hussars): The announcement of the appointment to a urgeon-Lieutenancy of William Trethowan Rowe, which ppeared in the *London Gazette* of June 6th, 1905, bears date May 22nd, 1905.

Volunteer Corps.

Royal Garrison Artillery (Volunteers): 1st Fifeshire: Supernumerary Surgeon-Captain (Honorary Captain in the Army) J. C. G. Macnab is absorbed into the Establishment (dated July 22nd, 1905). 1st Shropshire and Staffordshire: Surgeon-Major J. P. Massingham is granted the honorary rank of Surgeon-Lieutenant-Colonel (dated July 22nd, 1905). The Highland: Edward Elmslie Brown to be Surgeon-Lieutenant (dated July 2nd, 1905).

Rifle: 4th Volunteer Battalion the Royal Fusiliers (City of London Regiment): Surgeon-Captain H. Dutch to be Surgeon-Major (dated July 22nd, 1905). 2nd Volunteer Battalion the Cameronians (Scottish Rifles): Surgeon-Major R. T. C. Robertson to be Surgeon-Lieutenant Colonel (dated July 22nd, 1905). 1st Volunteer Battalion the Prince of Wales's (North Staffordshire Regiment): Lawrence Campbell Vigor Hardwicke to be Surgeon-Lieutenant (dated July 22nd, 1905).

Royal Army Medical Corps (Volunteers).

Harwich Bearer Company: Major (Surgeon-Major, Army Medical Reserve of Officers) S. S. Hoyland is granted the honorary rank of Lieutenant-Colonel (dated July 22nd, 1905).

Royal Army Medical College.

The *Army and Navy Gazette* of July 22nd contains the following announcement: "Some changes in the *personnel* of the Royal Army Medical College may shortly be expected. We understand that the professor of clinical and military medicine, Colonel K. MacLeod, I.M.S., retired, will vacate the appointment and be succeeded by Colonel David Bruce, C.B., F.R.S., R.A.M.C. Then the professor of military surgery, Surgeon-General W. F. Stevenson, C.B., R.A.M.C., retires at the end of this month and will, in all probability, be succeeded by Major C. G. Spencer, R.A.M.C., whose claims and qualifications stand very high, he being an M.B. Lond. and F.R.C.S. Eng. Further, in January next Lieutenant-Colonel R. H. Firth, R.A.M.C., Professor of Military Hygiene, will vacate his appointment. The selection of his successor lies between Lieutenant-Colonel A. M. Davies, R.A.M C., now expert in sanitation, and member of the Army Medical Service Advisory Board, and Major W. H. Horrocks, R.A.M.C. Both possess high qualifications. It is reported that close on 80 officers of the Royal Army Medical Corps will be required for India and the colonies during the next relief season. Last season about a similar number were also on the foreign roster."

The Volunteers and the late War Office Circular.

It will be remembered that Mr. Arnold-Forster in his recent circular proposed that the men composing the Volunteer forces should be subjected to a medical inspection and examination in order to ascertain the number of those who were fit for service abroad. We now learn from the *Standard* of July 25th that the members of three companies of the 1st Dorset Artillery Volunteers, assembled for gun practice at Portland, "declined to submit to any such examination, the ground taken being that their contract was to make themselves efficient to serve anywhere in the United Kingdom. They were, they declared, efficient and prepared to fulfil their contract, but they held that they were within their right in refusing to submit to a medical examination for foreign service."

The New Naval Hospital at Chatham.

On July 26th the King formally opened the new Royal Naval Hospital at Chatham. The buildings will contain 600 beds with accommodation for 90 members of the staff.

The Health of the Japanese Imperial Navy.

Baron Saneyoshi, Chief of the Bureau of Medical Affairs, in his report on the health of the Japanese Navy for the year 1902, which has just been issued, says: The mean daily force in the service for the year under notice was 30,445 persons, an increase of 3976 in comparison with 26,469 persons of the preceding year. The number of cases of disease and injury reported amounted to, as a result of the expansion of the navy, 25,670, which shows an increase of 716 cases as compared with 24,954 of the preceding year and the number of days' sickness, which is 620,686 days, shows an increase of 35,821 when compared with 584,865 days of the last year. But the ratios of cases of men sick daily per 1000 of force are 843·16 and 55·86 respectively, and the former shows a decrease of 99·60 per 1000 as compared with 942·76 of the previous year, while the latter gives a decrease of 4·68 in comparison with 60·54 of the same year. Such satisfactory results may be regarded as showing a gradual improvement of the health of the navy.

The total number of cases entered under diseases of the urinary and generative systems was 435, which exhibits a ratio of 14·29 per 1000 of force, being a decrease of 2·94 per 1000 as compared with the previous year. There were two cases of deaths, the ratio being 0·07 per 1000 of force, but no case of death occurred in the previous year. Invalidings numbered three, which show a ratio of 0·10 per 1000 of force, being a decrease of 0·05 per 1000 when contrasted with the previous year. The total number of cases comprised under the heading of venereal diseases amounted to 5452, the ratio being 179·08 per 1000 of force, which shows a decrease of 44·80 per 1000 as compared with the last year. Only one case of death occurred but no case appeared in the last year. There were four cases of invalidings, which is in a ratio of 0·13 per 1000 of force, showing a decrease of 0·36 per 1000 as compared with the year before. The venereal diseases are most numerous of all the cases every year and though they show some decrease in this year they still give a ratio of 21·24 per cent. of the total number of all the cases recorded. Arranged according to the number of cases the principal diseases under this heading are as follows: gonorrhœa and its sequelæ, 1985; soft chancre, 1383; bubo, 1027; secondary and tertiary syphilis, 790; and hard chancre, 267.

Correspondence.

"Audi alteram partem."

GRIFFITHS TESTIMONIAL FUND.

To the Editors of THE LANCET.

SIRS,—Allow me on behalf of the wife and family of my brother, the late Dr. A. D. Griffiths of Bridgend, to express our grateful thanks for the practical sympathy shown by the organisers of, and subscribers to, the above fund. I know it was a very great source of comfort to my brother to find so many of our professional brethren coming forward to support him in this time of trial and that the amount realised helped considerably to lighten his load. You also, Sirs, who did so much to forward the fund, I beg to include in our thanks.

I am, Sirs, yours faithfully,
JOHN S. GRIFFITHS.
Bristol, July 26th, 1905.

THE USE OF PHENYLHYDRAZIN IN THE EXAMINATION OF URINE.

To the Editors of THE LANCET.

SIRS,—Apparently Mr. L. C. S. Broughton has not done me the honour of reading my paper carefully, as on p. 17, line 3, I gave the usually accepted melting points of the phenylhydrazin compounds of glycuronic acid which he states in his letter of July 22nd are omitted. My object in the communication I made was not to advocate or to disparage any particular method of performing the phenylhydrazin test but to summarise the advantages and disadvantages of each. Most modern writers on the subject have shown a preference for some modification of the rapid boiling method for clinical work and it is interesting to hear that Mr. Broughton is not in agreement with them.

I am afraid I have not made myself quite clear on another point and that is the part which the physical conditions under which a chemical experiment is performed take in determining its result. The two sentences regarding the rates of osazone formation which Mr. Broughton quotes from my paper and states are contradictory are not so in point of fact, for they refer to two entirely different methods of experimenting and cannot be compared. Similarly it is not justifiable to argue from the rates of osazone formation in simple watery solution to what may be expected under the different physical conditions existing in urine.

I am, Sirs, yours faithfully,
P. J. CAMMIDGE.
July 24th, 1905.

GROCCO'S TRIANGLE IN PLEURAL EFFUSION.

To the Editors of THE LANCET.

SIRS,—As the case mentioned in the concluding paragraph of my paper in THE LANCET of July 22nd might appear to invalidate the statement occurring at the bottom of page 216, which should read as follows after the correction of a slight clerical error:—

> "...... Therefore when a skilled percussor has determined by two or three strokes, and with great accuracy if he should be familiar with the pleximeter, the height of the triangle and the slope of its third side, which is then to be continued from apex to base with a touch of the pencil, *he has not only demonstrated that fluid has gathered in the chest, but also determined its upper level.*[1] ......," &c.—

I would by your courtesy lay stress upon the fact that the triangle in the case in question was, as compared with the ordinary triangle observed in pleural effusions, quite unusually broad, and strictly speaking a *modified* Grocco's triangle, rather than one conforming to Grocco's description.

As cases of this sort, with abdominal dulness rising a slight distance only into the thorax, are of constant occurrence and often difficult to diagnose I may point out that the feature of a Grocco's triangle due to a small intrapleural collection is the smallness of its dimensions and particularly of its base. The coincidence, as in this case, of a dulness confined to the bottom of the chest with a triangle which was very broad and very dull in spite of its shortness might, perhaps, in the future be found to indicate that the cause of the dulness was situated in the abdomen rather than in the thorax.

I am, Sirs, yours faithfully,
WILLIAM EWART.
July 22nd, 1905.

A NEW ELECTRO-CYSTOSCOPE.

To the Editors of THE LANCET.

SIRS,—Referring to an article published in THE LANCET of June 10th, p. 1569, under the heading of "A New Electro-Cystoscope," by William K. Otis, M.D., we wish to make the following remarks. The construction of Dr. Otis's instrument is not new but is generally known. The hemispherical lens is covered by our patents No. 222,384 of March 8th, 1904, and No. 198,437 of April 7th, 1903. We provide cystoscopes with this lens if ordered specially but we make no general use of it as it has not proved so satisfactory as that in the old and well-tried Nitze's system. The other advantages, as claimed for the new instrument by Dr. Otis, are the separate telescope as used in our evacuation cystoscope since 1893 and cold lamps which we have supplied since 1899.

As to the visual field of the Otis cystoscope, we wish to remark that our cystoscopes have, at a distance of four centimetres, a field of 62 millimetres and not of 43 millimetres, as stated by Dr. Otis. It seems to us that Dr. Otis used during his investigations a very old and defective instrument and compared it with his new one. We claim for our cystoscopes that they will give perfectly sharp and clear images. Our instruments would allow, without any difficulty, an enlargement of the field, but in this there would be no advantage, for it is known to every expert that the sharpness of the image suffers by enlargement of the field; in fact, the margins of an extremely enlarged field appear distorted. Square reticulations viewed by the Otis cystoscope will show this distortion clearly, and this makes comparison between objects at the margin and objects in the centre of the field impossible. Ignorance of this fact would mislead observers as to the real appearance of the bladder-wall.

In conclusion we wish to remark that we claim the exclusive right of manufacturing the instrument described. We beg to ask you to insert this letter in the next number of THE LANCET.

We are, Sirs, yours faithfully,
LOUIS & H. LOEWENSTEIN.
28, Ziegelstrasse, Berlin, July 10th, 1905.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Lunacy in Birmingham.

FROM the report of the lunatic asylums committee it appears that whereas on April 1st, 1904, there were 1657 patients in the city asylums, on March 31st, 1905, there were 1701. The annual report by Professor E. B. Whitcombe which is appended contains interesting tables showing the rate of increase of insanity in England generally and in Birmingham particularly—a slow, steady, continuous rise.

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[1] The italics do not occur in the text.

Other tables show the proportion of cases since 1870 due to drink and heredity. The cases attributed to alcoholism have varied from 7·7 to 27·6 per cent. and those attributed to heredity from 5·3 to 32·8 per cent. He regards sterilisation as the only effective means of coping with the steady increase of the disease.

Birmingham and Cottage Baths.

At the last meeting of the baths subcommittee of the baths and parks committee of the city council it was decided to recommend to the general committee the provision of cottage baths. The scheme is to rent buildings in the most congested districts in which the poor live—probably the experiment will be tried in the Floodgate-street area—and to convert the rooms into cubicles and to provide each cubicle with an ordinary washing and shower bath. The baths are intended primarily for those who cannot be induced to make use of the facilities at the existing public bathing establishments. A nominal uniform charge will be made and, acting upon the suggestion of the chairman of the health committee, it is proposed that the officials of the health department and the lady health visitors should be given a limited number of free admission tickets for those whose circumstances render any payment whatever difficult. Should the experiment prove successful similar baths will be opened in other districts.

The Pollution of the Trent.

Within the last few days an open letter has been addressed to the Earl of Dartmouth, Lord Lieutenant of Staffordshire, by the Duke of Sutherland in which he complains of the pollution of the Trent which has taken place to such a degree that he has been advised that it is unsafe for him and his family to continue to live at Trentham Hall. He also threatens legal action against the Pottery towns, particularly against Stoke, which, in a further letter through his solicitors, he states is making no effort whatever to grapple with the problem, whereas nearly all the other boroughs contributing to the pollution are making efforts to mitigate the nuisance. At Longton £80,000 are being spent on new sewage works, at Burslem £40,000, at Tunstall £10,000, at Wolstanton £7000, and at Fenton £33,500. The corporation of Stoke has spent nearly £50,000 and it contends that the effluent which flows into the Trent really dilutes the foulness of the river rather than pollutes it. It declares that the Trent enters the town in a foul state and the Fowlea Brook in a still more filthy condition. A special meeting of the town council has been called to consider the Duke of Sutherland's letter, but what passed has not yet been published.

July 25th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Graduation Ceremony at the University of Liverpool.

AT a special graduation ceremony held in the senate room of the University on July 22nd the degree of Bachelor of Medicine and Surgery was conferred on the following gentlemen: Charles Harold Smith (first-class honours), Bertram Thomas, Johnson Glover, Richard H. Mole, Courtnay Yorke, and Warrington Yorke (second-class honours). The ordinary degree of Bachelor of Medicine and Surgery was conferred on Robert Cook, John F. Edmiston, Thomas E. Jones, Thomas W. Parry, and Francis H. Storey. The candidates were presented for graduation by Professor B. Moore, the dean of the Medical Faculty, and admitted to degrees by Vice-Chancellor Dale who delivered an address to the newly admitted graduates. The following graduates have been awarded the Diploma in Public Health: A. Critien, M.D., and J. B. Yeoman, M.D., F.R.C.S Edin.

Are Inebriate Homes a Failure?

At a meeting of the Cheshire standing joint committee, held on July 15th, the chief constable presented a report as to the conduct of habitual drunkards who had been liberated from inebriate homes. He stated that since the Act came into operation on Jan. 1st, 1899, 13 persons had been sent to inebriate homes. Of these six had been liberated and they were all women whose ages varied from 34 to 50 years; five of these six were sent to the Bristol home; the other one was sent to a home in Middlesex. Four were sent for a term of three years and two for one year. Detailing the results of the treatment in these homes the chief constable said that one person was as bad as ever and from the day she was liberated she went from bad to worse and died on May 5th, 1904. The second one was now in prison. One person from Altrincham had been seen once under the influence of drink; otherwise she conducted herself well. The detention of a Northwich woman had not reformed her and she craved for intoxicants, as prior to her admission to the home. Dr. Hodgson said that the powers given to the magistrates were inadequate to enable them to reach the curable cases. The incurable cases were practically the only ones that they could reach at present. Practically, it cost £500 to cure one patient and the opinion was expressed that they were wise in Cheshire in not following the example in other counties of building expensive homes for the treatment of inebriates. It seemed to be an absolute waste of money, inasmuch as individuals must be hopeless drunkards before they could be sent to an inebriates' home.

The Select Vestry and the Local Government Board.

At the meeting of the select vestry on July 18th Mr. T. D. Laurence asked whether any reply had been received from the Local Government Board with reference to the agreement between the select vestry and the West Derby guardians as to better accommodation for the epileptic and imbecile poor from the districts of the two boards. The vestry clerk (Mr. H. J. Hagger) said that no reply had been received. He wrote originally on March 22nd and forwarded a copy of the draft agreement to the Local Government Board. Not hearing anything he wrote again on May 7th, mentioning the previous letter and soliciting a reply, but only a bare acknowledgement had been received. Mr. Laurence and Mr. Crosfield expressed the opinion that it was high time the select vestry had a reply.

Lunacy in Lancashire: Increased Accommodation Required.

At Whalley, on July 20th, a Local Government Board inquiry was opened respecting the proposal to erect a new county asylum for Lancashire to accommodate 2000 inmates. A site of 230 acres has been provisionally acquired but the objection urged by local residents, that the site was unsuitable, stopped the scheme in its later stages and led to this inquiry. Mr. Harcourt Clare, the clerk to the Lancashire county council, supporting the application on behalf of the Lancashire asylums board, said that though there were five large asylums with accommodation for nearly 11,000 inmates, there were only about 213 beds at liberty. There were in Lancashire workhouses over 3000 insane paupers, the great majority of whom ought to be in properly managed asylums. There was no asylum in East Lancashire and the board had long felt it desirable to establish one.

Health of Liverpool.

It was reported at the meeting of the health committee on July 20th that during the past week the death-rate of the city was 16·8 per 1000, as against 19·9 per 1000 last year. There were in the city hospitals 485 cases of scarlet fever, eight of typhus fever, 22 of typhoid fever, 34 of measles, and 54 of diphtheria.

Bequests to Liverpool Charities.

By the will of the late Sir John Willox of Liverpool bequests were made to the Liverpool Royal Infirmary, the Royal Southern Hospital, and the Liverpool Stanley Hospital of £10,000 each. £10,000 were also bequeathed to the Liverpool Sanatorium for Consumption at Delamere Forest, to be known as the "Lady Willox Endowment Fund."

July 25th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

The West Riding Medical Charitable Society.

THE members of the West Riding Medical Charitable Society, which held its seventy-seventh annual meeting in Leeds on July 22nd, have great reason to be proud of the work which has been accomplished since the society's commencement. The society was started in the year 1828 by 47 medical men of the West Riding who subscribed one guinea each, the sum fixed on as the amount of the annual subscription. Donations from the more affluent members of the profession and from members of the general public were unobtrusively solicited. The motto of the society in its early years seems to have been the wise one of *festina lente*, for a resolution was come to that until the society had accumulated, funds to the amount of £2000 there should be no expenditure by the making of grants. This was achieved in 1837 and in that year the first two grants were made of £15 each, one to the widow of a medical man and the other to a disabled practitioner. From this time the society has carried on its charitable work uninterruptedly from year to year, doing an amount of good which it would be hard to estimate. Its objects are: (1) to aid the widows and children of members dying in indigent circumstances; (2) to aid the sisters of such members, being single women or widows, who have lived with their brothers as housekeepers for a period of not less than five years preceding their death; (3) to aid such members as are wholly or partially disabled by age or permanent bodily infirmities or who are disabled by severe illness from practising for a period of six months; and (4) to aid in the education of the children of members thus incapacitated or temporarily disabled. All applications for relief are most carefully considered and decided on at the annual meeting. This year there were 40 applicants. All these were met by grants varying from £20 to £60 and the society has had the gratification of distributing £1420 in this way, which is the largest amount it has as yet been able to vote. 25 of these grants were made to the widows of medical men, 11 to the children of deceased members, and four to disabled practitioners. When this sum is added to the grants which have been made since the year 1837, the first year the society felt in a position to vote any money, it is found that no less than £40,043 have been given away. The income of the society is derived from the annual subscription of some 730 members, including about a dozen who are not members of the profession, and from its invested funds which are of the nominal value of £30,674 and which yield some £1030 per annum. To the invested funds the general public have contributed about £4300. The prosperous condition of the society depends clearly on the care and economy of its management from its earliest existence. The expenses of management are remarkably low and consist year after year of a small bill for printing and postage amounting to about £20 and a sum of 10*s.* 6*d.* for a copy of the medical directory. There are no incidental expenses. All credit to the late Mr. Garlick who was the first secretary, to the late Dr. Chadwick who succeeded him, to Mr. C. G. Wheelhouse who was appointed joint secretary with Dr. Chadwick in the year 1874, and to Mr. G. H. Rowe who has been associated as co-secretary with Mr. Wheelhouse since the year 1887. The annual meetings give occasion for a pleasant reunion of medical men gathered together for the congenial purposes of distributing grants and dining with each other.

Appointment of Clinical Lecturers in the University.

In order to strengthen the bonds of union which have always been so cordial and intimate between the medical school and the infirmary and in order to give University recognition to members of the staff of the infirmary who may not be on the teaching body in other capacities, it has been decided by the council of the University to institute clinical lectureships on medicine, surgery, gynæcology, ophthalmology, and otology, and that the holders of these posts should have seats on the Faculty of Medicine. In harmony with a recommendation of the Senate that the council should invite those members of the honorary staff who may be recommended by the Senate to the council on a report of the Board of the Faculty of Medicine, and following on such actual recommendations invitations have been issued to members of the staff as follows. As clinical lecturers in medicine:—The honorary physicians: Dr. Thomas Churton, Dr. A. G. Barrs, and Dr. C. M. Chadwick; the honorary physicians with charge of out-patients: Dr. T. Wardrop Griffith and Dr. E. F. Trevelyan. As clinical lecturers in surgery:—The honorary surgeons: Mr. E. Ward, Mr. W. H. Brown, Mr. H. Littlewood, and Mr. R. Lawford Knaggs; the honorary assistant surgeons: Mr. B. G. A. Moynihan and Mr. W. Thompson. As clinical lecturer in gynæcology:—Dr. J. B. Hellier. As clinical lecturers in ophthalmology and otology:—The honorary surgeons of the eye and ear department: Mr. H. Secker Walker and Mr. A. L. Whitehead; the honorary assistant surgeon of the eye and ear department: Mr. G. Constable Hayes. A clinical lectureship in infectious diseases has also been instituted and this has been offered to Mr. A. E. A. Pearson who for many years has held the post of resident medical superintendent of the city hospitals and whose courses of practical instruction have been much appreciated by the students. This clinical lectureship also carries with it a seat on the faculty. As the same time Mr. A. T. Bacon, the instructor in vaccination appointed by the Local Government Board, was elected a member of the Faculty of Medicine.

July 25th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Memorial to the late Dr. William Turnbull.

IT is nearly two years—Sept. 20th, 1903—since the University of Durham College of Medicine lost its popular and faithful demonstrator of anatomy by the death of Dr. Turnbull and his name is now about to be honoured by the establishment of a memorial in the department for which he laboured so long and so earnestly. Shortly after his death a committee was formed, with Sir G. H. Philipson as chairman, to collect funds for this purpose. A little over £100 was raised and at a general meeting of graduates and students held on July 18th it was unanimously decided to erect a brass tablet to his memory in the dissecting room of the college and to found a prize in surface anatomy. Had it been Dr. Turnbull's lot to decide what form any anatomical prize should take he certainly would have selected surface anatomy, for he never tired in his efforts to make his students appreciate the importance of this branch of their studies. The exact details of the scheme have yet to be arranged but it is practically decided that students shall be eligible to compete for the prize at the end of their second winter and that the examination shall be an oral one conducted by the professor of anatomy and his assistant.

Appointment of Demonstrator of Bacteriology at the University of Durham.

Mr. H. J. Hutchens has been selected as the demonstrator of bacteriology at the University of Durham. This is the second time that a St. Bartholomew's man has been appointed to this post, for the late Dr. Bigg also emanated from that school. Mr. Hutchens goes to Newcastle not only with a reputation in his own department but possessing the coveted distinction of Membership of the Distinguished Service Order. He intends to continue his work for the Royal Commission on Tuberculosis.

Heath Scholarship.

The subject for the 1908 essay has just been announced as "Injuries and Diseases of the Arteries, Veins, and Capillaries, and their Treatment." The essay must be typewritten or printed and must reach the professor of surgery not later than March 31st of the year for which it is to be awarded.

Newcastle-upon-Tyne Royal Infirmary.

A new edition of the Hospital Pharmacopœia has just been issued and supplies a long-felt want, for the last edition (1892) has long been out of print. The work has been carried out under the direction of a committee of the medical and surgical staff, assisted by Mr. Sidney Dunstan, F.C.S., M.P.S., head dispenser and teacher of pharmacy to the institution. The result is a very handy and presentable little volume. In addition to the usual information it contains a great deal that will make it a very useful pocket manual for students. The methods commonly used for staining of organisms, examination of urine, preparation of invalid foods, and a table of poisons and their antidotes are useful additions.

July 24th.

WALES AND WESTERN COUNTIES NOTES

(FROM OUR OWN CORRESPONDENTS.)

Health Report for Cardiff.

IN his recently issued annual report the medical officer of health of Cardiff (Dr. E. Walford) says that the housing accommodation for the working classes is on the whole satisfactory and overcrowding does not exist to any appreciable extent. He defines overcrowding as the occupation of a dwelling with more than two adults to each room counting two children under 12 years of age as equivalent to one adult. Large block tenemental artisans' dwellings do not exist in Cardiff, most of the working-class families occupying separate dwellings with an open space in the front and at the back. Many of these are sublet to single lodgers or to small families but in one or two districts of the town there are many small cottages, in which no lodgers are taken, let at a weekly rental of 5*s.* In June, 1904, an inspection of the town revealed the fact that about 4·4 per cent. of the total number of houses in the borough were unoccupied. The medical officer of health is the executive officer intrusted with the administration of the Midwives Act in Cardiff and he is assisted by a woman sanitary inspector who visits the midwives on the roll in order to explain when necessary the rules of the Central Midwives Board and to enforce compliance with them. There are in Cardiff 96 midwives certified under the Act, of whom 83 were certified on the ground of having been in *bonâ-fide* practice as midwives for at least one year prior to July 31st, 1902, while 12 were certified on the ground of holding the certificate in midwifery of the Obstetrical Society of London and one on the ground of holding the certificate of the Rotunda Hospital, Dublin. The instruction of school teachers in hygiene has already been provided for in Cardiff by the Cardiff College of the University of Wales. Dr. Walford urges the desirability of a routine medical inspection of the schools and scholars in the town for the purpose of ascertaining the cause of absence from school on account of illness of teachers or of pupils, to confer with the head-teachers on the general state of health of the teachers and scholars, more particularly as to the condition of children considered to be physically or mentally weak, to exclude from school attendance children suffering from any communicable disease, and to examine all those known to have been in contact recently with a person suffering from an infectious disease. In former reports Dr. Walford has alluded to difficulties which arise in connexion with the vaccination and revaccination of "contacts" and now suggests that the sanitary authority should undertake the responsibility of securing the vaccination of those who have been exposed to infection. He also advises that some further inducements should be offered to those who submit to the operation for their own and for the public advantage.

Swansea General Hospital.

The board of management of the Swansea General Hospital has usually met with general support for that institution from the inhabitants of the district and in the last annual report it is stated that the hospital debt has been reduced during the past year from £1677 to £1084. The expenditure for the year was £7134 and the income £7882. 1471 patients were treated in the wards at an average cost of £4 17*s.* The convalescent home which was established three years ago in connexion with the hospital has been of great service, for it has taken charge of 130 patients whose earlier discharge from the hospital enabled more acute cases to be treated.

Cardiff Infirmary.

The more detailed report of the Cardiff Infirmary, which has just been issued, records an expenditure during 1904 of £13,131 and an income of £11,477. There were on an average 156 patients in the hospital daily and the average cost per occupied bed was £65, or about 8*s.* less than in the previous year. Among the 2144 patients admitted during the year 1164 were treated in the surgical wards, 303 in the medical, 428 in the ophthalmic, and 249 in the gynæcological. The question of making the out-patients pay for medicines and dressings is now being discussed by a committee of the board of management. The chairman of the board is anxious that some charge should be made and Mr. Lynn Thomas has said that people came in from the out-lying districts for 2*s.* worth of medicine and paid 2*s.* 9*d* in railway fares, while they were quite well able to pay a local practitioner.

Adulteration of Cream of Tartar.

A grocer has recently been fined at the Caerleon police-court £10 and £4 costs for selling cream of tartar adulterated to the extent of 83 per cent., principally with gypsum.

Memorial to the late Dr. T. Gilbart Smith.

A handsome memorial has recently been erected on the highway near Sidmouth, South Devon, to the memory of the late Dr. T. Gilbart Smith. The memorial, which is of blue granite, is in the form of a seat and has the following inscription: "Thomas Gilbart Smith, a succourer of many. Thus closed a noble life spent in the service of his fellow men; he never turned his back on duty, but faithful to his motto, 'dare and do,' remained undaunted to the end. On this spot at half past 9 o'clock after watching the glorious sunset of August 3rd, 1904, Thomas Gilbart Smith, M.D., F.R.C.P., fell dead from his bicycle."

Medical Cricket Match at Bristol.

A cricket match was played on July 20th at the Gloucestershire county cricket ground, Bristol, between teams representing the medical staff of the Bristol Royal Infirmary and Bristol General Hospital and students of the Medical School. There was a large number of spectators present and after an exciting finish the students won by three runs.

July 24th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Physicians of Edinburgh.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on July 18th, Dr. J. Playfair, the President, being in the chair. Two gentlemen were admitted to the Fellowship of the College and the Registrar reported that since the last quarterly meeting 24 persons had obtained the Licence of the College by examination. The annual statement by the governing board of the School of Medicine of the Royal Colleges indicated that the number of students during the winter session was 1122 and during the summer session 1237.—The Freeland Barbour Fellowship was awarded to Dr. Benjamin P. Watson and the Hill Pattison-Struthers Bursary in Clinical Medicine to Mr. Robert Murray Fraser.—By vote of the College a Licentiate of the College was expelled from the College and deprived of his Licence to practise, as granted by the College, and of all his rights and privileges as Licentiate.

Graduation Ceremony at the University of Glasgow.

The summer graduation ceremony at the University of Glasgow took place last week. In two cases the degree of M.D. was conferred, while of the 81 graduates who came forward for the degree of M.B., Ch.B., five took the degree "with honours" and 11 "with commendation." At the close of the ceremony Professor Murdoch Cameron delivered a brief address to the graduates. After congratulating them on the completion of their University studies and wishing them God-speed in their work he proceeded to describe the advance which had been made in the science of medicine during the last 50 years. He dealt shortly with the progress in pathology, the discovery of antisepsis and asepsis, and the advancement in hygiene and preventive medicine. In dealing with obstetrics he said: "The idea of progress is intimately associated with the elevation and improvement of the position of women and hence the importance of Queen Margaret College in preparing medical women for zenana work in India. It has been said that the state of the obstetric art in any country may be taken as a measure of the respect of its people for the female sex and this in turn may be taken as a true standard of its civilisation. Prayers for the well-being of such patients have a place in the English liturgy, but I am afraid that in Scotland many in the past have taken but little interest in such cases unless where it concerned their own fireside. I have said in the past, for within the past year there has been a movement which has been well supported. The directors of the maternity hospital are making an appeal for funds for additional buildings which when complete will form a school equipped in all its departments for the teaching of practical obstetrics and gynæcology unequalled in this country. The necessity for this will readily be recognised when it is stated that between 3000 and 4000 women each year take advantage of this hospital in its indoor and outdoor departments. Now in this movement the directors are keeping in view the needs of the University, so that the students, male and female, will have ample opportunities of gaining a thorough practical knowledge under the immediate supervision of the professor of midwifery and the physicians to the hospital. In private practice, in Scotland at least, the illiterate midwife is fast going out of date. In outlying districts the trained nurse holds an important post and forms a useful ally to the overworked country practitioner. Remoter districts in Scotland are being supplied with cottage nurses and the demand in the

Highlands for women holding midwifery certificates is very great owing to the long distances from medical men. It will readily be understood that both rich and poor are alike interested in this work, the importance of which has hitherto never been sufficiently recognised. Outside of students and nurses trained in the Maternity Hospital only those who have been identified with its management have any idea of how quietly the work has been carried on or can form the slightest idea of what a blessing such an institution is to the poor in our populous districts, or how necessary it is for the reception of serious cases which come from the town and country districts of the whole west of Scotland. Building operations have already commenced and it is hoped that before it is finished the directors will be in a position to open it free of debt. Generous donors have already given £40,000 but as much more will be required. It is confidently expected that a generous public will relieve the directors of their financial responsibility. In about two years it should be finished and it is to be hoped that some of you will return to compare notes of the old with the new or become house surgeons and so obtain an experience such as no other hospital can offer. There is a maxim that a large and healthy population is the life and strength of a nation and the source of its strength in art, agriculture, and commerce. Our pride for many years has been our great empire and the aim of our legislators is how to consolidate it. It would be well if they could realise that in our large cities, and even our country towns, there are agencies stealthily at work in the ill-ventilated and overcrowded dwellings which generate disease in one form or other that carry off about one-fourth of the children within the first five years of life. Any careful observer cannot but be impressed with the fact that most of this mortality is due to causes that might be prevented. Diminish intemperance and improve the habits of the people and not only will the death-rate be lessened but mothers will be so improved in health that there will be a disappearance of the antenatal causes that are responsible for the vast number of sickly infants who die before they reach two years of age. We are too apt to look upon such conditions as unavoidable, but if greater care was bestowed upon the mother and her offspring much disease and misery would be prevented. There are very few women who, when married, have much knowledge of children, unless they have had special opportunities of learning, and these form the exception. However highly a woman has been educated she is generally entirely ignorant of maternal duties. Much suffering and injury are the result and this more from ignorance than carelessness. A great agitation is made from time to time about conscription for the safety of our land. It would be wiser to introduce conscription for domestic service amongst girls for the safety, well-being, and happiness of the home. The danger that threatens our country is to be found on the hearth and not on the coast."

The Carnegie Trust for the Universities of Scotland.

The executive committee of the Carnegie Trust has published the list of awards under the research scheme for the year 1905–06. There have been granted in all 16 research fellowships, 28 research scholarships, and 40 research grants, representing an outlay of close on £7000.

July 25th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

The Sanitary Condition of Newtownards.

THE medical inspector of the Local Government Board has in a report to his chiefs pointed out that both the water-supply and the drainage of the district are defective. He recommends further that the Newtownards, Bangor urban, and Newtownards rural district council should take into consideration the advisability of providing an infectious diseases hospital, as the workhouse fever hospital is not sufficient for the districts.

Portadown and Banbridge Water supply.

The money required for the carrying out of this scheme—amounting to £70,000 –has all been subscribed, the security to the lenders being the combined rates of both towns.

Maternity Nurses in Derry.

Two of the dispensary medical officers of Derry have urged the Derry Poor-law guardians to appoint two additional maternity nurses for the city district. During the past year the present nurse has attended 215 cases, and in order to give the necessary attention to each case and not to overwork the nurse each nurse should not be asked to attend more than 50 cases in the year. The matter is to be considered fully by the guardians. It is clear that more maternity nurses are urgently required.

Salaries of Dispensary Medical Officers.

Mr. J. F. Mitchell (Bangor) and Dr. R. Henry (Comber) appeared before the Newtownards guardians on July 22nd on behalf of the medical officers of each dispensary district in the union, to ask the guardians to reconsider the question of their salaries. The matter is to come up again for reconsideration in a month.

July 26th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Spinal Contusions and the Workmen's Compensation Act.

AT a meeting of the Society of Legal Medicine held on July 10th the following case came up for discussion. It was that of a man whose work involved the carrying of large bundles of waste paper. In the course of this employment he bruised his lumbar region and was thereupon afflicted with neuralgia so that he had to take to his bed. Before he was quite well he went back to work and his foot slipping he jarred one of his legs sharply and immediately felt a violent pain in the right groin. The next thing was that his right leg became paralysed, he suffered from pains in the course of the anterior crural nerve, besides exhibiting an anæsthetic patch corresponding to the distribution of the internal saphenous nerve. An action was brought before the Tribunal of Rouen and the court summoned Dr. Laurent to answer the following questions:—1. What is the nature of the injury? 2. Is it of such a kind as to bring about a temporary incapacity for work? 3. What will be the probable duration of such incapacity? Dr. Laurent gave it as his opinion that the man had got traumatic neuritis of the cauda equina and that this had brought on incapacity for work which would last about three or four weeks. The court gave judgment in accordance with Dr. Laurent's evidence. These cases are interesting as they may be diagnosed as hysterical or as cases of simple malingering.

Death Vacancies and the Law.

A trial concerning the above question has recently taken place. The transfer of a medical practice is not legally valid unless the vendor transfers to the buyer negotiable objects such as instruments, books, or furniture coincidently with the transfer of the patients. But the main point for decision in the trial to which I refer was whether such sale is valid when made by the widow or the heirs of the deceased. In this case the widow of a medical man had sold to another medical man her late husband's practice, with the right of occupation of the premises *(cession de location)*. She also sold the books, furniture, and instruments and promised to introduce the buyer to the patients. The buyer, however, refused to execute the contract signed by him, alleging that it was null, and the widow therefore brought an action for damages against him. The Civil Tribunal of Saint-Brieuc, holding that the essentials of the sale of a practice—namely, introduction to the patients and the handing over of patients actually under treatment—could not be carried out by the widow of the practitioner, non-suited her. But the Rennes Court of Appeal reversed this decision, holding that the sale of the practice, together with the sale of books, furniture, and instruments, and the promise of introduction, constituted a transfer of negotiable goods. The court also held that these various elements made up a portion of the patrimony of the deceased and that they could be validly handed over by the widow and the heirs.

Pulmonary Gangrene caused by a Foreign Body in the Bronchus.

At the meeting of the Society of Internal Medicine held on July 3rd M. Fränkel related the case of a man who had come under his care in February and who then exhibited all the signs of a diffuse infiltration of the whole of the lower lobe of the right lung. The patient gave the following history. In August, 1904, he had "swallowed" a small piece of chicken bone, which passed into his respiratory tract. M. Fränkel could not, however, be sure of his diagnosis, for the patient had an anal fistula and his sputum contained Koch's bacilli, so that all the symptoms might have been due to tuberculosis. M. Fränkel asked the patient to submit to bronchoscopy but he refused until some days later when his condition had become desperate. It was then seen that the lung had become gangrenous owing to the foreign body. No intervention was possible for there was no localised focus of disease, the whole lung being riddled with small gangrenous abscesses. The patient died within a few days and M. Fränkel added that he had brought the case to the notice of the society to insist upon the necessity for practising bronchoscopy in all cases of foreign body in the air passages at as early a date as possible. After the foreign body had been imbedded in the air passages for months bronchoscopy was of no avail.

Persistent Hiccough cured by Suggestion.

At the annual meeting of the Society of Hypnology and Psychology, held on June 20th, M. Feuillade related the case of a little girl who, after being frightened, developed a hysterical hiccough which was treated for the space of one month by various means without result. The hiccough persisted during the day but ceased during sleep. The child, whose age was ten and a half years, got very thin and anæmic and refused her food. Her attention was extremely difficult to fix but after the second sitting at which suggestion was practised she ceased to make a noise when she hiccoughed and the only sign of the complaint was a visible and painful contraction of the epigastrium. After the sixteenth sitting, this being the first in which she was really put to sleep, the hiccough ceased entirely. One month later the hiccough returned after the child had been frightened again but a single sitting caused it to disappear.

Pseudo-Appendicitis.

M. de Nittis read a paper on the above subject before the Academy of Medicine on July 12th. He allowed that true appendicitis was far from uncommon but pseudo-appendicitis must also be taken into consideration. The diagnosis of appendicitis was often made under the influence of a kind of preoccupation; cases of floating kidney with pyelitis or of salpingitis were often sent to surgeons as appendicitis, but the reverse mistake hardly ever happened. In the second place—and this was the point upon which he wished to insist—certain affections of the alimentary tract, especially dilatation of the stomach with enteritis, gave exactly the symptoms of appendicitis—even the pain over McBurney's point. In such cases the surgeon might well think that he had to deal with an appendicitis, but in fact the symptoms were due to trouble elsewere, and this trouble could be removed by careful treatment, whereas operation was useless.

The Clinical Examination of Respiratory Chemical Exchange.

At the meeting of the Academy of Medicine, held on July 11th, M. Albert Robin read a most interesting paper upon the above subject. He also showed a simple and ingenious apparatus by means of which, after a little practice, any medical man can easily measure the respiratory coefficient and can, moreover, estimate the respiratory exchange in his patient and thereby deduce a rational method of treatment. A small gauge permits the observer to estimate the inspiratory and expiratory pressures, while by the aid of a three-way cock the expired air can be collected in an indiarubber bag so as easily to be analysed. M. Robin draws the following conclusions from his researches. In cases of very early tuberculosis a marked increase is observed in the figures for the absorption of oxygen and for the elimination of carbon dioxide. A marked decrease in the respiratory exchange is noted in the case of arthritic patients. In the descendants of these two morbid types the same facts may be noted in at least two-thirds of the cases. The above-mentioned types of respiratory exchange will help in distinguishing tuberculous pleurisies (with augmented exchange) from non-tuberculous pleurisies (with diminished or normal exchange). In cases of ascites when the peritoneal cavity is at its maximum of distension the increase in the exchange is very marked, especially from the point of view of carbon dioxide elimination. After tapping the exchange diminishes rapidly in from 24 to 48 hours. In tuberculous cases the best effects of a raw meat diet are seen when the amount given is between 100 and 150 grammes. Above this amount the figure for the carbon dioxide eliminated increases rapidly. The same holds good for eggs if more than from four to six are given. Gelatin if given in doses of 30 grammes per diem rapidly lessens the amount of exchange. Bleeding increases the exchange markedly and is therefore a valuable method of aiding oxidation. Arrhenal given in a dose of five centigrammes per diem diminishes by one quarter the respiratory exchange, but if ten centigrammes are given the exchange is increased by one-tenth. Other arsenical preparations show the same phenomena. The study of the respiratory exchange is thus able to serve as an indication for the dosage of certain drugs.

July 24th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

A New Local Anæsthetic.

Dr. E. Impens of Elberfeld, writing to the *Deutsche Medicinische Wochenschrift*, has given a preliminary account of a new anæsthetic compound termed "alypin." It is the hydrochlorate of benzoyltetramethyldiaminoethyldimethylcarbinol. It is soluble in water, the solutions being of neutral reaction, and it may be sterilised by boiling without prejudice to the anæsthetic action. Alypin is easily absorbed by the mucous membranes and the subcutaneous tissue. The absorption of injected solutions is very prompt and necrotic changes in the neighbourhood of the injection have never been observed. The rapid absorption of the substance favours its anæsthetic action which equals and even excels that of cocaine, as solutions of alypin are efficacious when diluted to a degree at which cocaine becomes inactive. For rabbits a solution of 0·005 per cent. strength produced anæsthesia of the cornea, whilst a solution of cocaine of 0·01 per cent. strength had no effect. In the human eye the administration of a 0·025 solution of alypin produced a decrease of the sensibility of the cornea; with a 0·05 solution the corneal reflex disappeared; and with solutions of a strength from 1 to 2 per cent. complete anæsthesia of the cornea occurred within 60 or 75 seconds. The anæsthesia, like that produced by cocaine, lasts from eight to ten minutes but it differs remarkably from cocaine in this respect, that neither mydriasis nor disturbance of accommodation occurs. The eye, after the anæsthesia has passed off, is in its ordinary condition, not being affected in any way. Moreover, alypin is much less toxic than cocaine, the lethal dose for dogs and cats being twice that of cocaine. With regard to the action of the substance on the respiration and circulation the article states that the small doses which are used in practice have no toxic action; after local application as well as after subcutaneous administration the blood-vessels are dilated, whilst in animals larger doses diminish the blood pressure and the pulse rate. Other physical functions, such as secretion of urine, metabolism, and the body temperature, are not affected at all. Albumin was never observed in the urine. The blood undergoes no modification. Alypin has a slight paralysing action on protoplasm: a solution of 4 per cent. strength applied to a nerve destroys the reaction of the nerve against irritation, whilst the transmission of the nerve impulse is unimpeded. Alypin is excreted through the kidney as the presence of a base may be ascertained in the urine by means of an iodised solution of potassium iodide. The general results obtained by Dr. Impens are to the effect that alypin is an anæsthetic compound of neutral reaction, easily soluble, of the same action as cocaine but without its toxic symptoms, and producing neither mydriasis nor interference with accommodation. It is for these reasons superior also to stovain which has an acid reaction, is not soluble, and is less energetic than cocaine, whilst mydriasis is produced by its administration.

Hygiene of Health Resorts.

A remarkable collective investigation is to be carried out on behalf of the committee of the Berlin Practitioners' Association. Its joint committee (*Geschäftsausschuss der Berliner Standes-Vereine*) at the beginning of the excursion season this year sent to the members of the association a circular in which they were asked to investigate the hygienic condition of any health resort, spa, or other place where they might happen to spend their summer holidays. For that purpose they were provided with a blank form containing queries on the following subjects: number of resident medical men and of pharmacies; condition of the drinking water, condition of the sewers, street cleaning, and fire protection; hospitals (number of beds, wards for infectious diseases), apparatus for disinfection, nursing, and transport of sick, injured, and invalids; first aid; hygienic condition of the baths; hygiene of food, especially of milk; slaughter houses; notification of infectious diseases; and occurrence of epidemics. Undoubtedly the committee is well advised in taking this step, for the hygienic condition of many of the watering places, health resorts, and other summer quarters is far from being satisfactory. It would be injudicious for local practitioners to embroil themselves with the local authorities and they are often unable to improve matters, as their practices would suffer in consequence of persistent attempts at carrying out reforms unwelcome to certain classes of the population. Investigations by independent medical men are therefore advisable.

July 24th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Enuresis.

AT a meeting of the Medical Society of Zürich held on June 24th Dr. Theodore Zangger read a paper on the Treatment of Functional Enuresis. He said that the prevalence of this distressing condition was much greater than was commonly supposed and that the observations of medical officers of schools in combination with those of the teachers in public schools might perhaps supply trustworthy statistics. The little sufferers were for the most part treated injudiciously and harshly or even cruelly by parents, relatives, and teachers. General nervousness was thereby increased in these children who almost all came from a nervous stock and mental disease might even be engendered. Purely medicinal treatment was not very efficacious, belladonna and rhus standing in the foreground. Hygienic and educational methods came first in order of usefulness and faradisation of the bladder has proved most useful, but the treatment must be continued for many weeks or even months and relapses often occurred. Cauterisation of the neck of the bladder or intra-urethral application of faradic currents at the same spot often acted well but as these methods must remain in the hands of specialists any new methods applicable in general practice must be welcomed. Dr. Zangger has been very well satisfied with the results of bimanual massage of the neck of the bladder, one finger working from the rectum. In young children half a dozen applications of massage for a period ranging from three to five minutes once or twice a week were followed by recovery. Dr. Zangger gave full details of five cases of long standing in which all other therapeutic measures had failed, the ages of the patients varying from 11 to 17 years. Massage repeated from 12 to 20 times proved successful in all cases but one, this patient being the subject of serious mental deficiency, and even in this case a great improvement was obtained.

The Treatment of Pseudarthrosis.

A short time ago Professor Bier of Bonn recommended injection of human blood into the neighbourhood of fractures in which bony union could not be obtained and he reported ten cases successfully treated in this way. Dr. Lauper of Interlaken has published a report of two cases, in one of which a woman, aged 71 years, sustained a fracture of the tibia and fibula on Oct. 10th, 1904, and the bones had not united by February, 1905. Dr. Lauper gave injections of 35 or 40 cubic centimetres of blood in the region of the fracture. The blood was obtained by venesection from a healthy man, defibrinated, and injected with antiseptic precautions on Feb. 3rd, 10th, and 17th. Consolidation was noted after eight days; after five weeks the patient could walk about again and has done so ever since. A case occurring in a man, aged 44 years, was treated with injections of the patient's own blood and excellent results were obtained. This operation, therefore, seems deserving of further trial.

Medical Students at the Swiss Universities.

This summer 1679 students were registered at the five Swiss medical faculties—an increase of 146 as compared with the summer of 1904. Only 556 were of Swiss nationality, 1123 being foreigners; as usual, the proportion of females was very large, their actual number being 817. The total numbers at the several universities were as follows: at Basle, 149; at Bern, 554, including 330 females; at Geneva, 285, including 132 females; at Lausanne, 306, including 209 females; and at Zürich, 385, including 165 females.

Zürich, July 24th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Red Cross in the Malarious Districts.

FOR some 12 years the Italian Red Cross has been extending its original sphere of usefulness and now includes in its salutary intervention not only the wounded in war but also the sufferers from disease, endemic or epidemic. In the summer season, for instance, the Roman Campagna is prolific in cases of malarial poisoning and for the treatment of these, as well as by way of prophylaxis, it has established seven "*stazioni sanitarie*" mainly for the purpose of applying quinine, hypodermically and per os, for prevention and cure. In the month of June 8021 individuals came under such treatment, all with results satisfactory on the whole with the exception of 168 persons who either refused to take the quinine prophylactically or who could be prevailed upon to take it only in insufficient quantity. In addition to these there were under Red Cross treatment 115 cases suffering from various non-malarial disorders. Of the patients who had to be conveyed to Rome for further treatment in hospital there were 36, of whom ten were carried by rail and 26 by the ambulances of the Red Cross or, failing these, by the next best vehicles.

The Sixth International Congress of Criminal Anthropology.

The fifth of these Congresses was held in 1901 at Amsterdam and at its close it was moved and carried, *nemine contradicente*, that the sixth should have its seat at Turin. In the Piedmontese capital, accordingly, an organising committee has just been formed to make the necessary arrangements. That committee, on which the local magistracy, the leaders of the medical and juridical faculties, and others of the Senatus Academicus were represented, has decided that the Congress shall take place on April 26th next. The committee came to a further decision—namely, to reinforce its membership with others of the medical and legal professions drawn from the English-speaking world as well as from the continent and to nominate as president his Excellency Signor Bianchi, Minister of Public Instruction, who will open the Congress with an address. In connexion with the Congress there will be an exposition of criminal anthropology which, *inter alia*, will include all the instruments and apparatus for the diagnosis of the physical malformations (craniological and other) favouring or conditioning the tendency to crime, as well as the various means for detecting criminal acts. Further arrangements for the division of the procedure into sections, with the subjects to be dealt with and discussed in each, will be made public at an early date, so as to insure the success of a Congress which bids fair to be not less instructive theoretically and practically than any of its five predecessors.

July 20th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Specialists' Pay for Military Medical Officers.

THE Government of India has issued a notice with reference to specialists' pay for officers of the Royal Army Medical Corps and the Indian Medical Service. This pay is an allowance to officers below the rank of lieutenant-colonel for special sanitary or medical work done for the State which it is not in the power of an ordinary medical officer to perform with the same efficiency as a specialist. It will not be a personal allowance but will be granted only to incumbents of certain specified appointments. Specialists' pay will not be given to officers of the Indian Medical Service in civil employ so that this concession is solely for the benefit of military medical officers. The services of the specialists are to be absolutely at the disposal of the Government in any way that it may direct without further claim for remuneration. The duties of all specialist appointments must be carried out in addition to ordinary hospital duties. The pay of all specialists for this extra work will be the same—viz., Rs.60 a month. Officers of the Royal Army Medical Corps in India will be eligible as specialists under the qualifications laid down by the Army Council for the Royal Army Medical Corps and the eligibility of an officer of the Indian Medical Service will be decided by the Director-General. An officer may qualify as a specialist at any period of his service. There will be 105 appointments in India—55 going to the Royal Army Medical Corps and 50 to the Indian Medical Service officers in military employ. Finally, the order says that selections for appointments will be made under the orders of His Excellency the Commander-in-Chief. It is obvious from these new rules that the status of a specialist is not held in very high esteem and except for the desire of special study there is little inducement for an officer to seek these appointments.

The Declining Plague Mortality.

The figures of plague mortality have ceased for the present to excite much interest. The decline is general and for the week ending June 24th only 4563 deaths were recorded, of which the Punjab returned 3663, the United Provinces 151, Bombay city 112, Bombay province 253, Calcutta 25, Bengal 137, and Burma 93.

Sanitary Report for Assam.

The sanitary report for the province of Assam during the year 1904 shows that the death-rate (25 85) was low and compares very favourably with the average of the previous five years. The birth-rate was 35·5 and exceeded the death-rate in all districts. The registration of both births and deaths, however, is very defective in Assam. It is curious to note that the birth-rate in rural areas is 6 per 1000 higher than that in the towns. The death-rate from cholera among immigrant tea coolies was the lowest on record but is partly explained by the diminished numbers. The curious disease kala-azar seems to be declining but as the diagnosis is so doubtful little reliance can be placed on the published figures and officers deputed to inquire into this disease show that it is more prevalent than appears. It is not now so decidedly epidemic but occurs in chronic and less strongly marked cases or in isolated cases of more acute type. In the tea gardens diarrhœa and dysentery seem to be particularly prevalent and cause a high mortality which is partly attributed to the complete change of diet which the coolies experience on going to Assam. In Sylhet there is a curious custom followed by the Mussulman community of burying their dead within the house compound. This has been stopped at last by the Chief Commissioner using the special powers given to him under the Act of 1897. A Mussulman cemetery has been provided.

The Calcutta Hospitals.

The report on Bengal charitable dispensaries shows that at the Medical College Hospital in Calcutta important additions and improvements have been made, that the antiquated Campbell Hospital is under reconstruction, and that a large scheme for remodelling the Howrah General Hospital has been sanctioned. The number of in-patients has fallen off in Calcutta, notwithstanding the rapid growth of the population, the admissions of men being less than those of 12 years ago. Women, however, go to the hospitals in much larger numbers. The financial figures are extraordinary. The receipts are contributed to the extent of 75 per cent. by Government and Rs.92,877 were paid by patients. Private subscriptions amounted to less than £1000 and it is remarked that the amount contributed by private liberality is deplorably small and the receipts under this head were actually less than they were 20 years previously.

July 7th.

Obituary.

CHARLES HOOPER, M.R.C.S. ENG., L.S.A.,

CONSULTING SURGEON, ROYAL BUCKINGHAMSHIRE HOSPITAL.

Mr. Charles Hooper died at Aylesbury on July 16th at the age of 75 years, after an illness, bravely borne, lasting ten weeks caused by pneumonia complicated with hydrothorax and later with empyema. He was born at Buntingford, where his father, Dr. John Hooper, was in practice. His professional education was obtained in King's College, London, and he took the diplomas of L.S.A. and M.R.C.S. Eng. in 1852 and 1853 respectively. He first went to Aylesbury as house surgeon to the present Royal Buckinghamshire Hospital (then called the Buckinghamshire Infirmary) and soon succeeded to the practice of Mr. Henry Hayward, and at the time of his death had been in private practice for upwards of 50 years. Mr. Hooper always took a keen interest in his profession and was especially attentive to his poorer patients. He held the post of medical officer of health to the Aylesbury urban district council for many years and was for nearly 50 years medical officer for No. 1 District of the Aylesbury union and public vaccinator. For many years he was one of the honorary surgeons to the Royal Buckinghamshire Hospital and was also local secretary to Epsom College, chairman of the Aylesbury division of the South Midland branch of the British Medical Association, and an Associate of the Sanitary Institute. He acted as churchwarden to the parish church for many years; he was also a school manager and trustee of several charities and the oldest Freemason of his lodge. A man of upright character and a very hard worker, never sparing himself, he, in fact, died in harness.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. James Thorburn, formerly professor of therapeutics and pharmacology in Toronto.—Dr. Du Castel of the Academy of Medicine and physician to the hospitals of Paris.—Dr. Michael Krasin, lecturer in surgery in the University of Kazan.—Dr. Alfred Bidder, formerly director of the Britz Hospital, near Berlin, and author of numerous papers on surgical subjects.—Dr. Johann Latschenberger, *privat-docent* in the medical school and professor of physiology in the Veterinary School, Vienna.—Dr. Philipp Schech, extraordinary professor of laryngology with charge of the throat clinic in the University of Munich, at the age of 59 years.—Dr. Friedrich Fischer, of the Strasburg municipal hospitals, after a protracted illness, at the age of 49 years.—Dr. Moussous, formerly professor of clinical midwifery in the University of Bordeaux.

RUSSIAN UNIVERSITY PROFESSORS TO BE ELECTED.—According to the Odessa *Novosti* in the projected new university statutes the principle of election will be the basis of university life. It is proposed that candidates for chairs shall be elected by the existing professors. It is also suggested that those who read treatises to qualify for professorships shall likewise be subject to the ballot of their university colleagues. It is added, however, that, after all, the professors' selection will be subject to the approval of the Government, so that the appearance of liberalism is only an appearance.

AUGUST BANK HOLIDAY ON THE CONTINENT—Cheap tickets available for eight days will be issued to Brussels on August 2nd to 5th, inclusive, and August 7th. Cheap tickets available for seven days will be issued to Liége, for its exhibition, *via* Harwich and Antwerp. Dining and breakfast cars are run between London and Parkeston Quay, Harwich, on the Antwerp service. Passengers leaving London in the evening reach Brussels next morning and Liége at noon after a comfortable night's rest on board the steamer. For visiting the Hague, the Rhine, North and South Germany, and Basle for Switzerland, special facilities are offered *viâ* the Great Eastern Railway Company's Royal British Mail Harwich-Hook of Holland route. A corridor train with vestibule carriages, dining and breakfast cars, is run on the Hook of Holland service between London and Harwich. From the Hook of Holland through carriages and restaurant cars are run in the North and South German express trains to Cologne, Basle, and Berlin, reaching Cologne at noon and Basle and Berlin in the evening. For the convenience of passengers tickets dated in advance can be obtained at the Liverpool-street Station Continental Enquiry Office. The Royal Danish Mail steamers of Det forenede Dampskibs Selskab of Copenhagen will leave Harwich for Esbjerg (on the West coast of Denmark) on August 3rd and 5th, returning on August 8th and 9th. The General Steam Navigation Company's steamers will leave Harwich on August 2nd and 5th for Hamburg, returning on August 6th and 9th.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT LEICESTER.

THE seventy-third annual meeting of the British Medical Association commenced at Leicester on Monday last, July 24th, this being the first occasion on which the Association has met in that town. It is also the first occasion, we believe, on which the Association has found it necessary to commence its formal business on the Monday of assembly instead of on the next day, the large amount of work to be got through by the representatives necessitating the making an earlier start than usual if the programme was to be completed during the week.

A glance at the meeting of Representatives in the Association Hall in Granby-street on Monday afternoon, the floor space of which was covered with small tables with writing materials at which were seated some 150 representatives of branches, all apparently fully absorbed in the business in hand and making notes of the proceedings, furnished a striking contrast between the present-day method of conducting the business of the Association and that which formerly prevailed. The new constitution has in this matter evolved order out of chaos and it is not any longer possible for the clamorous minority to vote over the heads of the less assertive majority—an obvious advantage to the usefulness of the Association and to the furtherance of its legitimate work. That the representatives were not assembled for a "picnic" was evidenced by the many hours' work that they got through, sitting continuously from 2 to 10, with a short interval for dinner.

Leicester is a busy and a thriving town—a fact which is evidenced by the crowded streets and the constant stream of vehicular traffic through them. The noise of the streets is very marked and the greater portion of it is due to the electric trams, the number of cars run being apparently quite in excess of requirements. These start in the early hours of the morning and do not cease running until near midnight and the din caused by them is very wearying, but on the other hand the fact that they are not overcrowded, as London omnibuses and tram-cars so often are, adds greatly to their convenience.

It is not difficult for the stranger to guess what are the chief industries of Leicester, if he did not know them, as on all sides are hosiery and boot factories, with their tall chimneys pouring forth black smoke at intervals.

The population is upwards of 200,000 and the corporation consists of a mayor, 16 aldermen, and 48 councillors. The administration is a striking instance of the municipal acquirement of such undertakings as gas, electric and water supplies, sewage disposal, and tramways. There are excellent open-air spaces provided in Leicester and no less than four sets of public swimming baths exist in the borough, one installation in particular having cost £50,000.

The water-supply is admittedly limited in quantity; in fact, there is grave anxiety about it as the needs of the town so rapidly grow, though in quality it appears to be satisfactory. The public supply is obtained from Charnwood Forest but it is hoped shortly to supplement this by a scheme providing for a supply from the Derwent Valley. The sewage output is dealt with chiefly by surface irrigation but considerable money is being spent on the adoption here and there of bacteriological processes.

The annual exhibition is being held in the Drill Hall and Magazine-square in "the Newarke." The technical and art schools, too, are situated in the Newarke, a kind of square of walls and watch towers, and as the sectional meetings are held there the exhibition is conveniently situated for the members who attended the reading of scientific papers. Adjoining the drill hall is a marquee in which motor-cars are exhibited as well as some sanitary appliances and a few exhibits of a miscellaneous character. The exhibition is on a decidedly smaller scale than last year and on the whole less interesting. Aseptic furniture is, perhaps, the most prominent feature of the exhibition, relatively more space being devoted to this class of exhibit than on previous occasions, although there are several exhibits demonstrating distinct advances in x ray work and high-frequency apparatus. In another column we commence a detailed account of the more important exhibits.

The annual general meeting was held in the hall of the Young Men's Christian Association on Monday, at 2 P.M., Dr. William Collier, the President, being in the chair. The sole business before the meeting was the confirmation of the minutes of the last meeting held at Oxford. These minutes were taken as read and there being no opposition were duly signed by the President. The meeting then adjourned until Tuesday and the representative meeting commenced.

The adjourned general meeting was held at 2 P.M. on Tuesday, when the first business was the installation of the President-elect. The outgoing President, Dr. Collier, after a brief speech in which he referred to the principal events which had occurred in connexion with the Association during the past year, introduced his successor, Mr. George Cooper Franklin, F.R.C.S. Eng. Dr. Collier then retired and Mr. Franklin, the new President, took the chair. A vote of thanks was passed to the retiring President and, in accordance with the usual custom, he was elected a Vice-President of the Association for life. Under By-law 37, which provides that a treasurer shall be elected by the annual general meeting and shall hold office for three years, Dr. Edward Markham Skerritt retired and Dr. H. Radcliffe Crocker was elected treasurer in his place. A vote of thanks was passed to Dr. Skerritt and he was elected a Vice-President for life.

A recommendation of the Council that a sum of £300 should be voted to the office staff superannuation fund was unanimously adopted and after the appointment of the auditors the meeting adjourned until 8.30 P.M.

At the adjourned meeting, which was held in the Royal Opera House, the President being in the chair, the proceedings were opened by the Mayor of Leicester (Mr. Councillor Hilton) offering a welcome to the Association in the name of the corporation of Leicester. Dr. Astley V. Clarke, one of the honorary secretaries of the executive committee, then introduced the guests and the colonial delegates. Among the former were Professor Hartmann, Paris; Professor Bergheim, Vienna; Professor Czermak, New York; Professor Karl Hesse, Würzburg; Dr. Boyd, New York; Dr. L. A. Thomas, Iowa; and Dr. Charles O'Reilly, Toronto. The Colonial delegates were many and came from nearly all parts of the Empire—the West Indies, Ceylon, India, Malaya, China, Canada, Natal, and Australia. The President having received the guests and delegates then said that his next duty was the very pleasant one of presenting to Sir Constantine Holman and to Mr. Andrew Clark the gold medal of the Association. He alluded to Sir Constantine Holman's long term of service to the profession in connexion with the Surrey Medical Benevolent Society and Epsom College, as well as to his work for the Association. In referring to Mr. Andrew Clark, the President recalled the fact that he had just resigned the office of chairman of council. Both recipients of the medal having replied, the President next announced that the Stewart Prize was presented to Mr. W. H. Power, medical officer of the Local Government Board, who was unfortunately prevented from being present. This concluded the business of the adjourned general meeting and the President of the Association then gave his address which will be found at p. 267.

The sections, which were 12 in number this year, were all conveniently located under one roof in the technical schools in the Newarke, to the great advantage of all concerned. It was unfortunate that the representative meeting was still in session on Wednesday morning when the sections were at work, as this duality of business kept many representatives away from the sections. The representatives have certainly worked exceedingly hard this year and there is likely to be an agitation for an "eight-hours day" before the date of the next annual meeting.

Dr. H. W. Langley Browne has been elected chairman of the Council for the ensuing three years in the place of Mr. Andrew Clark, whose term of office has expired. The members of the Council at their meeting on Tuesday expressed their thanks to Mr. Clark for the able manner in which he had presided over their deliberations during his period of office.

A church service has for many years past been a feature of the Association meeting and heretofore it has been called the "*opening*" service and has taken place on the Tuesday morning at about the usual hour for matins in this country. The relegation of the service this year to five o'clock on the Tuesday afternoon rendered it a somewhat meaningless function, and it was not surprising, therefore, that the attendance showed a falling off. The service took place in St. Martin's Church, the Bishop of the recently created diocese of Birmingham (Dr. Gore) being the preacher. So eminent a thinker should have obtained a larger audience for his exposition of the relationship between the clerical and the medical professions. The collection was, as usual, for division between the British Medical Benevolent Fund and Epsom College. A service was also held at the same time at Holy Cross Roman Catholic Church.

At the adjourned general meeting held in the Temperance Hall at 2 P.M. on Wednesday, the President announced that the Council had received an invitation from the Toronto branch of the Association, conveyed by Professor I. H. Cameron, to meet in Toronto next year. The Council recommended that this invitation should be accepted, a view which was adopted by the meeting. The nomination of the President-elect was, subject to the approval of the Toronto branch, left in the hands of the Council. This concluded the business of the meeting and the President then called upon Dr. Henry Maudsley to deliver the Address in Medicine, which will be found at p. 271.

We must again express our thanks to Mr. Guy Elliston, the general secretary of the Association, for much courtesy and help afforded to the representatives of THE LANCET in various directions.

THE SECTIONS.

MEDICINE.

WEDNESDAY, JULY 26TH.

THE section met under the presidency of Dr. FRANK M. POPE and Sir LAUDER BRUNTON (London) opened a discussion on

The Treatment of Sleeplessness and Pain.

He said that it was not very easy to give a correct and complete definition of sleep, so as to differentiate it entirely from the conditions of coma, delirium, active dreaming, and somnambulism. The subject might be roughly said to be insensible to ordinary external stimuli, when these were not too severe. The state depended partly on the condition of the brain cells and partly on the circulation. The brain cells might be kept active and sleep be prevented by stimulants to the brain itself, such as psychical impressions, worry, anxiety, eagerness, and anticipation, very pleasurable and very painful. Pain had probably a double action, increasing the activity both of the cerebral cells and of the circulation through the brain. Excessive heat or cold to the surface might have a similar action, as well as distension of the stomach or intestines by flatulence, or irritation by excessive acidity in the stomach, or irritant substances in the intestines. Both the circulation and the nerve cells might be influenced by leucomaines formed in the body or taken from without, such as the active principles of tea or coffee. The circulation might be stimulated by over-action of the heart through heat, excitement, drugs (such as tobacco), or by high tension in cases of gout. Rigidity of the arteries leading to the brain might also lead to sleeplessness. The treatment consisted in the removal of the cause if possible or in counteracting the abnormal condition either of the brain cells or of the circulation. As special remedies he mentioned small doses of potassium iodide in combination with massage when the carotids were tense, bathing and rubbing the feet in cold water when coldness of the extremities was associated with sleeplessness, warm bathing or sponging when the skin was dry, the administration of from ten to 30 grains of bicarbonate of soda in gastric acidity, emptying a full stomach or replenishing an empty one with warm food, employing wet pack, cold affusion or hot water sponging in fever followed by exposing the imperfectly dried body covered with a "cradle" and sheet over so as to allow a continuous draught. He recommended the avoidance of nerve stimuli resembling the products of nitrogenous waste and suggested lactic acid and urethane. Chloral depressed the heart and lowered tension and was especially useful in cases of high tension. The same was true of all the chlorine substitution products. On the other hand, the sulphur products, with alcohol, sulphonal, trional, and tetronal, were free from this depressing effect. Valerian, also, was useful in reducing restlessness. The sensation of pain had its own seat in the cerebrum, but it was usually excited by peripheral irritation affecting either nerve ends, nerve trunks, or the spinal cord. There were many varieties of pain—burning, shooting, stabbing, grinding, gnawing, &c. The causes might be peripheral or central. Sensibility to pain varied greatly in different people and in the same person at different times. The treatment of pain consisted in removing irritation or lessening sensibility in nerves, spinal cord, or cerebral centre. The methods of doing this were numerous, and included mental impression, mechanical removal of irritation, neutralisation of chemical irritants, and alterations in nerves and nerve centres by drugs, massage, vibration, and electricity. As particular suggestions in the treatment of pain he pointed out that it was better to administer opium or its derivatives in glycerine by the rectum than to trust to its absorption in a full stomach. He suggested bicarbonate of soda solution with laudanum as an efficient application to an aching hollow tooth or even rinsing the mouth with soda solution to neutralise acidity. Opium followed by chloroform inhalation was the best remedy for hepatic colic, and in angina pectoris morphine in combination with amyl nitrite or nitro glycerine. Headache was best treated by salicylate of soda in combination with potassii bromidum taken overnight or early in the morning. Antipyretic drugs such as phenacetin and antipyrin appeared to lessen pain by causing diffusion of impulses in the spinal cord.

Professor CUSHNY contended that the damage from lack of sleep was greater than that from the use of narcotics, which helped, occasionally administered, to break a vicious circle. Unfortunately, their action was uncertain in degree and time and liable to be attended by excitement. Chloral, one of the best, was introduced in 1869 and others of the chlorine class followed, such as isopral and chloretone. They all depressed the heart and just as surgeons had left chloroform for ether so physicians had turned from the chlorine narcotics to those derived from alcohol, such as paraldehyde and amylene, as being safer though less certain in action. Of the urea compounds, urethane was weak and hedonal required a large dose. Veronal was probably the best in 5–15-grain doses. There were obvious objections to the older vegetable hypnotics, opium and morphine, and the belladonna alkaloids were capricious in action and accompanied by objectionable side effects. He preferred to use racemic hyoscine in combination with bromides.

Sir **William Broadbent** (London) recommended that before employing hypnotics an attempt should be made to identify the cause of sleeplessness. Disordered digestion was commonly the cause of awaking during the night, while anxiety prevented the first sleep. Anything displacing a little gas from the stomach gave relief, even water, without going to the extreme of emetics. He thought cold feet were part of a general condition and best remedied by cold affusion and rubbing. In high arterial tension calomel often gave relief and induced sleep even before the bowels acted. The subjects of low tension were sometimes unable to sleep in the horizontal position as the cerebral vessels were unable to contract and to resist the pressure of blood. Chloral was not only dangerous in primary heart affections but also in many pulmonary diseases on account of the cardiac depression.

Dr. **W. Hale White** (London) thought that before attempting to treat insomnia the physician should assure himself of its reality. Patients often fancied or even dreamt they did not sleep. A good test was remembering to have heard the clock strike. The commonest cause was worrying often about quite trivial matters, in which case sleep might be induced by some monotonous repetition. Waking at 3 A.M. might be due to abnormal sensation of hunger, allayed by swallowing anything, even water. Diarrhœa or flatulence was more productive of sleeplessness than constipation, as was also delayed digestion due to fatigue. The insomnia of convalescence passed off as strength improved. Serious diseases which were incurable or which might shortly be recovered from called for narcotics. 10 grains of Dover's powder often did wonders in pneumonia, as did opium in heart disease; on the contrary, in less serious and long-lasting disease, such as tabes dorsalis or neuralgia, there was great risk of inducing a drug habit. People often awoke for want of ventilation, too great heat, noises, or light, which did not call for drugs. He recommended chloralamide, heroin, and paraldehyde.

Dr. **W. Collier** (Oxford) referred much of the present insomnia to over-education, especially in preparing for scholarships, the successful competitors often suffering after the age of 19 years from nervous failure and insomnia. He thought that the occasional employment of narcotics was of value in breaking a vicious circle before the habit of sleeplessness was established.

Dr. **Huchard** (Paris) considered that sleeplessness was not so much due to actual high circulatory tension as its variation in the same individual. The administration of one-tenth of a grain of calomel three times a day was often enough to gradually restore the habit of sleep in cases of high arterial tension, probably dependent on imperfect metabolism. Low blood-pressure could be rapidly raised by strychnine with which small doses of hypnotics otherwise useless often proved effective. Veronal and dormiol were safe and efficient, the former even in doses of three grains.

Dr. **Bertrand Dawson** (London), referring to the treatment of pain, said that what was wanted was a good peripheral anodyne. Cocaine, eucaine, and adrenalin were too transient. Orthoform and anæsthesin were useful as ointment, insufflating or dusting powder, but were insoluble and so inapplicable to the unbroken skin or as hypodermic injection. He recommended aspirin and trional in combination for sleeplessness through pain.

The **President** of the section said that he found paraldehyde useful as a hypnotic in old topers; perhaps it was like what they had been used to.

Dr. **Wilfred J. Hadley** (London) read a paper entitled,

Diagnosis of the Varieties of Pleural Effusion.

These were (1) Septic and inflammatory; (2) tuberculous; (3) mechanical (heart and renal disease); and (4) cancerous. The means of distinction were clinical; culture and inoculation of the fluid; the effect of tuberculin; Jusset's microscopic method and cytodiagnosis. Polymorph cells indicating inflammatory and small lymphocytes tuberculous lesions, while hydrothorax showed only sparse endothelial cells. Jusset's method consisted of artificially digesting a few ounces of the clotted fluid, centrifugalising, and detecting tubercle bacilli in the deposit. By these means from 40 to 70 per cent. of pleural effusion were found to be of tuberculous origin.

Professor **W. Osler** (Oxford) said that a tuberculous pleurisy might be as acute as any other in onset and might complicate rheumatism or pneumonia. It was most important to examine the sputum frequently for bacilli. His cases showed close on 30 per cent. subsequently dying from phthisis.

Dr. **W. B. Ransom** (Nottingham) read a paper on

The Influence of Posture on Breath Sounds.

It was well known that a cardiac murmur might be distinct on the patient lying down but inaudible while he was standing, but this was not so well appreciated in lung disease. He quoted three cases in which crepitation and rhoncus inaudible in the erect posture was quite distinct on the patient lying down, all in the upper lobe of the lung and all due to tubercle as shown by later development. Expiration was prolonged on lying down possibly from difficulty in descent of the diaphragm.

SURGERY.

Wednesday, July 26th.

Sir **Charles B. Ball** (Dublin) presided in this section and in inaugurating the meeting he mentioned that so many papers had been offered to the section that it had been found necessary to ballot for the papers which were to appear on each day. He then called upon Mr. B. G. A. Moynihan (Leeds) to open a discussion on

The Surgical Treatment of Non-malignant Diseases of the Stomach.

Mr. **Moynihan**, in order to facilitate the discussion, had prepared and had had printed a very full account of his cases which formed the material on which his paper was based and this account was distributed amongst the members at the meeting. He pointed out that the records contained in it were made up to a very recent date and great pains had been taken to obtain trustworthy information as to the present condition of the patients on whom he had operated. The non-malignant conditions of the stomach amenable to surgical treatment naturally were divided into four groups. In the first group were cases of perforating gastric and duodenal ulcers. As to the diagnosis of these cases it was very seldom that there need be any hesitation and as to the treatment there was an absolute unanimity that immediate operation was imperative. There were, however, some points which were not yet settled. In the first place is it advisable to excise the ulcer? Mr. Moynihan did not feel at all sure, and he had not been in the habit of doing it, but he was rather inclined to think that excision of the ulcer before suturing of the perforation would be an improvement. In the second place, should lavage of the peritoneum be performed and drainage arranged? In his opinion the need depended entirely on the time that had elapsed at the time of the operation since the perforation occurred. When a case is seen and the operation is performed a short time after the perforation has happened there is no need to wash out the peritoneal cavity or to drain it. When, however, many hours have elapsed and the peritoneum is definitely infected, lavage and drainage are very necessary. In the third place, is it advisable to perform a gastro-enterostomy at the time of closure of the perforation? He thought that in any case seen early it was desirable to do a gastro-enterostomy or Finney's operation at once, as thereby the healing of the ulcer was greatly expedited; but if the case were seen first when a long time had elapsed since the perforation the general condition of the patient would prohibit any extension of the operation. It is especially desirable that a gastro-enterostomy or Finney's operation should be performed when the ulcer is situated near the pylorus or in the duodenum, as thereby any later obstruction to the passage out of the contents of the stomach would be obviated. Fourthly, is it desirable to wash out the stomach? Mr. Moynihan had latterly been in the habit of washing out the stomach with boiled water immediately before and during the operation of closing the perforation and he felt sure that this practice favoured the closing of the ulcer and prevented later leaking. Lastly, he wished to emphasise the fact that really acute ulcer of the stomach does not perforate but in every case of perforation there had been a definite increase of symptoms for some time before the perforation occurred. The second group of cases included those in which there was hæmorrhage from an ulcer of the stomach. This hæmorrhage might come from an acute or a chronic ulcer. It might arise from an acute ulcer; but it is very difficult to define an acute gastric ulcer because erosions might be included, but the hæmorrhage from an acute ulcer was never of any great interest to surgeons, for though it may be alarming it has a natural tendency to cease, and it is very rare for it to recur. In the case of chronic ulcers the hæmorrhage may be insignificant, or if more profuse it may only recur at very long intervals. In such cases there can be no need for immediate operation so far as the hæmorrhage is concerned. Also if, as occurs in some cases, the hæmorrhage is instant and overwhelming there can be no question of operation, for the patient dies before any operation can be performed. There remain therefore those cases in which the hæmorrhage is of some severity and then within 12 or 24 hours it recurs and recurs again, and the intervals decrease and the quantity of blood lost increases. In these cases it is probable that at least 90 per cent. would prove fatal if no operation were performed. In these cases an immediate operation is needed. Hæmorrhage from gastric ulcer nearly always occurs after an exacerbation of symptoms. Into the third group fall those cases where chronic ulcers of the stomach or duodenum persist in spite of treatment. Mr. Moynihan was inclined to think that chronic ulcers of the duodenum often escape diagnosis, though the diagnosis is generally very easy. The symptoms of chronic ulcer of the stomach or of the duodenum are numerous. The time of onset after the taking of food is of distinct value in localising the situation of the ulcer. The nearer the ulcer is to the cardia the shorter the interval between the taking of food and the occurrence of pain. The later the pain the nearer is the ulcer to the pylorus. Cases certainly have been recorded which seem to throw doubt on this rule but in Mr. Moynihan's opinion they are due to the presence of more than one ulcer in the stomach. The situation of the surface tenderness varies and a rough rule may be laid down that the nearer the tender spot is to the ensiform cartilage the nearer the ulcer is to the cardiac orifice and it has been found possible to prophesy more or less certainly the locality of the ulcer from the situation of the tender spot. The direction of the radiation of the pain is also of some value and it may perhaps one day be possible to state with fair exactness not only the situation of the ulcer but the existence of adhesions and their locality. The surgical treatment of chronic gastric and duodenal ulcers is in every way safer than medical treatment. In addition to the risks of hæmorrhage and perforation there is the additional danger of the development of malignant disease. The probability of this is difficult to estimate exactly, but Mr. Moynihan thinks that in 60 per cent. of the cases of gastric carcinoma there is a definite history of the symptoms of gastric ulcer. The prognosis of operation for gastro-enterostomy (excluding the cases where it is performed for perforation or hæmorrhage) is only 3 per cent., but even if it were higher, even as high as 15 per cent., it would be safer to operate than to leave these chronic ulcers to medical treatment. In all cases of chronic ulcer medical treatment should be tried first, unless there are any urgent symptoms calling for operation. The results of the surgical treatment of these chronic ulcers are very satisfactory. The immediate mortality is very low; in Mr. Moynihan's cases it is only 1·15 per cent. and of all his cases there were 80 per cent. of complete recovery from all symptoms. 10 per cent. of his cases were too recent to be included and in about 3 per cent. either a second operation was needed or no real benefit was obtained. Some of the cases which received no benefit were neurasthenic and with a widened experience such cases would not be submitted to operation. It may safely be said that every year the results of the surgical treatment of chronic gastric ulcer are improving. The fourth group contains cases of hour-glass stomach. These are often overlooked and they are probably by no means rare. It is essential that in all operations on the stomach the surgeon should see and handle the whole of the viscus before performing the operation, otherwise a gastro-enterostomy may be performed on the pyloric pouch of an hour-glass stomach. In one case Mr. Moynihan recognised the existence of an hour-glass stomach but failed to see that the stomach was trifid and so the operation failed of its purpose. Even in an ordinary hour-glass stomach there is generally some constriction of the pylorus, so that even if gastro-enterostomy be done on the cardiac pouch the pyloric pouch will fail to empty itself. There are numerous operations for the treatment of hour-glass contraction and the operation will vary with the exact condition present.

Professor ROBERT SAUNDBY (Birmingham) said that according to many surgeons the physician was doomed to extinction. Against the exploratory incision he was inclined specially to speak for it tended to displace diagnosis, and sometimes an exploratory incision meant that the operator was unable or unwilling to apply the ordinary diagnostic methods of the physician. Only too often it happened that a patient saw a physician and was told that no operation was desirable and a little later the same patient saw a surgeon and was told that an operation was imperative. In many cases it was very desirable that the physician and surgeon should meet and discuss the desirability of an operative procedure. He was entirely opposed to a statement contained in Mr. Moynihan's pamphlet where it was said that the surgeon should operate in all cases of chronic inveterate dyspepsia. This might possibly be true if a chronic inveterate gastric ulcer were present, but chronic inveterate dyspepsia might be the result of atonic dyspepsia with neurasthenia, or of exhaustion from child-bearing, or merely even of defective teeth. In cases such as these surgery can do no good and often does harm. The physician sees many cases early and then with suitable treatment they nearly all get well. Professor Saundby had never lost a case of gastric ulcer from hæmorrhage and therefore operation could not be so very necessary. With duodenal ulcer the case was different and in such cases early operation was very desirable but chronic gastric ulcer in many cases he successfully treated by medical means. He could not agree with Mr. Moynihan's estimate of the fatal character of gastric ulcer, for death very rarely occurred while a patient was under medical treatment. He also did not agree that many gastric ulcers went on to malignant disease; at least this was not so in Birmingham where malignant disease was rare; in fact, in 20 years' of hospital practice he did not think he had seen 20 cases of malignant disease of the stomach.

Professor HARTMANN (Paris) gave the statistics of 119 cases in which he had performed gastro-enterostomy. His operation mortality had been constantly diminishing and the mortality would be less even than it was if physicians would invoke the aid of the surgeon at an earlier stage. He always performed the posterior operation and placed the patient in the Trendelenburg position so that no leakage occurred during the operation. He employed two layers of sutures and the line of fixation was long and inclined downwards and to the right. The stomach was attached to the bowel about eight centimetres from the duodeno-jejunal junction. The most frequent complications were pulmonary and in only one case did a vicious circle form. Most of the unsuccessful cases had a nervous element in them. He was of opinion that all cases of stenosis of the pylorus needed treatment whether the narrowing be slight or severe. As to hæmorrhage he operated in all severe cases and in slighter cases when the hæmorrhage was frequently repeated.

Dr. J. M. T. FINNEY (Baltimore) chiefly referred to his form of pyloroplasty. He described the operation which consisted of a gastro-duodenostomy in which the new opening extended upwards into the pylorus. By an ingenious method of applying the sutures the operation was rendered comparatively easy. He mentioned that Scudder of Boston had devised a modification of the operation, employing continuous sutures, and Gould, also of Boston, had employed clamps but essentially the operation was the same. The indications were practically those of gastro-enterostomy. He had employed it 25 times. The chief contra-indication was hypertrophy of the pylorus and Dr. Finney referred to the great difficulty sometimes experienced in diagnosing between this condition and carcinoma and he related two cases in one of which a malignant growth was diagnosed as non-malignant and in the other, a simple hypertrophy of the pylorus, was thought to be carcinomatous. Dense adhesions also were a contra-indication against his operation but they did not render the operation impossible. He described an interesting case in which at the necropsy marked dilatation of the duodenum was found ; the patient died on the sixth day with all the symptoms of vicious circle. Incidentally he remarked that the so-called "vicious circle" was really an intestinal obstruction. Up to the present his operation had been performed 112 times with ten deaths, and as these statistics were drawn from the operations of 12 surgeons it might be concluded that they had a fair idea of the risk of the operation at present.

Mr. C. W. Mansell Moullin (London) considered that diagnosis was the main difficulty and he looked upon an exploratory operation as a failure in diagnosis. The non-malignant forms of gastric disease which were suitable for surgical treatment were perforated gastric ulcer and cases of gastric ulcer in which exacerbations of the symptoms were present. Cases also in which disease had caused definite structural change were suitable for operation. When hæmorrhage was threatening life or was of frequent recurrence an operation should be performed. When hæmorrhage occurred from a definite bleeding spot he was in favour of dealing with the spot itself and not trusting to a gastro-enterostomy which could not be relied on to stop the hæmorrhage. The pain of gastric ulcer was due to dragging on the peritoneum and not to pressure on the ulcerated surface. In chronic ulcer gastro-enterostomy should be performed when the pain and discomfort interfered with the conduct of life. Mr. Mansell Moullin thought that it would be well to excise the ulcer when possible.

Mr. F. S. Eve (London) dealt chiefly with gastroptosis for which he had operated four times. Two cases had been treated with gastropexy and two with gastro-enterostomy. Two of the cases completely recovered and two were benefited. The treatment of hæmorrhage depended chiefly on the diagnosis. Most cases of hæmorrhagic erosions recovered without operation, but chronic ulcer would not. The difficulties of diagnosis were very great.

Mr. W. Bruce Clarke (London) distributed a pamphlet containing the substance of his views on the questions raised by Mr. Moynihan. He thought that the results of perforation depended in great part on the character of the liquid poured out into the stomach. In 13 out of 15 cases examined the liquid was sterile and therefore in most cases he felt that there was no need to clear out the material poured out into the peritoneal cavity. He laid great stress on drainage and in the average case he put in a drainage-tube, inserted a stretch in the ulcer, and merely sponged out as much as possible, and in one case he merely drained, recovery ensuing. If perforation had occurred earlier he put in a drainage-tube and then transfused the patient to the extent of even 15 pints in the 24 hours into the subcutaneous tissue and thus washed out the peritoneal cavity. Rutherford Morison (Newcastle-upon-Tyne) preferred pyloroplasty to gastro-enterostomy. In his opinion it was the best operation for pyloric stricture ; he had had 28 cases and of these 12 were perfectly well. In four the symptoms returned, caused by fresh ulceration, and in all these gastro-enterostomy had been performed with success.

Mr. F. C. Wallis (London) laid stress on the importance of early diagnosis in perforating ulcer, and he pointed out that the injudicious administration of morphine tended to hide the symptoms. He thought it unwise to waste time in hunting for a perforation not easily discoverable, for by opening the stomach the ulcer could easily be found and treated. He referred to one case in which he had successfully performed gastro-enterostomy on a patient 92 years old.

Mr. C. R. B. Keetley (London) thought that the pelvis should be drained in all cases of perforation of the stomach or any other abdominal viscus. Lavage was useful, perhaps, by causing a leucocytosis, but it must not be forgotten that lavage might wash away the leucocytes. He considered that hæmorrhage from an ulcer was due rather to sepsis than to mere irritation or distension. In many cases a simple jejunostomy was the best treatment for gastric hæmorrhage.

Mr. E. Deanesly (Wolverhampton) mentioned that he had in one case diagnosed as perforated gastric ulcer a case of typhoid with acute inflammation of the spleen and in another case diabetic coma simulated a perforated gastric ulcer. He believed that gastro enterostomy relieved a chronic gastric ulcer even when there was no pyloric stenosis.

Mr. Leonard A. Bidwell (London) thought that the anterior operation of gastro-enterostomy was better for cases of greatly dilated stomach and for cases where there was much thickening round the stomach. He objected to pyloroplasty and to Finney's operation that in neither case was the opening in the most dependent part of the stomach.

Mr. A. B. Mitchell (Belfast) never excised the ulcer in perforation and he quoted a case to show that after suture of the ulcer all trace of it might disappear in nine days. He had known cases of gastric ulcer perforate even when no food was being taken by the mouth. Mere suturing of a perforated gastric ulcer is inefficient if an hour-glass contraction is present.

Mr. Moynihan, in reply, mentioned that he had performed Finney's operation in two cases and both did well. He preferred the posterior operation for gastro enterostomy.

Mr. C. A. Leedham Green (Birmingham) read a paper on

Some Further Experiments on the Sterilisation of the Hands

His recent experiments had only served to confirm his belief expressed at the Oxford meeting of the British Medical Association that alcoholic solutions of antiseptics were the most efficacious and that sublimate alcohol was the best of all. Engel had agreed with the great value of alcoholic solutions but he said that sublimin-alcohol was the most powerful. With this view Mr. Leedham-Green's experiments did not agree. A paper was distributed showing graphically the relative efficiency of the different methods of sterilising the hands.

Mr. C. Y. Pearson (Cork) described the results of a series of experiments on the value of his method of sterilising the hands. The method consisted chiefly in washing in soap-and-water for five minutes, then soaking with gauze dipped in an alcoholic solution of biniodide of mercury. Of 20 cases where it was employed nine were absolutely sterile.

Dr. T. G. Atkins (Cork) : 1. Distributed an Account of the After-histories of 20 Cases of Gastro-jejunostomy (reported at the Oxford meeting) for Non-malignant Diseases of the Stomach, showing that most of them had done well. 2. He also read notes of a case of Acute Gangrenous Appendicitis in a boy, aged 13 years. An operation was performed on the second day, though there was no fever. The appendix was found to be gangrenous and improvement occurred for two days but on the fifth day abdominal pain returned and symptoms of acetonæmia appeared. A second operation showed no local cause and the patient died from acute acetonæmia three days later. Dr. Atkins deduced from the case the need for operation in appendicitis as soon as definite symptoms appeared.

STATE MEDICINE.

Wednesday, July 26th.

After some opening remarks by the President (Dr. Philip Boobbyer of Nottingham) on the disabilities of medical officers of health and their amelioration by the formation of an association of representatives of local authorities and sanitary experts, a discussion on

Hospital Isolation

was introduced by Dr. George Wilson (Warwick) who stated that the deductions he would bring forward were the outcome of 32 years' experience. With regard to small-pox isolation, he contended for a special block at the general infectious hospital, and, in his opinion, there was very little risk of the spread of infection. With regard to scarlet fever, he stated that hospital isolation had failed in reducing the incidence and mortality of the disease. He was also sure that it did not cause the presence of the milder form of the infection and was strongly in favour of separate isolation rather than aggregation in large wards.

Dr. T. Whiteside Hime (Bradford) drew attention to the very inadequate knowledge that was possessed concerning the incidence of infectious diseases and of the impossibility of definitely determining what was the real cause of their prevalence at certain periods and their disappearance almost at others.

Dr. J. E. O'Connor (Leicester) believed that until some trustworthy method of locating unnotified cases was evolved hospital isolation must be inefficacious. He would desire to see proper segregation, not aggregation, of scarlet fever cases.

Dr. F. H. Waddy (Sheffield) stated that during the last four years in Sheffield the houses from which patients were removed to hospital were worse off in respect to recurrence of scarlet fever than were those in which patients were treated at home and that he was sure that hospital isolation would have to be regarded as a last resort for those cases which unfortunately could not possibly be treated in their own homes.

Dr. R. S. Marsden (Birkenhead) was prepared to say that hospital isolation, even if it did no more, greatly reduced the amount of suffering and upon that ground alone it was warranted.

Dr. H. Cooper Pattin (Norwich) urged the desirability of true isolation rather than *aggregation* of scarlet fever cases in large wards.

Dr. Spottiswoode Cameron (Leeds) believed that although many suggestive statistics had been put forward it was very important to interpret them rightly.

Dr. W. R. Smith (London) said that the question of the value or otherwise of hospital isolation was not to be answered on mere statistics and an impartial inquiry into the whole subject was needed. He was sure that the importance of "return" cases had been exaggerated.

Dr. E. Haughton (London) alluded to the difficulty there often was in diagnosis.

Mr. J. M. Mackenzie (Kirkby-in-Ashfield) was certain that contact was the real source of infection in scarlet fever.

The President of the section remarked that isolation for small-pox cases appeared to be a settled matter but he felt the need of an inquiry concerning the value of hospital isolation in other infectious cases.

Dr. Wilson then proposed and Dr. C. Killick Millard (Leicester) seconded the following motion which was carried :—

> That as some doubt has arisen in respect to the value of hospital isolation as at present practised as a preventive measure in checking the spread of scarlet fever and diphtheria and in view of the great expenditure of public money which the provision and maintenance of isolation hospitals for these two diseases entails, it is highly desirable that a full and exhaustive inquiry into the whole subject should be carried out with the object of collecting and analysing the large amount of statistical and other evidence now available and that the Local Government Board, as the central authority, be respectfully requested to institute such inquiry.

INDUSTRIAL HYGIENE.

Wednesday, July 25th.

This section was under the presidency of Dr. H. W. Langley Browne (West Bromwich). A discussion on

Physical Deterioration: its Causes and Extent

was opened by Dr. Dawson Williams (London) who produced several tables illustrating a series of observations on the height and weight of boys in primary schools which showed that after the eighth year of age the weight of boys of the artisan classes was very much below the average, this fact being more noticeable in the lowest grade schools. The same remarks applied to the height of boys, though in a less degree. The first striking statement about physical degeneration was made some years ago by Mr. J. Cantlie, who challenged any person to produce a Londoner of the fourth generation. This challenge had never been answered. Dr. Dawson Williams attributed this physical deterioration to various causes, among which he mentioned—improper feeding in infancy; the fact that among the poorer classes mothers worked hard almost up to the time of their confinement; intemperance in fathers, which was said by French authorities to be more injurious to the children than maternal intemperance; and the practice of large numbers of children in London sitting out of doors until midnight which involved a great expenditure of nervous energy. He mentioned that the London Education Committee intended to provide one meal a day for school children, to be cooked by children learning cookery, and suggested, in conclusion, that the medical profession might undertake to collect materials for the further elucidation of the subject.

Mr. William Hall (Leeds) read a paper on

The Influence of Environment upon Physical Development.

He mentioned the recent statement by a distinguished alienist that environment, in which proper food played the most important part, would knock heredity into a cocked hat. Forty years ago Sir William Jenner showed that rickets was due to improper food in infancy. Since then many authorities had pointed out the same fact and now at least 40 per cent. of our poor were rickety and decayed teeth were universal. Fifty years ago the slum mother was much more sober, cleanly, and domestic than she was to-day. She was better nourished herself, always suckled her children, and after weaning them gave them nutritious bone-making food, which she prepared at home. This had all been done away with by our elaborate education system, costing £20,000,000 yearly. Children were now fed on cheap stale food, well seasoned with condiments, which educated them for the love of stimulants in later life and produced also a tendency to scurvy, rickets, and purpura. A little while ago he had examined over 100 adult skeletons in the crypt of Hythe church where they had lain for several centuries. He was struck by the fact that the bones were small but not rickety, the bony palates not much vaulted and the alveolar arches regular, and the teeth that remained were good. It had been said truly that there were hundreds and thousands of our countrymen now living whose skeletons, if preserved, would some day show highly vaulted bony palates, contracted alveolar arches, anterior protrusion of the upper jaws, the remains of unsound teeth, and abundant general signs of rickety bony framework. It was remarkable that Jewish children in the slums were superior to Christian children in physical development, which was due to the fact that the pregnant Jewess was better cared for, that 90 per cent. of the infants were fed on breast-milk, and that during later childhood they were abundantly fed on bone-making material. Eggs and oil, fish, fresh vegetables, and fruit entered largely into their diet. Yet the Jews had not been taught to safeguard their pregnant wives and to nourish their growing children by the instructors in the modern and costly State education which they were told at Oxford was to be at the root of everything. With the aid of friends he had given during the last two years 46,000 meals to poor council school children from the ages of three to 12 years and he had noticed the remarkable improvement in their physical development by the daily use of fresh antiscorbutic food. They had been fed for five days a week, not merely twice a week, as seemed to be thought sufficient by the London County Council.

Professor R. J. Anderson (Queen's College, Galway) remarked that he thought it would be a most important thing to secure a complete anthropometric survey of the whole of the British Isles. He doubted if improper food was the chief cause of physical deterioration, because, in his opinion, food had of late years greatly improved in quality. He thought that the clergy ought to do more than they did at present to improve the condition of the lower orders.

Mr. W. D. Spanton (Leeds) considered that the most prominent causes of physical degeneration were—efforts to rear premature and diseased infants, absurd educational high pressure, cigarette smoking in the younger generation, and late hours at night: in fact, the love of pleasure, and ergophobia in all classes of society. He considered that there was too much cheap philanthropy, that life was made too easy for the young poor, and that by modern educational methods proper parental discipline was rendered almost impossible.

Mrs. F. M. Dickinson Berry, M.D. (London), said that in her opinion children in London schools were not underfed so much as improperly fed, and that they preferred to eat bread and pickles, dried fish, &c., and had to be forced to eat a proper dinner. She quite endorsed Mr. Hall's remarks about Jewish children.

Dr. D. Chalmers Watson (Edinburgh) emphasised the importance of fresh facts being looked for from the standpoint of experimental medicine. He briefly referred to some results obtained in the course of an experimental investigation on diet carried out in the Physiological Laboratory of Edinburgh University, which showed the necessity of an extended investigation along lines calculated to determine the influence of different diets on the structure and functions of different organs and tissues of the body.

Dr. V. H. Rutherford (London) said that he was struck by the attacks which had been made on education and with which he could not agree. He recommended the more general teaching of hygiene and considered that the subject of proper feeding was most important, in which he included the use of alcohol, the abuse of which was a most potent factor in producing physical unfitness. He also urged the appointment of a Minister of Public Health with Cabinet rank.

The President of the section remarked that physical deterioration was often a mere matter of locality. In his district the development of children at the age of 13 years was better than it was 30 years ago but after the age of 13 the reverse was the case. This he attributed to the fact that the feeding of young children was better than it used to be, but after that age feeding was very irregular, and that excessive cigarette smoking and, to a lesser extent, drinking prevailed among the young men, while the young women spent on dress money which ought to be spent on food.

Dr. John Strachan (Dollar, N.B.) then read a paper on

"School Life as a Cause of Physical Degeneracy," and alluded to the undoubted increase of physical degeneracy and insanity in spite of the great improvements in sanitation and hygiene. He considered that this increase was due to high pressure in schools owing to the modern system of payment by results. Even though the admitted evils of the earlier arrangements for working the Education Acts had since been obviated by repeated changes in the code, yet he wished to point out that the men and women of the present day were the survivors of those who had in previous years been subjected to over-pressure and that many of them were the victims of physical deterioration. He considered that the fear of punishment had a very serious effect on the nervous organisation of children and recommended that the employment of either punishment or prizes as applied to brain work at school should be absolutely forbidden.

PSYCHOLOGICAL MEDICINE.

Wednesday, July 26th.

The proceedings commenced with the presidential address delivered by Dr. **Alexander Reid Urquhart** (Perth Asylum) on

The Heredity of Insanity.

A correct adjustment of the organism to the environment, physical, mental, and moral, constituted sanity and health. Statistics formed the basis of our knowledge of heredity, large numbers of observations having to be made to determine the laws which prevailed in the process of hereditary transmission from parent to progeny. Dr. Urquhart referred to the work of Francis Galton and Karl Pearson as affording much new light and then dealt at considerable length with a large and systematic series of genealogical tables collected by him in the last 20 years, illustrating various aspects of the question of the heredity of mental diseases and the neuroses.

A long discussion followed in which the following members took part: Dr. **T. B. Hyslop** (Bethlem Royal Hospital), Dr. **W. Lloyd Andriezen** (London), Dr. **Fletcher Beach** (London), Dr. **Arthur M. Jackson** (Notts County Asylum), Dr. **A. Clapham**, Dr. **A. T. Schofield** (London), Dr. **David Bower** (Gloucester), Dr. **T. Johnstone** (Leeds), Dr. **Robert Jones** (Claybury Asylum), and the **President** of the section who summed up various points and replied to queries.

Dr. **Schofield** then read a paper on the Extension of Psychology in Medicine, in which he urged the importance of the study of the subconscious mind as of the conscious mind in therapeutics and insanity.—The discussion was continued by the **President**, Dr. **Robert Jones**, Dr. **Hyslop**, and Mr. **James Stewart** (Clifton), after which Dr. **Schofield** replied.

A motion proposing that an appeal should be made to the Central Executive Committee to enable the Psychological Section (with the aid of a small fund) to carry out an inquiry into the heredity of mental disease as compared with the hereditary conditions prevailing in the sane population was carried and the meeting was then brought to a close.

OPHTHALMOLOGY.

Wednesday, July 26th.

The proceedings were opened by the **President**, Mr. **George A. Berry** (Edinburgh). Fifty years ago, he said, ophthalmology was revolutionised by such striking and important discoveries that it leapt at once into the front rank of scientific medicine. In recent years advance had been slower and had been confined principally to operative technique in the introduction of antiseptics and local anæsthetics. This comparatively slow advance was not due to there being nothing left to be found out or to the dearth of work and records in the subject, especially in pathological processes; it was rather due to the slowness of discovery in therapeutic measures and the difficulty of developing this work with due critical insight. Yet he believed the signs of the times were hopeful and he looked for the day when in many branches a rational medicine would eliminate a haphazard surgery.

Dr. **A. Bronner** (Bradford) read notes on a case of Slight Myopia in which distressing local and general symptoms were relieved by the use of glasses which were much too strong.

Mr. **E. E. Henderson** (London) gave the results of his researches into the Action of Influence of the size of the Pupil, as produced by eserine or atropine, on the circulation of fluids within the eye.

Mr. **N. Bishop Harman** (London) narrated the results of Electrical Treatment of Trachoma at the Middlesex Hospital. Mr. **C. Devereux Marshall** (London), Mr. **Cyril H. Walker** (Bristol), the **President** of the section, and Colonel **E. F. Drake-Brockman** (London) discussed the paper.

Mr. **Harman** read a paper on False Hay Fever, upon which Mr. **Devereux Marshall**, Dr. **Bronner**, and the **President** of the Section spoke.

Professor **Hess** (Würzburg) showed drawings illustrating Pigment Migration in Cephalopod Eyes.

Dr. **Karl A. Grossmann** (Liverpool) demonstrated by means of lantern slides numerous cases of Lepra Ophthalmica and also read notes on a case of Absence of the Dilator Muscles of the Iris and of Hot-air Cautery for use in Conical Cornea.

Mr. **Cecil E. Shaw** (Belfast) read notes of a case of Amblyopia, apparently toxic, following influenza.

LARYNGOLOGY, OTOLOGY, AND RHINOLOGY.

Wednesday, July 26th.

Dr. **F. W. Bennett** (Leicester) presided and delivered a brief address welcoming members to the section. A discussion on

The Lines of Treatment in Preventing Acute Middle-ear Suppuration from becoming Chronic

was opened by Dr. **W. Milligan** (Manchester) and Dr. **E. B. Waggett** (London). A paper was read on the same subject by Mr. **T. G. Owston**. The discussion was then resumed by Dr. **A. A. Gray** (Glasgow), Dr. **Atwood Thorne** (London), Mr. **T. Mark Hovell** (London), Mr. **R. Lake** (London), Dr. **W. Hill** (London), Mr. **L. A. Lawrence** (London), Dr. **W. Jobson Horne** (London), Dr. **J. Kerr Love** (Glasgow), Dr. **J. Dundas Grant** (London), Dr. **Herbert Tilley** (London), Dr. **J. Middlemass Hunt** (Liverpool). The **President** of the Section summed up the discussion and the openers replied.

Dr. **Gray** read a paper on the Pathological Conditions found in a Case of an Individual who had suffered from Deafness during Life.

Dr. **W. S. Syme** (Glasgow) demonstrated a Pair of Forceps for Operations on the Maxillary Antrum.

NAVY, ARMY, AND AMBULANCE.

Wednesday, July 26th.

Surgeon Lieutenant-Colonel **H. W. Kiallmark** (London) presided and an interesting paper was communicated to the section by Fleet Surgeon **C. M. Beadnell** on Some Dynamical and Hydrodynamical Effects of the Modern Small-bore Bullet, in which it was claimed that the so-called "explosive" effects of the modern bullet were due to sudden enlargement of the "impact area" resulting from a modification either in the form or in the motion of the projectile. Many of the "explosive" phenomena were due to such eccentricities of flight as the various "spinning-top" and "pirouetting" motions of the bullet.

Papers were read by Fleet-Surgeon **O. W. Andrews** on the Arrangements for the Treatment of Wounded in Action; by Fleet-Surgeon **T. Austen** on the Collection and Distribution of Wounded in a Modern Cruiser Engagement; and by Fleet-Surgeon **E. J. Biden** on the Headdress of Certain Ratings in the Navy.

THE ANNUAL EXHIBITION.

The accommodation provided for the annual exhibition at Leicester in the Drill Hall and Magazine-square, The Newarke, was not extensive but the exhibitors found sufficient space for their requirements. Compared with previous occasions the exhibition this year was smaller in scope, though it contained much to interest the medical profession. There were no striking departures in pharmaceutical applications or methods of administration and for the most part the exhibition of drugs was confined to the familiar advances of past years. There were, of course, a few exceptions. As regards the space taken up, special foods and drugs took a quite minor position in favour of surgical appliances, aseptic hospital furniture, and x ray and high-frequency apparatus. The show of motor-cars and accessories again presented little that was of direct interest to the medical man; he might have seen similar exhibits at any ordinary exhibition of motor-cars. The display of sanitary apparatus, if we except sterilising apparatus for hospital use, was restricted practically to disinfectants and filters but here and there were shown one or two examples of improved lavatory appliances.

In reviewing the exhibits we may adhere to the classification adopted in previous years. This year, however, we have thought it best to modify the order in which each section is taken in accordance with its magnitude. We propose, therefore, to take the various sections of the exhibition in the following order: (1) Surgical Instruments and Appliances; (2) Drugs; (3) Foods and Food Products; (4) Sanitary Appliances; (5) Mineral Waters, Beverages, &c.; (6) Publications; and (7) Miscellaneous.

I.—SURGICAL INSTRUMENTS AND APPLIANCES.

The section devoted to surgical instruments and appliances and special hospital fittings appeared on the whole to have a greater interest for the visitors than the other sections. At any rate, there was plenty to see in this section and altogether this class of article was a feature of the exhibition. Amongst makers of instruments and hospital appliances Messrs. Allen and Hanburys, Limited, of 48, Wigmore-street, Cavendish-square, London, W., occupied a fairly large share of the space at the disposal of the exhibition committee. They showed operation tables, one of phosphor bronze with Allen and Hanburys' patent mechanism for the Trendelenburg position attached and with hot water containers, douching funnel, and lithotomy stirrups with foot straps; and another provided with adjustable head-rest, the angle of the table being fixed by a sliding clamp. By means of a lever the ball-bearing steel-cupped rubber-tyred castors may be put in or out of action by a simple movement of the lever. Other operation tables were shown of excellent design which offer every convenience for securing satisfactory positions for the subject under operation. There were also shown a phosphor bronze aseptic instrument cabinet with plate glass shelves and bevelled glass door; a new aseptic table constructed to insure perfect cleanliness; a gas trolley carrying nitrous oxide and oxygen cylinders; an aseptic stand made of phosphor bronze for supporting reservoirs containing various lotions; and finally aseptic towel hangers, made again in that excellent material for the purpose, phosphor bronze. A very large assortment of surgical instruments was presented to view by Messrs. S. Maw, Son, and Sons of 7–12, Aldersgate-street, London, E.C. These comprised instruments for operations on the eye, ear, and nose, besides midwifery instruments, elastic gum catheters, and bougies. Attention was also directed at this stall to some sterilising apparatus for instruments and dressings, and to aseptic theatre furniture in German silver. As an example of a local firm exhibiting an excellent selection of surgical instruments and appliances of recent and approved design Messrs. Albert Brown of 3, Bowling Green-street, Leicester, claim mention. Messrs. James Woolley, Sons, and Co. of Victoria Bridge, Manchester, showed a number of novel appliances of interest both to the physician and the surgeon. Amongst these were the Rochester combination steriliser, an effectual and easily controlled apparatus for the purpose; an electrical apparatus by which the current from the main could be used in small lamps for the examination of the throat and nose; and, lastly, an adjustable truss known as the "Boval." The truss is provided with steel springs which are slotted to receive a specially constructed slide, by means of which a pad of any desired shape or size may be attached to a spring. The slide is so constructed that the spring may be expanded or contracted, whilst the pad may be set at almost any angle. Messrs. Croyden and Co., of 55, Wigmore-street, Cavendish-square, London, W., exhibited a number of specially made catheters, bougies, and special appliances for sterilising such instruments. The exhibit also included some illustrations of the "shadowgraph ureteric bougie." Clothing for the insane and a model of a padded room were the principal exhibits of Messrs. Pocock Brothers, of 235, Southwark Bridge-road, London, S.E. The padded room is provided with an aluminium gutter, a self-acting shutter, a protected door-hinge, and a self-acting and automatic door bolt for opening the door at any distance. Messrs. Isaac Chorlton and Co., of Blackfriars-street, Manchester, exhibited a number of special bedsteads, including mechanical beds, maternity beds, and beds for epileptic cases. In particular may be mentioned the surgical bedstead fitted with a self-elevator, a back rest with foot support, a bed table, fracture boards, an extension arrangement of foot-bar, and a telescopic adjustment for raising the foot end. Close by special bedsteads fitted with patent wire mattress were shown by the Longford Wire Company, Limited, of Warrington. Special hospital bedsteads comprise the exhibit of Messrs. John and Joseph Taunton, Limited, of Belgrave Works, Balsall Heath, Birmingham.

Messrs. R. H. Woodland, of 38A, Commercial-road, Eastbourne, Sussex, exhibited the "Eastbourne" invalid chair which presents many advantages where the conveyance of invalids is concerned. An interesting number of invalid and surgical appliances, including bed-pans, and operating and obstetrical cushions, were exhibited by the Seamless Rubber Company, who were represented by Messrs. Howison and Co. of 4, Snow-hill, London, E.C. The well-known Lawson Tait spring bedsteads for all kinds of invalid purposes were exhibited by Messrs. George Gale and Sons, Limited, of Dominion Works, Birmingham. The Dowsing Radiant Heat Company, Limited, of 24, Budge-row, Cannon-street, London, E.C., exhibited their apparatus for treatment by radiant heat and light, while Mr. C M. Holmquist of 57, Edgware-road, London, W., showed his "sunbeam" semi-reclining light bath, an electric vibrator, and a local bath for the radiant treatment of the limb or shoulder. Some recent improvements in surgical instruments were very well exemplified in the excellent assortment shown by Messrs. John Weiss of 387, Oxford-street, London, W., and Messrs. Lynch and Co. of Silver-street, Falcon-square, London, E.C., exhibited a variety of apparatus and appliances, including sterilisers, gynæcological and other operating instruments, as well as electrical and medical batteries. Messrs. Mayer and Meltzer, of 71, Great Portland-street, London, W., showed an excellent collection of surgical instruments, all made in accordance with recent surgical advance. The exhibit included a special operation-table designed by Mr. Stanley Boyd. Space precludes mentioning in detail the very large selection of surgical instruments of recent and approved design which was shown by Messrs. Arnold and Sons of 31, West Smithfield, London, E.C. Some excellent photographs were also shown illustrating the aseptic theatres fitted up by this firm. Messrs. Philip Harris and Co. of Birmingham exhibited their "perfectum" surgery cabinet which, in design, in completeness of equipment, and economy of space, leaves little to be desired. Messrs. T. Holland and Son of 40, South Audley-street, London, W., announced that they have just patented a new kind of support for flat foot. It is an improvement on the "instep arch sock" as regards strength, elasticity, and durability. Mention may also be made of the improved natural-shaped boots made by this firm.

A very interesting and comprehensive collection of hospital appliances was shown by the Holborn Surgical Instrument Company, Limited, of 26, Thavies Inn, Holborn-circus, London, E.C. A feature of the exhibit was a variety of sterilisers, amongst which may be mentioned in particular the Holborn high-pressure steam steriliser working at 250° F. It is not only a trustworthy apparatus for the sterilisation of dressings with dry steam but is compact and easily managed. Amongst the admirable assortment of surgical instruments and accessories shown at the well-arranged stall of Messrs. Down Brothers, Limited, of 21, St. Thomas's-street, London, S.E., were a "first-aid" box for use on motor-cars, an anæsthetic apparatus designed by various well-known chloroform administrators, aneurysm instruments, bullet forceps and probe guide, and other varieties of forceps. The exhibit included new and original designs of aseptic hospital furniture. The exhibit of the Medical Supply Association of 228, Gray's Inn-road, London, W.C., was made attractive by the demonstration of the Gaiffe-d'Arsonval machine for producing the x rays and high-frequency current directly from the electric main without any interrupter. The machine is exceedingly quiet and steady in operation and a very distinct advantage is tha by its means the quantity of current administered to th patient can be measured from day to day. The exhibi included the Gaiffe auto-motor mercury jet interrupte which appeared to us to work very satisfactorily an silently. A compressed air outfit for producing atomisation or vibratory stimulation was shown by Messr Smith and Wade of 20, Baker-street, London, W., as wa also the "Allison" combined examination couch, operating table, and cabinet. Messrs. W. Watson and Son of 313, High Holborn, London, W.C., exhibited a ne high tension transformer for producing x rays and high-frequency currents directly from an alternating current without induction coil or primary interrupter. The apparatus works beautifully steadily with the x ray tube. Orthopædic appliances and artificial legs formed the subject of exhibition at the stall of Messrs. C. A. Hoefftcke, Limited, 21, Woodstock-street, Oxford-street, London, W. The exhibit included an appliance for fractured leg, tuberculous hip and knee-joint, for paralysis, and walking appliances. Messrs. A. de St. Dalmas and Co. of Leicester showed a selection of excellent medical plasters and surgical bandages, while the Liverpool Lint Company of Mark-street Mills, Netherfield-road North, Liverpool, exhibited their surgeons' tow, absorbent cotton wool, and "impermiette" bed sheeting. Antiseptic wood wool tissue was shown by the Sanitary Wood Wool Company, Limited, of 26, Thavies Inn, Holborn-circus, London, E.C., as also were several antiseptic appliances of which wood wool is the basis. Mr. G. H. Zeal, of 82, Turnmill-street, London, E.C., exhibited a number of specially designed clinical thermometers of which the "Repello" was perhaps the most important departure. This thermometer has already been described in our columns and is made with a compressible glass bulb at the top by means of which the mercury column can be restored to its initial level. Messrs. Harry W. Cox, Limited, of 1A, Rosebery-avenue, London, E.C., are well known for the excellence of their apparatus for x rays and high frequency. In the annexe Messrs. Newton and Co. of 3, Fleet-street, London, E.C., exhibited an interesting collection of medical electrical apparatus including Wright's high tension resonance transformer. This transformer can be connected directly to the alternating main current, contact breakers being dispensed with. With the continuous current a small motor converter is necessary. The exhibit included a stereoscope and some microscopes and spectroscopes.

II.—DRUGS.

Continued attention is being given to the improvement of pharmaceutical preparations and while the bases of old formulæ are in the main adhered to the plan of combination in a great number of instances is more subtle, a greater compatibility is aimed at and those new forms of drugs are chosen the effects of which are more satisfactory. As examples may be quoted the tonic formulæ which have replaced the syrups in which the glycerophosphates are substituted for ordinary phosphates and a more suitable vehicle than sugar. The old Blaud pill again is a very different compound from the modern combination of sulphate of iron and carbonate of soda protected by an effectual envelope of sugar or gelatin against the deteriorating influence of the air. Modern exhibitions of drugs are now generally directed to the display of such improvements together with the advances that have been made in organo-therapeutic preparations and are thus of special interest to the practitioner. The drug section at the annual exhibition at Leicester was no exception though the number of the exhibits was comparatively small. As an example of the extension of the manufacturing chemists business to the preparation of biological remedies may be mentioned the firm of Messrs. Parke, Davies, and Co. of 111, Queen Victoria-street, London, E.C. On Stand 76 this firm showed lantern slides illustrating the preparation of serum and vaccines and the physiological testing of drugs, including the effect on the heart and the blood pressure of adrenalin, chloretone, digitalin, digitoxin, digitalis, and digitalone. Beside these there were exhibited medicine cases and chests and a series of elegant pharmaceutical preparations. Messrs. James Woolley, Sons, and Co., Limited, of Victoria-bridge, Manchester, showed, amongst other interesting preparations, two excellent ointments of perfectly uniform consistence—namely, unguentum resorcin co., useful for skin diseases, and unguentum seditavum, a soothing ointment containing zinc oxide and carbolic acid. A very comprehensive exhibit was that of Messrs. Wyleys, Limited, of Coventry, including the heroin compounds and several excellent syrups and liquors. We have already noticed the merits of formolyptol exhibited by Andrus and Andrus of 46, Holborn-viaduct, London, E.C. It is a pleasant, powerful, and yet non-poisonous antiseptic containing active balsamic agents with formaldehyde. The same firm exhibited hemaboloids, which is stated to be an organic combination of iron and the nucleo-proteids. The Bayer Company, Limited, of 19, St. Dunstan's-hill, London, E.C., exhibited a number of new compounds and synthetics. Amongst these may be mentioned in the form of tablets metakalin, a pure, readily soluble preparation of cresol; veronal, a comparatively new hypnotic, saloquinine, an analgesic; mesotan, an external application in rheumatism and aspirin a substitute for the salicylates. The Angier Chemical Company, Limited, of 32, Snow-hill, London, E.C., exhibited specimens of their emulsion of petroleum with hypophosphites. It would appear that petroleum is not absorbed by the system but the hydrocarbon acts as an excellent vehicle, exerting an antiseptic, sedative, and demulcent action on the intestinal membrane. Messrs. Arthur and Co. of Ogle-street, London, W., made once more a point of their bromaurum used in the treatment of neurasthenia. The preparation is regarded as a direct nerve tonic and is said to be remarkable in subduing pain of long standing. A number of new preparations was shown at the stall of Messrs. Burgoyne, Burbidges, and Co. of 12 and 16, Coleman-street, London, E.C. Amongst these were colloidal calomel, "salit," a fluid containing salicylic acid, and novargan, a silver preparation with strong bactericidal properties and used in gonorrhœa. Messrs. Philip Harris and Co., Limited, of Birmingham had a very interesting display of pharmaceutical preparations, including suprarenalin solution, bactericidal soap, pencils of iodoform, and a series of concentrated mixtures compiled from the formulæ of the pharmacopœias of the London hospitals. Besides palatinoids of various animal substances, Messrs. Oppenheimer, Son, and Co., Limited, of 179, Queen Victoria-street, London, E.C., exhibited "metramine" palatinoids. Metramine is described as a purified form of hexamethylenetetramine which is said to be an excellent antiseptic for the genito-urinary tract, splitting up in the urine into formic aldehyde and ammonia and so rendering it both alkaline and antiseptic. There was also exhibited the now well-known vaporiser and aeriser of this firm. Messrs. C. J. Hewlett and Son of 35 to 42, Charlotte-street, London, E.C., exhibited a number of pharmaceutical preparations of decided merit. Such were, for example, their pepsine and bismuth mixture, their bromide compound and a linctus, and their linimentum betulæ co. containing amongst other things the active principle of oleum betulæ and camphor. Besides these there were a number of admirably prepared antiseptic compounds and an emollient cream. We have already drawn the attention of our readers to the milk of magnesia which was exhibited by the Charles H. Phillips Chemical Company of 14, Henrietta-street, Covent-garden, London, W.C. It is, of course, a powerful antacid and does not disengage gas on being neutralised. It is practically tasteless and incidentally is an excellent cleansing agent for the teeth. Local pharmacy was well represented at the stall of Messrs. T. Howard Lloyd and Co., the exhibit including medicine chests and cases, soluble coated pills, and a number of elegant pharmaceutical preparations. Lastly, Messrs. H. and T. Kirby and Co., Limited, of 14, Newman-street, London, W., exhibited the new synthetic aperient purgen besides a selection of tablets of compressed drugs, soft glycerine lozenges, pearl, gelatine, and sugar-coated pills, and some pleasant, besides effective, antiseptic preparations.

Medical News.

UNIVERSITY OF LONDON.—At examinations held in July the following candidates were successful:—

M.D. EXAMINATION.

Medicine.—William Fraser Annand, B.S., University College; Emile Dupont Aubin, B.S., Middlesex Hospital; William Henry Bailey, St. Bartholomew's Hospital; Elizabeth Honor Bone, B.S., London (Royal Free Hospital) School of Medicine for Women; Arthur Bousfield, B.Sc. (University medal), King's College; Archibald Douglas Hamilton, St. Thomas's Hospital; Percival George Harvey, B.S., St. Bartholomew's Hospital; Francis Riley, B.S., Westminster Hospital; and Edward Allan Wilson, B.S., University of Leeds.

Pathology.—Robert Henry Elliot, B.S., St. Bartholomew's Hospital.

Mental Diseases and Psychology.—Christine Mary Murrell, B.S., London (Royal Free Hospital) School of Medicine for Women.

Midwifery and Diseases of Women.—Mildred Mabel Burgess, London (Royal Free Hospital) School of Medicine for Women; Clement Woodthorpe Chaplin, London Hospital; Victor Evelyn Collins, Guy's Hospital; Thomas Henry Harker, St. Bartholomew's Hospital; Carlton Oldfield, B.S., University of Leeds; and Richard Horace Paramore, St. Bartholomew's Hospital.

State Medicine.—Francis Dawson Blandy, Middlesex Hospital and Victoria University; and Harold Tipping, University College and Guy's Hospital.

M.S. EXAMINATION.

Thomas Holmes, M.D. (University Medal), Guy's Hospital.

A meeting of the Faculty of Medicine was held on July 18th, Dr. J. K. Fowler, the dean of the faculty, being in the chair. The chairman announced that Dr. Lauriston E. Shaw had, in consequence of his election to the Senate, resigned the honorary secretaryship of the faculty. A vote of thanks to Dr. Shaw for his services during the past five years having been carried, it was resolved to postpone the election of a successor until the October meeting. A committee on teaching and research in the "advanced" subjects of the curriculum—viz., those subjects studied after passing the intermediate examination—presented an important report. The report contained proposals for the development of research in pathology, pharmacology, and clinical subjects and made suggestions for grouping the lectureships in subjects such as hygiene, forensic medicine, and mental diseases. The report also dealt with the question of securing funds for the support of medical education and the manner in which such funds should be allocated to different institutions and different subjects. In the final section of the report the committee made recommendations as to the periodical inspection by the University of the medical schools and the recognition by the Senate of practical work done by students in the wards and laboratories of the schools as counting towards the results of the final examinations. The report was amended by the faculty and adopted for presentation to the Senate. The faculty approved a report from the board of dentistry upon additional teaching required in London upon comparative odontology, the pathology of the teeth, and the mycology of the mouth. Resolutions were passed indicating the procedure approved by the faculty relating to theses for degrees in medicine and surgery. The regulations proposed by the Board of Advanced Medical Studies for candidates desiring to take the degree of M.D. in tropical medicine were considered and approved.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations in July the following candidates passed in the subjects indicated:—

Surgery.—H. J. Aldous (Section I.), King's College Hospital; and G. M. Seagrove (Section I.), St. Bartholomew's Hospital.

Medicine.—G. N. Biggs (Section I.), St. Thomas's Hospital and Durham; V. H. Blake (Sections I. and II.), St. George's Hospital; J. L. Meynell (Section I.), London Hospital; L. W. Roberts, Middlesex Hospital; L. Sells (Sections I. and II.), St. Thomas's Hospital; and E. W. T. Watts (Sections I. and II.), Royal Free Hospital.

Forensic Medicine.
V. H. Blake, St s Hospital and Durham;
Hospital; L. Sel M. Magill, Royal Free
Royal Free Hospital. ; and E. W. T. Watts,

Midwifery.—E. M. Magill, Royal Free Hospital; O. C. H. L. Moll, Guy's Hospital and Durham; A. R. Paterson, Calcutta; C. A. K. Renshaw, Cambridge; N. A. Stutterheim, Utrecht; E. W. T. Watts, Royal Free Hospital; W. H. Williams, Cambridge and St. Bartholomew's Hospital; and R. M. Wingent, Guy's Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—V. H. Blake, A. R. Paterson, C. A. K. Renshaw, L. W. Roberts, and L. Sells.

LONDON SCHOOL OF TROPICAL MEDICINE.—At the examination at the close of the eighteenth session the following were successful:—

J. T. C. Johnson* (colonial service), E. R. Stitt*, D. Mackinnon* (colonial service), F. E. Wood* (colonial service), Miss Commissariat, W. L. M. Goldie (colonial service), J. S. Smith (colonial service), S. G. Allwood, E. V. Croker (colonial service), A. R. Wellington, E. Hopkinson (colonial service), J. T. Waite (colonial service), W. D. Inness (colonial service), N. Beaumont (colonial service), H. G. Waters, and T. E. F. Toovey (colonial service).

* With distinction.

VICTORIA UNIVERSITY OF MANCHESTER.—At the examination for the diploma in Public Health the following were successful:—

G. G. Buckley, O. H. Chapman, C. W Crawshaw, James Howard, and W. C. Rigby.

UNIVERSITY OF LEEDS.—At a Congregation held on July 22nd the degrees of Bachelor of Medicine and Bachelor of Surgery were conferred on the following:—

Robert Garside Dixon, Harold Fearnley, Alfred Gough, George Herbert Hustler, Thomas Edmund Lister, and Frederick Whalley.

The following are notified as having passed the earlier examinations for the same degrees:—

Final examination.—Part I.:
Hackworth, Digby Wrangha uthbert
Second examination.—Part I leed.
Harold Butler, Horace Lanc William
Frobisher, Sydney Milverton Hepworth, Martin
Keswick, Guy Annesley Mitchell, George Colin Henderson Nicol, John Barton Thompson
Bernard Charles Piercey, and Harold Vallow.

First examination.—Whole examination: William Shaw, Reginald Eccles Smith, and John Norman Lonsdale Thoseby. Part I. only: Israel Lewis Sinson.

UNIVERSITY OF ABERDEEN.—The following degrees and diploma have been conferred:—

Degree of Bachelor of Science (B.Sc.).—Hector Robert Adam, Aberdeen (with special distiuction in chemistry); Agnes Valentine Baxter, M.A., Brechin; and James Alexander Hendry, M.A., Keith.

Degree of Doctor of Medicine (M.D.).—William Johnston Dewar, M.B., C.M., Arbroath (under old regulations); *Francis Grice-Jones, M.B., C.M., Denbigh (under old regulations); †George Grant Macdonald, M.A., M.B., Ch.B., London Hospital; James Thornton Macpherson, M.B., C.M., Manchester (under old regulations); ‡John Stewart Milne, M.A., M.B., Ch.B., Hartlepool; ‡George Mitchell, M.B., Ch.B., Aberdeen; *Herbert Leith Murray, M.B., Ch.B., Dundee; *Alex. Charles Profeit, M.B., C.M., Ballater (under old regulations); and †Alex. Christie Reid, M.A., M.B., Ch.B., B.Sc., Nottingham.

Degree of Master of Surgery (Ch.M.).—†John Alex. Mackenzie, M.A., M.B., Ch.B., Oldham Infirmary.

Degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) (New Ordinances).—James Milner Adams, M.A., Aberdeen; William Campbell, Bucksburn, Aberdeen; Alexander McRobbie Donaldson, Portknockie; Robert Reid Duncan, Bervie; Richard Eager, Winterbourne, Bristol; Francis William Falconer, Aberdeen (passed Final Examination, April, 1905); William Manson Fergusson, Banff; George Johnston Forgie, Longside; Reginald Arthur Forster, Burton-on-Trent; George Hall, M.A., Macduff; Alexander Walker Laing, Manchester; James McIntosh, Aberdeen; James Mackenzie, Aberdeen; Kenneth Mackinnon, Stornoway, Lewis; George Milne, Fyvie, by Oldmeldrum; John Alexander Milne, Portknockie; Harry Ross Neilson, Glass, Huntly; Paul Bernard Roth, Enfield; Robert Fergusson Russell, Aberdeen; James Silver, Gargunnock; Charles Mollyson Smith, Aberdeen; John Herbert Stephen, Fraserburgh; Isaac Frederick Bernhardi de Villiers, French Hoek, South Africa; Frederick Hamilton Welsh, Umtata, Cape Colony; Cristina Wilson, Aberdeen; and Douglas Alexander Wood, Sittingbourne.

Note.—Charles Butchart Gerrard has passed all the examinations but will not graduate until he has attained the necessary age.

Diploma in Public Health.—Donald John Gair Johnston, M.B., Ch.B. Aberd., Inverness; Alexander McRobbie, M.B., Ch.B. Aberd., Aberdeen; and §George Alexander Mavor, M.A., M.B., Ch.B. Aberd., Aberdeen.

* Commendation for thesis. † Honours for thesis
‡ Highest honours for thesis. § With credit.

QUEEN'S COLLEGE, BELFAST.—Among the prizewinners at the class examinations held at the close of the summer session were the following:—

Botany.—William Willis Dalzell Thomson, William Dickey, John James Gilmore, James Stuart Bellas, Albert Victor Craig, and William Hamilton.

Practical Biology.—William Willis Dalzell Thomson, James Stuart Bellas, Samuel Campbell, William Dickey, and Bertram Chiene Letts.

Practical Chemistry.—Senior: John Seymour. Junior: Thomas Hunter Bellas and Alexander Patton.

Chemical Laboratory.—Ormsby William Moore.
es Robert Harvey, Samuel M'Cormac,

Ferguson Shepherd, Charles Robert Harvey, and Samuel M'Cormac.

Practical Pharmacy.—Caroline Joanna Crawford, John Benjamin Crawford, John Blacker Aickin, and Henry Herbert MacWilliam.

Thomas Carnwath, B.A., M.B., has been elected to one of the research scholarships given by H.M. Commissioners of the Exhibition o 1851. The value of the scholarship is £150 per annum.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bologna:* Dr. Romeo Mongardi of Turin has been recognised as *privat-docent* of Diseases of the Ear and Throat.—*Breslau:* Dr. Garré of Königsberg has been appointed to the Charge of the Surgical Clinic and Dr. F. Sauerbruch has been recognised as *privat-docent* of Surgery.—*Copenhagen:* Dr. O. A. Saunte has been recognised as *privat-docent* of Ophthalmology.—*Freiburg:* Dr. Paul Clemens has been promoted to an Extraordinary Professorship of Internal Medicine.—*Groningen:* Dr. P. C. Romkes has been recognised as *privat-docent* of Gastro-intestinal Diseases.—*Halle:* Dr. Oswald Baumgarten has been recognised as *privat-docent* of Internal Medicine, and Dr. Arthur Menzer, formerly of the Berlin Charité, has also been recognised as *privat-docent* of that subject.—*Königsberg:* Dr. W. Scholtz has been promoted to the Extraordinary Professorship of Dermatology, vacated by the resignation of Dr. Caspary.—*Leipsic:* Dr. Braun has been promoted to an Extraordinary Professorship of Surgery.

LITERARY INTELLIGENCE.—The Oxford University Press announces that the second part of the second supplement to the Index Kewensis will be ready immediately. This supplement covers the period 1896 to 1900. In the original work the genera and species of flowering plants from the time of Linnæus to 1885 were enumerated, and the first supplement carries on the list to 1895.

Royal College of Surgeons in Ireland: Fellowship Examination.—The following candidates having passed the necessary examination have been admitted Fellows of the College: Mr. J. Campbell, L.R.C.P. & S.I., and Mr. W. J. Mullin, M.B., B.Ch. New Zealand.

King's College Hospital—Opening Ceremony.—The next session will commence on Tuesday, Oct. 3rd, when Professor T. Clifford Allbutt will distribute the prizes and give the opening address on Medical Education in London. The address will be given in the large theatre at King's College at 3 P.M. The annual dinner of old students of King's College Hospital will be held at 7 o'clock on the same evening at the Hotel Cecil when Mr. Arthur A. Napper will preside. Tickets may be obtained from the honorary secretaries: Dr. Percy G. Lewis, 22, Manor-road, Folkestone; Major M. Percy Holt, D.S.O., R.A.M.C., King's College Hospital; Dr. J. F. W. Silk, 47, Devonshire-street, Portland-place, London, W.; Mr. Albert Carless, 10, Welbeck-street, London, W.; and Dr. John Charlton Briscoe, 110, Harley-street, London, W.

The Study of Meteorology.—With the object of advancing the general knowledge of meteorology the council of the Meteorological Society has appointed a lecturer who is prepared to deliver lectures on meteorological subjects—e.g.: How to Observe the Weather, Weather Forecasting, Climate, Rainfall, Thunderstorms, Meteorology in Relation to Agriculture, Health, &c. The lectures will be illustrated by lantern slides from a large collection in the possession of the society. Societies and institutions wishing such lectures will be expected to pay a moderate fee and to defray travelling expenses. Lantern slides can also be obtained on hire from the council of the society which is willing to arrange for exhibiting at the gatherings of local scientific societies, institutions, or schools a collection of photographs, drawings, diagrams, and charts illustrating meteorological phenomena, and of various patterns of instruments used for meteorological observations. It will also, if desired, lend and fit up a complete climatological station for exhibition, showing the necessary instruments in position and ready for use. Further particulars can be obtained from the Assistant Secretary, Royal Meteorological Society, 70, Victoria-street, S.W.

University of Oxford: Pathology Endowment Fund.—In connexion with the Fund which has been started with the object of obtaining suitable endowment for the chair of pathology in Oxford, and which already exceeds the sum of £2000, the following address was presented to the University on June 20th by a deputation from the Oxford medical graduates:—

Address to the Chancellor, Masters, and Scholars of the University of Oxford.

We, the undersigned, members of the University of Oxford, feeling the keenest interest in the welfare of medical education at our University, desire to draw your attention to the action which has been taken by a large number of the Oxford graduates in medicine.

We believe that, although Oxford cannot successfully enter into competition with the metropolis and other large centres for the purpose of clinical teaching, the scientific training of the medical student can be most efficiently carried out in the University, and as a part of the curriculum we consider that the scientific aspect of pathology and bacteriology, as distinct from morbid anatomy, should be permanently provided for at Oxford. This object can only be attained by an endowment, which will secure permanent provision for the teachers of pathology, and for the maintenance of the excellent laboratory the University already possesses. In order to promote such endowment, a meeting of Oxford medical graduates was held upon December 20th, 1904, and the following resolution was passed: "That with a view to showing the strong feeling the Oxford medical graduates have of the necessity for promoting the study and teaching of pathology, a fund be started for the purpose of assisting in this object, and that it be primarily for the establishment and endowment of a professorship in pathology." In accordance with this resolution a "Pathology Endowment Fund" has been started.—We have the honour to be,

Your obedient Servants,
W. S. Church, M.A., D.M., Hon. D.Sc.,
Chairman of Executive Committee.

Followed by the names of 164 Oxford medical graduates.

BOOKS, ETC., RECEIVED.

International Journal of Surgery Co., 100, William street, New York.

The Surgical Assistant. A Manual for Students, Practitioners, Hospital Internes, and Nurses. By Walter M. Brickner, B.S., M.D., New York City. Price $2.00.

Jack, T. C. and E. C., Edinburgh, and 34, Henrietta street, London, W.C.

The Edinburgh Stereoscopic Atlas of Anatomy. Edited by David Waterston, M.A., M.D., F.R.C.S.E., F.R.S.E., Lecturer and Senior Demonstrator in the Department of Anatomy, Edinburgh University. Section II. Contents—50 Plates (Abdominal Wall, Inguinal Region, Abdominal Cavity, Viscera, Abdominal Aorta, Pelvis, Bladder). Prepared under the control of the Department of Anatomy of the University of Edinburgh. Price of each of the five Sections, £1 5s. net.

Stuber, A. (C. Kabitzsch), Wurzburg.

Beiträge zur Klinik der Tuberkulose. Herausgegeben von Dr. Ludolph Brauer, A.O. Professor an der Universität Marburg, Direktor der Medizinischen Poliklinik. Band IV. Heft 1. Einzelpreis M.4.50.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The University of Sheffield and its Representation on the General Medical Council.

An amendment has been made in the Sheffield University Bill to provide that the fees for attendance and the travelling expenses of a member payable under section 12 of the Medical Act, 1858, shall not be paid from the funds of the General Medical Council or of the Branch Council for England until such time as, upon the representation of the General Medical Council or of the Privy Council, made in the manner set forth in sections 10 and 19 of the Medical Act, 1886, and subject to the provisions therein contained, His Majesty may by order in Council appoint.

HOUSE OF LORDS.

Thursday, July 20th.

Physical Deterioration.

A long debate on this subject took place on the initiative of the Bishop of Ripon and the Duke of Devonshire. The right reverend prelate called for further inquiry on the subject of infant mortality and the Duke of Devonshire suggested an anthropometric survey with a view to the collection of definite data bearing upon the physical condition of the population as recommended in the report of the Committee on Physical Deterioration.—On behalf of the Government the Marquis of Lansdowne repudiated the imputation of indifference in regard to the matter and stated that the whole question would be further inquired into by a Royal Commission.

HOUSE OF COMMONS.

Wednesday, July 19th.

Diphtheria in Poor-law Schools.

Sir Walter Foster asked the President of the Local Government Board whether, in view of the outbreak of diphtheria at the Norwood Poor-law schools which had extended to 61 children, notwithstanding the care and skill taken for its prevention, he would consider the advisability of breaking up this aggregation of 500 children in accordance with the recommendations of the departmental committee's report of 1897.—Mr. Gerald Balfour answered: It appears to be doubtful whether there can properly be said to have been an outbreak of diphtheria at these schools in the sense in which that expression is ordinarily understood. I am informed that only three of the cases presented the ordinary clinical symptoms of the disease and that in the remaining cases there had been no disturbance of the children's health, although the bacillus of diphtheria or some other bacillus resembling it had been discovered by bacteriological methods. It does not seem to be necessary to consider the advisability of breaking up the school.

Tuberculosis.

Mr. Morrell asked the President of the Board of Agriculture whether the Royal Commission on Tuberculosis had reported, or would shortly report, on the effect produced, or disease set up, by introducing into the body of the bovine animal material containing living tubercle bacilli of human and bovine origin respectively through the alimentary canal as distinct from the effect when introduced by subcutaneous injection and whether he would urge an early report on the third clause of the reference, viz., under what conditions, if at all, the transmission of the disease from animals to man took place and what were the circumstances favourable or unfavourable to such transmission as affecting food for man.—Mr. Gerald Balfour answered: As I stated in my reply to the honourable Member for the Eastern division
understand that the Royal Commission
report towards the end of the present
report will contain details of the differ
methods of infecting bovine and other animals with tube
from different sources, but I understand that some considerable time
must elapse before the Commission can issue a report dealing with the
third clause of the reference to it.

Thursday, July 20th.

Missing State Papers.

Mr. MacVeagh asked the Secretary of State for the Colonies whether his attention had been called to the statement of Sir Fleetwood Wilson at the War Stores Commission to the effect that the cause of the disappearance of the missing papers was that a rat got into the store in which the papers were kept, and that the medical officer ordered the destruction of the papers in order to prevent a plague; whether the medical officer's report was verbal or written; and whether he could communicate the details to the House.—Mr. LYTTELTON replied: The details in connexion with the matter referred to have already been communicated to the House in reply to a question put by the honourable Member for South Donegal on Feb. 8th, 1904, to which I have nothing to add.

The Nursing of the Sick Poor in Workhouses.

Mr. TALBOT asked the President of the Local Government Board whether his attention had been drawn to the condition of the nursing of the sick poor in the workhouses, especially in those which contained only a small number of such inmates; what action had been taken in accordance with the recommendations of the departmental committee which reported on this subject in November, 1902; and whether he could give an assurance that early steps would be taken to carry out those recommendations.—Mr. GERALD BALFOUR answered: After the report of the departmental committee was issued a considerable number of representations were received by the department in connexion with the recommendations of the committee and an order dealing with the subject is in preparation.

Malta Fever.

Mr. YERBURGH asked the Secretary to the Admiralty whether he would state the number of men invalided from Malta fever annually for the ten years from 1895 to 1905 and whether any medical inquiry into the cause of Malta fever had been instituted.—Mr. PRETYMAN answered: A committee, including representatives of the Navy, Army, and Colonial services, has been making inquiry since June, 1904, into the causation and life-history of Malta fever, under the directions and auspices of the Royal Society. Much valuable information has been gained and has been published in interim reports which hold out strong hopes of this fever being in the future more successfully grappled with than in the past. The number of men invalided is as follows:—

Year.	Number of invalids.	Year.	Number of invalids.
1897*	191	1902	250
1898	149	1903	209
1899	68	1904	191
1900	188	1905	(return not yet complete).
1901	163		

* First year in which Mediterranean fever was shown in the reports as a distinct heading.

Vaccination Defaulters in Scotland.

Mr. WEIR asked the Lord Advocate whether he would state the number of prosecutions of vaccination defaulters in Scotland during the current year and for each of the last five years.—The LORD ADVOCATE replied: The information which would enable me to answer the first part of the hon. Member's question is not yet procurable. The prosecutions for the five years ended June 30th, 1904, are—for 1900, 59; for 1901, 103; for 1902, 56; for 1903, 82; and for 1904, 73.

TUESDAY, JULY 25TH.

Small-pox in Belfast.

Mr. JOSEPH DEVLIN asked the Chief Secretary for Ireland whether he was aware that a recrudescence of small-pox was threatened in Belfast and that the corporation refused, contrary to the especial custom, to supply its aid to the ratepayers except where an outbreak occurred in an applicant's house or where an order from a medical man or inspector was presented; and whether he would in the interest of the health of the city cause representations to be made to the corporation in this matter.—Mr. LONG answered: A case of small-pox occurred in Belfast on June 23rd and the Local Government Board is informed that all necessary precautions to prevent the spread of the disease have been taken. The patient was removed to the small-pox hospital and the other inmates to the reception house for isolation, the house was disinfected, the bedding, &c., burned, and revaccination freely administered in the neighbourhood. No further case has been reported. The Board has no information that the corporation has refused to take necessary measures for the protection of the public health.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BREWER, ALEC H., M.R.C.S., L.R.C.P. Lond., has been appointed Anæsthetist to the Samaritan Free Hospital for Women.

EARLY, R. A., L.S.A. Lond., has been appointed Medical Officer and Public Vaccinator for the Weston-super-Mare District of the Axbridge Union.

FRAMPTON, TREVETHAN, F.R.C.P., M.R.C.S., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

HANCOCK, W. J., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Stalybridge District of the county of Chester.

HILL, R. A. L., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Wimbledon District of the county of Surrey.

LAPAGE, C. P., M.D. Vict., has been appointed Medical Officer to the Out-patient Department of the Manchester Children's Hospital.

MCGAVIN, LAWRIE H., F.R.C.S. Eng., has been appointed Surgeon to the In-patients on the Staff of the *Dreadnought* Hospital, Greenwich.

PATERSON, MARCUS S., M.B., B.S., M.R.C.S., L.R.C.P., has been appointed Medical Superintendent of the Brompton Hospital Sanatorium, Frimley, Surrey.

SWAINSON, G. M. G., F.R.C.S., has been appointed Assistant Surgeon to the North-Eastern Hospital for Children, Hackney-road.

THOMAS, L. KIRBY, M.R.C.S., L.R.C.P. Lond., has been appointed Anæsthetist to the Birmingham and Midland Hospital for Women.

TYLECOTE, FRANK EDWARD, M.D. Vict., has been appointed Medical Registrar to the Manchester Royal Infirmary.

WESTERMAN, ARTHUR, M.D. Aberd., has been appointed Medical Officer to the City of London and East London Dispensary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ALDERSHOT URBAN DISTRICT COUNCIL.—Medical Officer of Health and Superintendent of the Isolation Hospital. Salary £300 per annum (being £275 as Medical Officer of Health and £25 as Medical Superintendent of the Isolation Hospital, &c.)

BATH ROYAL UNITED HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with board, lodging, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Senior and Junior Resident House Surgeons. Salaries £100 and £80 respectively, with fees.

BOURNEMOUTH, ROYAL VICTORIA HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

BRISTOL ROYAL INFIRMARY.—Resident Junior House Surgeon and Anæsthetist. Also Resident Casualty Officer. Salary at the rate of £50 per annum, with board, lodging, and washing.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

DOUGLAS, ISLE OF MAN, NOBLE'S ISLE OF MAN HOSPITAL AND DISPENSARY.—Resident House Surgeon, unmarried. Salary £90 a year, with board and washing.

EDINBURGH, UNIVERSITY OF.—Professor of Midwifery.

LANCASTER, ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, attendance, and washing.

LEICESTER INFIRMARY.—Two Assistant House Surgeons for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

LONDON LOCK HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

MACCLESFIELD, CHESHIRE COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £140, rising to £160, with apartments, board, and washing.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, E.—Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer. Salary at rate of £60 per annum, with board, residence, and washing.

ROXBURGH DISTRICT ASYLUM, Melrose, N.B.—Assistant Medical Officer. Salary £140 per annum, with board, rooms, &c.

ST. MARK'S HOSPITAL FOR FISTULA, &c., City-road, E.C.—Junior Anæsthetist. Salary £25 per annum.

ST. MARYLEBONE, PARISH OF.—District Medical Officer. Salary commencing £90 per annum.

SALOP INFIRMARY, Shrewsbury.—House Surgeon. Salary £100 per annum, with board, washing, and residence.

SHEFFIELD ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £65 per annum, with board, lodging, and washing. Also Junior House Physician. Salary £60 per annum, with board, lodging, and washing.

STRAITS SETTLEMENT, MUNICIPALITY OF THE TOWN OF SINGAPORE.—Assistant Municipal Health Officer, unmarried. Salary £400 per annum.

YORKSHIRE, WEST RIDING COUNTY COUNCIL.—Assistant to County Medical Officer. Salary £250 per annum, rising to £400.

Births, Marriages, and Deaths.

BIRTHS.

ANDERSON.—At Pitlochrie, Perthshire, on July 23rd, the wife of John Anderson, M.B. & C.M. Edin., of a daughter.

GIBSON.—On July 24th, at 6, College-terrace, Hampstead, N.W., the wife of H. W. Gibson, M.B., of a son.

WATSON.—On July 20th, at the Oriel House, Leigh, Essex, the wife of W. Douglas Watson, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

YOUNG.—At The Glebe, Hamilton, on July 21st, the wife of J. Murray Young, M.B., of a son.

MARRIAGES.

DIXON—BOKENHAM.—On July 19th, at the parish church, St. Mary's, Hanwell, George Edwin Dixon, M.D., to Marie K. H. Bokenham, eldest daughter of William Henry Bokenham of St. Vincent Lodge, Hanwell, Middlesex.

FOULKES—FISCHER.—On July 20th, at the Portsea parish church, Captain Thomas Howard Foulkes, F.R.C.S., Indian Medical Service, to Bertha, second daughter of Colonel Bowness Fischer, late Indian Staff Corps.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

IMPERTINENT ADVERTISEMENT.

WE have received from Messrs. J. Samuda and Co., Limited, a letter, not intended for publication, offering to reply in the following terms to our recent criticisms of their methods: "On the off chance of your being prepared to allow me this privilledge (*sic*), I am writing you to state that I am prepared to write an answer providing you give me a written undertaking to publish the same without alteration or any comment in the issue in which my letter would appear." Messrs. Samuda and Co.'s letter, which, of course, contains the amiable suggestion that if the firm had been an advertiser in our columns no remarks about its methods of doing business would have been published, concludes as follows "One naturally expects criticism if one tries to catch or do the public, but one does not feel it is necessary to protect themselves (*sic*) in carrying on a purely legitimate business." Messrs. Samuda and Co., Limited, are evidently very cross at our expressed opinion that the offer to supply medical men with cigars at a low price so that medical men may recommend these cigars to their patients is impertinent and objectionable. They do not appear to see that the medical profession naturally resents the suggestion that its members should be transformed into touts *for the sale of tobacco. We have no objection whatever to Messrs* Samuda and Co. trying to obtain a market for their wares so long as they do not insult the medical profession in their endeavours, and we have no ill feeling towards the firm as they allege, even though they have brought a vulgar accusation of corruption against us. But the situation is so absolutely clear that we do not think that Messrs Samuda and Co. will be able to alter it by any letter of protest. We cannot, of course, promise to publish their communication until we have seen it and if we do publish it we cannot promise to abstain from correcting any misstatements in it. With regard to publishing "the same without alteration" as Messrs. Samuda and Co. would bind us to do, are they quite prudent in depriving themselves of the assistance of our proof-readers in the matters of grammar and spelling?

A NURSE-INSPECTOR OF SCHOOLS.

To the Editors of THE LANCET.

SIRS,—"L.R.C.S., &c.," sends an instructive letter. Perhaps the following may also be of interest. A school boy was brought to me by his mother with a lacerated wound over the right eyebrow. The wound, which had been dressed by the boy's teacher, was not doing well. My examination revealed (*a*) no attempt to secure apposition of the cut edges, (*b*) a clot interposing which had become septic. The mother, being annoyed at the careless dressing, complained to the head mistress. This lady's comment was that she was sure her teachers could dress an ordinary wound equal to any doctor. It appears that here, in Bethnal Green (with the sanction of the County Council which supplies the dressings), all teachers who hold the St. John Ambulance certificate are allowed to do a medical man's work.

I am, Sirs, yours faithfully,
L.S.A.

"AN AUTHORISED BONESETTER."

THERE is a person named Blackbourn who appears to have selected Lincolnshire as a field for his exploits, who advertises himself by handbill as the "authorised bonesetter" to unions of fishermen, firemen, sailors, dockers, and railway hands, and who publishes a testimonial from the guardians of the Spilsby union. The value of testimonials obtained from sufferers is known to all the world, the patient being, as a rule, violently grateful when the treatment has had nothing to do with the result. But a board of guardians is in a different position and one that ought to enable it to be more critical. Hence we are surprised to find the Spilsby guardians authorising their clerk to write a testimonial for a quack, while we wonder how far those who have thus made themselves responsible for a sort of popular and official approval of the said quack's methods have any first-hand knowledge of the circumstances.

A RECIPIENT OF MANY DEGREES.

WHO is the most favoured recipient of honorary degrees at the hands of various universities? There is no need in replying to this question to speculate upon the amount of complimentary degrees held by, say, Lord Lister or Lord Kelvin. These and all other likely candidates for seniority are, we believe, beaten right out of the field by "John Hopkins." Every time that Professor Osler, for example, the ex professor of medicine in the famous Baltimore University, received a complimentary degree John Hopkins of Baltimore scored equally, becoming (at any rate in British newspapers) a D.Sc., a D.C.L., and a five barrelled LL.D. Now that Professor Halsted, professor of surgery in the same University, is being honoured by the Royal College of Surgeons of Edinburgh, John Hopkins is having an honorary Scottish degree conferred upon him by quite a large section of our press, and we are sure that he has similarly obtained credit for many honours obtained by other professors at the Johns Hopkins University. We think that it is getting time that the existence of the Johns Hopkins University at Baltimore should become more obvious to some of our journalists, for it really is rather a well-known institution.

HEALTHY COSTUME FOR GIRLS.

To the Editors of THE LANCET.

SIRS,—I think that "B A." would find the information he requires in some of the recent numbers of the *Dress Review* and in one or two of the pamphlets published by the Healthy and Artistic Dress Union, which can be obtained from the honorary secretary of the union, Miss Maude A. Biggs, 3, Alexandra road, South Hampstead, N.W., who would, I am sure, be pleased to answer any questions on the subject.

I am, Sirs, yours faithfully,
July 25th, 1905. R.

To the Editors of THE LANCET.

SIRS,—In reply to "B A." as to the healthiest way of clothing his daughter, aged 14 years, I suggest the following as allowing perfect freedom for the limbs with sufficient warmth. A thin all wool garment extending from the neck to just below the knees to be worn next to the skin, this should be very thin with short sleeves during the summer and medium weight and long sleeves during the winter. A "maid's" corset, with shoulder straps made of stout jean and slightly shaped, this buttons down the front, lacing behind, and has no whalebone or steels. Dark-blue drill knickers should be worn which *button to the lower edge of the corset. The last garment is a petticoat* of striped Oxford shirting with calico bodice which in the winter may be made of Scotch wincey and thin flannel respectively. These clothes should be all changed and washed weekly. It may be noticed that there is no weight on the hips or about the waist, everything hanging from the shoulders. Thin cashmere stockings, reaching well above the knee, and thicker ones for the winter, should be kept up by elastic suspenders from the corset. I am, Sirs, yours faithfully,
July 22nd, 1905. K.

A WARNING.

To the Editors of THE LANCET.

SIRS,—May I draw the attention of your readers to a man, aged from 40 to 45 years, about 5 feet 6 inches in height, with close-cut grey hair, clean shaven fat cheeks, and rather watery eyes, dressed in dark grey lounge suit and a black bowler hat? He says he is travelling in dressings, &c., and reports himself as an old medical student of the Owens College and Durham who has been in Australia for many years. He gives the name of Warren and is not safe to leave alone. He called on me four years ago and left with a hypodermic outfit and is now at his old practices again. I am, Sirs, yours faithfully,
Sloane street, S.W., July 21st, 1905 W. W. WOOLLISCROFT

Inkberrow.—Perhaps our correspondent can give us fuller information, we do not know the substance.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.).

TUESDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (2nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.) Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.).

THURSDAY (3rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.).

FRIDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

TURDAY (5th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic) A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the ntral London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed exclusively "To THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1905, which was completed with the issue of June 24th, and the Title-page to the Volume, were given in THE LANCET of July 1st.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1905 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.* To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are :—

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 27th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
July 21	30 03	S.W.	...	109	79	62	63	69	Cloudy
" 22	30 00	S.W.	...	135	83	63	64	69	Fine
" 23	29 87	S.W.	...	117	72	64	63	64	Raining
" 24	29 95	N.	0·23	119	76	60	53	62	Cloudy
" 25	29 93	W.	...	123	80	60	62	67	Fine
" 26	30 02	W.	...	129	84	65	66	71	Cloudy
" 27	29 95	E.	...	109	75	66	64	71	Cloudy

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The Croonian Lectures

ON

THE CHEMICAL CORRELATION OF THE FUNCTIONS OF THE BODY.

Delivered before the Royal College of Physicians of London on June 20th, 22nd, 27th, and 29th, 1905,

BY ERNEST HENRY STARLING, M.D. LOND., F.R.S.,
FELLOW OF THE COLLEGE; JODRELL PROFESSOR OF PHYSIOLOGY, UNIVERSITY COLLEGE, LONDON.

LECTURE I.

Delivered on June 20th.

THE CHEMICAL CONTROL OF THE FUNCTIONS OF THE BODY.

MR. PRESIDENT AND GENTLEMEN,—From the remotest ages the existence of a profession of medicine, the practice of its art and its acceptance as a necessary part of every community have been founded on a tacit assumption that the functions of the body, whether of growth or activity of organs, can be controlled by chemical means; and research by observation of accident or by experiment for such means has resulted in the huge array of drugs which form the pharmacopœias of various civilised countries and the common armamentarium of the medical profession throughout the world. The practice of drugging rests on the supposition that the functions of the body can be influenced in a normal direction by such means. I propose in these lectures to inquire how far such a belief is consonant with our own knowledge of the physiological workings of the body, how far, that is to say, the activities and growth of the different organs of the body are determined and coördinated among each other by chemical substances produced in the body itself but capable of classification with the drugs of the physician. If a mutual control, and therefore coördination, of the different functions of the body be largely determined by the production of definite chemical substances in the body, the discovery of the nature of these substances will enable us to interpose at any desired phase in these functions and so to acquire an absolute control over the workings of the human body. Such a control is the goal of medical science. How far have we progressed towards it? How far are we justified in regarding its attainment as possible?

I hope to be able to vindicate to you the assumption which is at the basis of medical practice and to show that the activities of, at any rate, the large majority of the organs of the body are coördinated among themselves by the production and circulation of chemical substances, so that the results of physiological researches up to the present justify us in the faith that within a reasonable space of time we shall be in the possession of chemical substances which are normal physiological products, and by means of which we shall be in a position to control not only the activities but also the growth of a large number of the organs of the body.

In man and the higher animals the marvellous adaptations effected by means of the central nervous system are so much in evidence that physiologists have been tempted to ascribe every nexus between distant organs to the intervention of the nervous system; the more so because by this means an adaptation to changes, internal or external, can be effected in many cases within a fraction of a second. But in the evolution of life upon this earth this method of adaptation is of comparatively late appearance and is confined almost entirely to one division of living beings—i.e., the animal kingdom. In the lowest organisms, the unicellular, such as the bacteria and protozoa, the only adaptations into the mechanism of which we can gain any clear insight are those to the environment of the organism and in these cases the mechanism is almost entirely a chemical one. The organism approaches its food or flies from harmful media in consequence of chemical stimuli; it prepares its food for digestion or digests it by the formation of chemical substances, toxins or enzymes. In the lowest metazoa, such as the sponges, there is still no trace of any nervous system. The coördination between the different cells of the colony is still determined by purely chemical means. The aggregation of the phagocytic cells round a foreign body is apparently due to the attraction exerted on them by the chemical substances produced in the death of the injured tissues.

With the appearance of a central nervous system or systems in the higher metazoa the quick motor reactions determined by this system form the most obvious vital manifestations of the animal. But the nervous system has been evolved for quick adaptations, not for the abolition of the chemical correlations which existed before a nervous system came into being. A study of the phenomena of even the highest animals shows that the development of the quick nervous adaptations involves no abrogation of the other more primitive class of reactions—i.e., the chemical ones. Where the reaction is one occupying seconds or fractions of a second the nervous system is of necessity employed. Where the reaction may take minutes, hours, or even days for its accomplishment the nexus between the organs implicated may be chemical. Already we are able, in many cases, to prove the existence of such a chemical nexus and to employ it in artificially producing a state of growth or activity which is in normal circumstances merely a phase in a complex series of physiological changes.

The chemical reactions or adaptations of the body, like those which are carried out through the intermediation of the central nervous system, can be divided into two main classes—(1) those which are evoked in consequence of changes impressed upon the organism as a whole from without; and (2) those which, acting entirely within the body, serve to correlate the activities, in the widest sense of the term, of the different parts and organs of the body.

The first class of adaptations includes those reactions of the body to chemical poisons produced by bacteria or higher organisms and represents one of the most important means by which the body maintains itself in the struggle for existence. The complicated phenomena involved in the formation of antitoxins, of cytolysins, of bactericidal substances, and such like means of protection, have been the subject of much study of recent years and their immediate interest to the practical physician renders it unnecessary for me to devote any time to their discussion, especially as the subject is one to which I have not given any personal attention. The investigation of the second class, that of the correlation of the activities of organs, has by reason of its greater obscurity, or of the greater difficulty of its practical application in medicine, fallen largely to the province of the physiologist and I therefore propose to deal almost exclusively with those members of this class of reactions which have so far been definitely ascertained.

Before, however, entering into details of any particular correlation it may be profitable to consider what we may expect to be the nature of the substance which will in any given case act as a chemical nexus between different organs. We are dealing here with a question of general pharmacology. As Ehrlich has pointed out, the chemical substances which act on the body or parts of the body, producing physiological or pharmacological effects, can be divided largely into two main groups. Ehrlich's conception of the first group is bound up with his conception of the nature of the living protoplasmic molecule as a living nucleus with side chains of various descriptions. Assimilation of foodstuffs consists in the linking on of the food molecule as a fresh side chain to the central nucleus. The common feature among the substances of the first class is their close resemblance to an assimilable substance or foodstuff. All these substances acquire a close attachment to, or even identification with, the living protoplasm, and as a rule their effects are apparent only after sufficient time has elapsed for their building up into the protoplasmic molecule. To this class belong the numerous substances closely allied in their chemical character to the proteids which are designated as toxins. All are produced by the agency of living organisms. I need only adduce as examples the various products of the pathogenic bacteria, such as diphtheria and tetanus, the poisonous toxins of higher plants, such as ricin and abrin, and those formed as a weapon of offence by higher animals, such as the active principles of the various snake venoms. According to Ehrlich, these all resemble assimilable foodstuffs in that they possess a haptophore group by which they can anchor themselves on to the living molecule, becoming thus part of its side chains. The toxophore group thus introduced into the living molecule upsets and disorganises its reactions, leading by disorder of one or more functions to the death of

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the animal. In most cases the toxophore group, at any rate, is specific for some definite tissue or type of cell. Thus tetanotoxin exercises its effect almost entirely on the peripheral sensory neurones. It is doubtful, however, whether the haptophore group is so specific, if we are to accept Ehrlich's conception of the mode of formation of antitoxins; since we may get formation of antitoxins in animals where the toxic effect is entirely wanting.

The idea that these toxins ape the part in the protoplasmic molecule of an assimilable foodstuff does not involve as a necessary sequence the formation of antitoxins or antibodies to the normal foodstuffs. That, in fact, the power of assimilation is independent of the power to produce antibodies has been shown by van Dungern in a research specially directed to determine this point. This observer found that the proteids of crabs' blood could be injected into the blood stream of the rabbit and undergo assimilation. Being proteids foreign to rabbits' blood their injection provoked the production in the latter of a precipitin for crabs' blood plasma, but the assimilation of the proteid and the production of the precipitin were found to be absolutely independent phenomena.

The first group therefore of pharmacological substances may be defined as substances presenting many points of resemblance to proteids, potent like enzymes in infinitesimal doses, and giving rise as a result of their introduction into the body to a reaction consisting in the production of an antibody.

Ehrlich's second group of substances, which includes practically all our common drugs, probably act on the protoplasmic molecule or part of it by reason of their chemico-physical properties or their molecular configuration. It is difficult to give a more definite expression of their mode of action. We know that in many cases slight changes in the molecule, such as the introduction or withdrawal of an ethyl, methyl, or NH_2 group into or from a drug or group of drugs, alter their physiological actions in a regular manner. We know, moreover, that substances of the most diverse constitution, such as the various anæsthetics, may have little more than their fat solvent powers in common. All these drugs, however, are more or less stable compounds, generally to be obtained in a crystalline form and not easily destroyed by heat. On introduction into the body the incubation period of their physiological effects is generally determined only by the time necessary for their distribution to, and their diffusion into, the cells which they chiefly affect. Although repeated doses of them can set up a certain degree of tolerance, in no case is there any evidence of the formation of a physiological antidote or antitoxin to the poison.

To which of these two groups of bodies must we assign the chemical messengers which, speeding from cell to cell along the blood stream, may coördinate the activities and growth of different parts of the body? The specific character of the greater part of the toxins which are known to us (I need only instance such toxins as those of tetanus and diphtheria) would suggest that the substances produced for effecting the correlation of organs within the body, through the intermediation of the blood stream, might also belong to this class, since here also specificity of action must be a distinguishing characteristic. These chemical messengers, however, or "hormones" (from ὁρμάω, I excite or arouse), as we might call them, have to be carried from the organ where they are produced to the organ which they affect by means of the blood stream and the continually recurring physiological needs of the organism must determine their repeated production and circulation through the body. If they belong to the first class and are analogous to the toxins, each production of a given substance and its discharge into the blood stream must give rise to the formation of a specific antibody, which must increase in amount with each production of the substance in question and tend therefore to neutralise its physiological effects. It might be suggested that in the case of these chemical messengers the formation of an antibody was a local one and limited to the organ affected and that, in fact, their physiological effect—e.g., secretion—was actually a pouring out of the antibody to the chemical messenger. But, as we shall see later, experimental evidence is entirely against this view, which, moreover, is not supported by any known instance of a similar localisation of antibody as a result of injection into the organism of any of the substances which belong definitely to the toxin class. The formation of antibodies appears, in fact, to be not a process of value in the normal physiological life of the organism but one which has been evolved as a chemical means of defence to prevent the spread of injurious substances from the spot originally affected or attacked.

We are therefore forced to the conclusion that if the processes of coördination of activities among the organs of the body are carried out under physiological conditions to any large extent by chemical means—i.e., by the despatch of chemical messengers along the blood stream—these emissar substances must belong to Ehrlich's second order of substances acting on the body and must, in fact, fall into th same category as the drugs of our Pharmacopœia. Among these, indeed, specificity is not wanting and is the basis o their classification by pharmacologists. Thus we have drug elevating or depressing the activity of the nervous system we can excite secretion in all the glands of the body b pilocarpin; we can stimulate and finally paralyse th præganglionic nerve endings of the sympathetic system by the injection of nicotine, or arouse the anabolic mechanism of the heart by the administration of digitalis. In all these cases we are certainly interfering with normal processes The methods, however, which we employ are not at variance with those made use of by the body itself in securing the harmonious coöperation of its various parts.

In discussing the internal chemical reactions of the body it will be convenient to divide them into two classes—viz., those which involve (1) increased activity of an organ, and (2) increased growth of a tissue or organ. In both cases we must assume that the reaction to the chemical stimulus is itself chemical, the first class including, however, those changes which are chiefly katabolic or dissimilative and are always associated with activity, and the second class involving diminished katabolism and increased building up or anabolism. We might, in fact, speak of the two classes of chemical stimulants as augmentor and inhibitor.

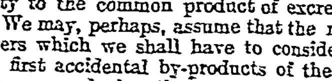
Reactions involving Increased Activity of Organs.

The most striking because the simplest of this class of reactions is that which determines in higher animals the adequate supply of a contracting muscle with oxygen and removal of its chief waste product, carbon dioxide. The increased depth and frequency of respiration contingent on muscular exertion are familiar to everyone and we know that the physiological object of such changes is to secure the increased ventilation rendered necessary by the enormous rise of gaseous metabolism which accompanies muscular exercise. Even moderate work may raise the gaseous exchanges to between four and eight times their amount during rest. This increase in the respiratory movements is entirely involuntary and may, in its earlier stages, when affecting chiefly depth of respiration, be absolutely unnoticed by the subject of them. How is the respiratory centre aroused to an increased activity which is absolutely proportional to the increased metabolism of the distant muscles? A nervous path is at once excluded by the fact that hyperpnœa or even dyspnœa may be excited in an animal after division of the spinal cord by tetanisation of the muscles of the hind limbs and Zuntz and Geppert came to the conclusion that the exciting agent in this increased activity was some acid substance or substances produced by the contracting muscles and transmitted from them through the blood stream to the respiratory centre. The subject has been lately investigated in this country by Haldane and Priestley. In a series of masterly experiments these observers show conclusively that the chemical messenger in this case is none other than carbon dioxide. The contracting muscle, when properly supplied with oxygen, takes up this gas and gives out carbon dioxide in direct proportion to the energy of its contractions. The carbon dioxide diffusing rapidly into the blood stream raises its percentage and, what is still more important, its tension in this fluid. The respiratory centre differs from the other parts of the central nervous system in having developed a specific sensibility to carbon dioxide. Its normal activity is determined by the normal tension of this gas in the blood and lymph bathing the centre. Diminution of the tension of this gas depresses the activity of the centre, causing slackening of respiration or even the total cessation of respiratory movements known as apnœa.

This work by Haldane may be regarded as finally deciding a question which has been the subject of debate for nearly half a century. The dyspnœa caused by the circulation of venous blood through the brain and by the deprival of the respiratory centre of the means of maintaining its normal gaseous interchanges has been variously attributed either to oxygen starvation or to carbon-dioxide intoxication of the centre. Haldane shows that the centre is very little sensitive to changes in the oxygen tension of the blood. The oxygen tension in the pulmonary alveoli may be altered from 20 per cent. to 8 per cent., without any increase in the depth or frequency of the respiratory movements. In these circumstances the heart or circulatory system may feel the deprivation of oxygen before the respiratory centre has responded to it. On the other hand, a rise of only ½ per cent. in the tension of carbon dioxide in the alveolar air and therefore in the blood circulating round the respiratory centre will increase the volume of air respired 100 per cent.

This simplest of all examples of a coördination by chemical means of two widely separate organs may, perhaps, give us a clue to the mode in which the more complex of such correlations have been evolved. In this case the chemical messenger is a product of activity which is common to all protoplasm and must be excreted by the cell as a condition of its further activity. The special adaptation in this case therefore is not the formation of a special substance which shall exert a specific influence on some distant organ but the development in this distant organ of a specific sensibility to the common product of excretion of the first organ. We may, perhaps, assume that the more specialised messengers which we shall have to consider in detail later were at first accidental by-products of the selfish activity of the organ producing them, the first step in the development of a correlation being the acquisition of a sensibility to the substance in question by some distant organ.

The only other example of such a reaction, in which we know both the source and nature of the chemical messenger and the exact nature of the effects which it produces, is the suprarenal gland. Since the time of Addison we have known that atrophy of these glands in man leads to a disease characterised by the three cardinal symptoms of bronzing, vomiting, and extreme muscular weakness. Most of the attempts to reproduce this disease in animals have failed, owing to the fact that death follows the excision of both glands within 24 hours; the extreme muscular weakness is certainly produced, and this is attended by a profound fall in the general blood pressure. In 1894 Oliver and Schäfer showed that from the medulla of the suprarenals a substance could be extracted which, on injection into the circulation, caused marked rise of blood pressure and increased strength of the heart beat. Since the publication of these observations our knowledge on the nature and actions of this substance has progressed rapidly. The researches of Jowett in this country, of Abel in America, and of von Fürth in Germany, have shown that the active substance is a definite chemical compound derived from pyrocatechin and having the formula—



Takamine, by the elaboration of a method for its preparation from the gland in a state of purity, has placed in the hands of the druggist a means of supplying the substance in bulk to the medical profession for therapeutic purposes. The exact knowledge of the constitution of adrenalin thus acquired has paved the way for the actual synthetic formation of this substance. Here, again, there has been a keen international rivalry and the credit of its synthesis must be divided between this country and Germany. It is gratifying that the only original investigation of the subject which has yet been published as a contribution to science is the admirable account by Dakin of his synthesis not only of adrenalin but of a whole array of substances which are closely allied to this body in their chemical structure as well as in their physiological influence on the animal organism.

In order to comprehend the point of attack of adrenalin, the specific secretion of the medullary part of the suprarenal glands, we shall do well to go back to the mode of development of these organs. It was shown by Balfour that the suprarenals have in the fœtus a twofold origin, the cortex being derived from the mesoblastic tissue, known as the intermediate cell-mass, while the medulla is formed by a direct outgrowth from the sympathetic system, and consists at first of an aggregation of neuroblasts. In some animals—e.g., teleostean fishes—the two parts of the gland thus formed remain separate throughout life, but in the higher vertebrates the sympathetic outgrowth becomes surrounded by the cortex and the cells rapidly lose all traces of resemblance to a nerve cell. But the medulla is genetically part of the sympathetic system, and its specific secretion, adrenalin, has an action which is apparently confined to the sympathetic system. In whatever part of the body we test the effects of adrenalin we find that they are identical with the results of stimulating the sympathetic nerve fibres which run to that part. Thus, in all the blood-vessels of the body adrenalin causes constriction; the contraction of the heart muscle is augmented, the pupil is dilated, while the intestinal muscle, with the single exception of the small ring of muscle forming the ileo-colic sphincter, is relaxed. The action of the sympathetic on the bladder differs, as shown by Elliott, markedly in various animals; but, whatever its effect, a similar one will be produced in the same animal by the injection of adrenalin. I have already mentioned that excision of the suprarenal bodies causes a profound fall of blood pressure, which continues until the death of the animal, and it has been stated that when this fall is well established it is impossible to raise the blood pressure by stimulation of the splanchnic nerve or, indeed, to produce any effect at all on stimulation of the sympathetic nerve. Thus not only does adrenalin excite the whole sympathetic system in its ultimate terminations but its presence in the body as a specific secretion of the suprarenal bodies seems to be a necessary condition for the normal functioning, by ordinary reflex means, of the whole sympathetic system. We are dealing here with a problem which, betraying, as it does, an intimate relationship between nerve excitation and excitation by chemical means, promises by its solution to throw a most interesting light on the nature of the nerve process and of excitatory processes in general.

Our knowledge of certain other members of this group of chemical reactions is so shadowy that a mere mention of them will suffice. As an antithesis to the vaso-constrictor action of adrenalin we find that every organ when active is supplied with more blood in consequence of a vaso-dilatation of the vessels which supply it. In certain instances Bayliss and I have found that boiled extracts of organs when injected into the circulation may evoke vaso-dilatation of the same organs of the animal under investigation and we have suggested that the normal vaso-dilatation accompanying activity is brought about in consequence of the specific sensibility of the arterial walls to the metabolites of the organ which they supply. Too much stress, however, cannot be laid upon these experiments since a more extended series by Swale Vincent has failed to give a general confirmation of our results.

The severe diabetes which, as shown by Minkowski, can be produced in nearly all animals by total excision of the pancreas has been held to denote the normal production in this organ of some substance which is indispensable for the utilisation of carbohydrates in the body. All efforts to obtain a more exact idea of the nature of this pancreatic substance or influence have so far proved in vain. Ordinary sugar, when placed in contact with extracts of muscular tissues, undergoes oxidation; and Cohnheim states that this process is much accelerated if an extract of pancreas be added to the extract of muscle. A repetition of Cohnheim's experiments by other observers has shown that the effect is so small as to be almost accidental; and we must therefore regard the nature of the pancreatic influence on carbohydrate metabolism and the causation of pancreatic diabetes as problems still to be solved.

So far (except in the case of the muscle—respiratory centre reaction) we have been dealing with isolated phenomena occurring in different parts of the body in which the reaction affects a whole series of tissues. The chemical stimulus in these cases might be considered analogous to alterations in the composition of the surrounding medium and the reactions lack that definite and localised character which we have learnt to regard as distinguishing the adaptations or reflex actions brought about by the intermediation of the central nervous system. We have now to discuss the mechanism of a whole series of chemical reactions where this feature of a nervous reaction is not wanting, so that, in fact, the reactions, up to quite recently, were regarded as undoubtedly nervous in character. I refer to the chain of processes in the alimentary canal by which the secretion of one juice succeeds that of another as the food progresses along this tube. This series of reactions may well form the subject of a separate lecture.

Lectures

ON

CARBOHYDRATE METABOLISM.

A Course of Advanced Lectures in Physiology, delivered at the University of London,

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LECTURE III.[1]

GENTLEMEN,—Absorbed from the alimentary canal and utilised in the tissues, how does carbohydrate pass from one locality to the other without giving evidence of its transit through the circulation by the filtering action occurring in the kidney? This is the problem that we have now to consider, and I think it will be found that we need not go further than the seat of absorption to meet with its solution. Let us closely examine the operations that can be shown to be here taking place.

We have seen that the object of digestion in preparing food for absorption is to break down the large molecular constituents of it and thus carry them from the colloidal into the diffusible state. It was formerly considered that this is all that is requisite, absorption being regarded as taking place in compliance with the laws of osmosis. The effect of modern research, however, is to show that it is by the instrumentality of cell action instead of by physical osmosis that the products of digestion pass into the system. Waymouth Reid by means of a number of well-devised and carefully conducted experiments has demonstrated that the integrity of the intestinal epithelium is necessary for the proper procedure of absorption. In the concluding paragraph of a paper on Intestinal Absorption of Solutions[2] he says, with reference to glucose, "it appears from a study of the absorption of weak solutions of glucose that, with the intestinal membrane as normal as the experimental procedure will permit, phenomena present themselves which are as distinctly opposed to a simple physical explanation as are those previously studied in the absorption of serum." Selective action has even been shown to be exerted in the absorption of salines and sodium chloride has been found to be taken up in a manner that can only be accounted for by special cell appropriation.

Absorption by cell action may be said to mean bioplasmic incorporation. The absorbed material passes into, and becomes a component of, the living matter. In other words it is assimilated or made to form a part of bioplasm in process of growth. Now, for bioplasmic growth it is requisite for the molecules which are taken on to be of appropriate configuration to become attached to the large and complex biogenic molecules of which they are to form a part. In the absence of the proper configuration they remain untouched, or otherwise expressed, fail to be assimilated. Thus, in the process of digestion, not only is it necessary that large molecules should be broken down into small ones to give the property of diffusibility for the sake of penetration but also that the molecules produced should be of such construction as to be adapted to unite with those into which they are intended to become incorporated. It is the province of the enzymes supplied by nature to bring about this adaptation and unless it is brought about there can be no combination. Saccharose molecules, for instance, have not the requisite conformation for being taken on by the biogenic molecules of protoplasm and unless there were enzyme action to put them into the state of monosaccharide they would remain untouched and simply be absorbed and pass through the system unchanged.

What I have said about preparation by enzyme action for being taken on by bioplasm applies to each of the food principles—proteid, carbohydrate, and fat. They all undergo breaking down into a molecular form suited to enter into combination with the bioplasm with which at the seat of absorption they are brought into contact. This having been accomplished the process that follows is one that may be designated bioplasmic growth and to this I will now direct attention.

Examination of the small intestine, the chief seat of absorption of the products of digestion, reveals a mucous membrane provided with an immense number of small projecting processes known as the villi. Each villus is provided with an epithelial covering and in the central part lymphoid tissue containing lymphocytes and capillary blood-vessels. The lymphoid tissue, a meshwork of intercommunicating spaces, gives origin to a vessel or vessels constituting an initiatory component of the lacteal system. The superficial epithelial cells and the lymphocytes met with in the lymphoid tissue are the structures which, I think, I shall be able to show play an all-important part in connexion with the absorption of nutrient matter.

The epithelial cells belong to the columnar type. In the fasting state they are seen to be characteristically of this form and to present a granular appearance with a well-defined central nucleus. In the actively absorbing state they may undergo alteration. Many of them may be observed to have lost their columnar form and to have assumed more or less of a spheroidal shape. They at the same time become charged with fat which is visible in very various-sized globules and granules. In this state the cell may present a close resemblance to the secreting cell of the liver which also is concerned with fat production. I entered into this subject in my "Physiology of the Carbohydrates, 1894," under the head of Transformation of Carbohydrate Matter into Fat, p. 245 *et seq.*, and gave photo-engravings to illustrate from the rabbit the fatty condition assumed by the villus cell after the ingestion of starchy food consisting of oats. Many of the cells were literally gorged with fat. At the present moment I will not follow this question further. Let it suffice to say that in connexion with the bearings of fat it is specially the epithelial cells of the villus that are concerned.

We now come to a component of the villus which I look upon as playing a most important rôle in connexion with the train of phenomena associated with the passage of food to service in the economy. I refer to the lymphocytes which are present in the lymphoid tissue belonging to the parenchyma of the villi and likewise in the submucous lymphoid tissue throughout the intestinal tract. They constitute small actively growing and proliferating cells which greatly increase in number during the period of absorption of food. Kölliker[3] as far back as the middle of the last century writing about them said: "While digestion is going on, we frequently find the whole parenchyma of the villi densely filled with nuclei, here and there surrounded by cell membranes [lymphocytes are evidently meant], elements which are, perhaps, never entirely absent in a *villus* but are at other times far fewer." It is only in connexion with the small intestine that this special condition is found. Both in the case of the stomach and large intestine a marked difference exists, no more lymphocytes being visible than may be seen in lymphoid tissue elsewhere.

Recently the lymphocyte question in relation to food has been looked at from another point of view. Many workers have been giving close attention to the corpuscular elements of the blood and a branch of study has been established which has already yielded much valuable knowledge and gives promise in the future of yielding more. When reaching the blood, as may be considered their natural course to do, they fall into the generic group that has long borne the name of leucocytes. In former times but little was known about this group of bodies but latterly by staining and improved manipulative procedure for microscopic examination means of differentiation have been afforded and different kinds of leucocytes are now enumerated. The lymphocyte is easily distinguishable from the other leucocytes and thus it can be made the subject of study in relation to varied bodily conditions. Now, by the counting observations that have been conducted it has been found that the blood undergoes considerable alteration with respect to the number of lymphocytes present as a result of the effect of food.

From the concurrent testimony of many observers it may be looked upon as a settled point that the lymphocytes become greatly increased in number in the blood after the ingestion of food. They show a continuous rise up to about the fourth or fifth hour and then a more or less rapid fall.

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[1] Lectures I. and II. were published in THE LANCET of June 24th (p. 1704) and July 1st, 1905 (p. 4).

[2] Journal of Physiology, vol. xxviii., 1902.

[3] Manual of Human Histology, Sydenham Society Translation, vol. ii., p. 98.

Gulland[4] speaks of the total number of lymphocytes per cubic millimetre having been found to have been increased by from 3000 to 11,000. This must mean a large accession of proteid matter to the blood as a result of food absorption. From 3500 to 4000 per cubic millimetre is mentioned as ving constituted the ordinary starting point before food. ariable rates of increase are given by others but the eneral admission is that a very notable increase occurs. he condition, in fact, is of a sufficiently established nature o have received the designation of digestion lymphocytosis. his flow of lymphocytes into the blood naturally means, as have already said, a great accession to it of proteid matter. ohl[5] has given the calculation, which I may mention without expressing any opinion as to the value one way or the ther to be attached to it, that 15 grammes represent the mount of proteid that may thus reach the blood after a meal.

Lymphocytes consist of proteid and proteid contains locked-up carbohydrate. In this way lymphocytes become mixed up with carbohydrate metabolism. There is no doubt about the lymphocytes reaching the blood as a sequence to the absorption of food. Examination of the blood obtained by a needle prick through the skin suffices to demonstrate the connexion. Prevailing ideas however, regarding the mode of transit stand in a very tangled state. Looking at the perfection of the arrangement which nature has provided for the purpose it is strange that this should be so. Until some 30 years ago the lacteal system was regarded as constituting the channel for the transport of the absorbed nutrient matter from the alimentary canal into the blood, just as the general absorbent system was looked upon as conveying the unutilised portion of the pabulum that ad escaped from the blood-vessels into the lymph spaces for he nourishment of the tissues. The confusion, I think, lates from Schmidt-Mülheim's work[6] in which the thoracic uct was ligatured and the urinary nitrogen elimination after nitrogenous food estimated and compared with that found in instances where the duct was free. According to the results given no essential difference was discernible. It would be out of place here to discuss this matter but I have looked into it and do not see that it by any means conclusively establishes the deduction that has been drawn and that has driven physiologists in seeking for something else to take refuge in what I feel may be spoken of as the impossible.

As a substitute for the view allocating the passage of the lymphocytes to the lacteal tract it has been suggested—and the idea carries credence at the present time—that they reach the circulation by traversing the walls of the capillary vessels. Even in the most recent work we find observers looking in the mesenteric veins for the lymphocytes produced in the villi. Could there be any conception more opposed to physical laws? Picture a lymphocyte, constituted as it is, passing from a lymphoid lacuna through the walls of a capillary against the pressure existing within. It is intelligible for leucocytes to pass through, as is known they do, in the opposite direction under the influence of the capillary blood pressure existing, just as mercury may be forced through the pores of chamois leather, but to traverse a membrane with pressure in operation against them seems o me to be nothing short of an impossibility. Presumably, it may be further said that even with proteid molecules the same governing factors bring about a corresponding result. Because under the capillary pressure, and apparently in proportion to it, proteid passes from the vessels into the lymph which bathes the tissue elements, it does not follow that it should be possible for the reverse to occur, or, in other words, for the proteid that has escaped nutritive appropriation in the lymph spaces, wherein there exists a lower pressure than in the capillaries, to pass back in a direct manner into the blood.

It is not disputed that lymph corpuscles are to be found in the contents of the lacteal vessels but it is considered that they have not been found in sufficient quantity to account satisfactorily for the digestion lymphocytes that reach the blood. There is a point in connexion with looking for them that appears to me not to have received proper attention, at all events I have never seen it alluded to. In the process of coagulation the lymphocytes become entangled in the coagulum in the same manner as occurs with the corpuscles of the blood, and the place to look for them is hence in the coagulum and not in the fluid. I am in the habit of preventing coagulation by the employment of a little citrate of potash and thus the examination is rendered much easier. The fact of lymphocytes being discoverable within the lacteal system affords proof that transport through this channel occurs. I can state from my own observation that they are to be found throughout the different parts of the lacteal system. It is not difficult to obtain chyle for microscopic examination that is on its way to the mesenteric glands and I can distinctly assert that lymphocytes are recognisable in it. They appear to be more numerous after the glands have been traversed. If lymphocytes are to be found passing along nature's channel it shows that this track is in actual use for the purpose, and hence it follows that any other mode of transit would be simply supplementary instead of one of absolute necessity. Now, seeing that the imaginary supplementary transit stands totally in antagonism with physical laws, can it for a moment be allowed to retain the position it at present holds? The granules constituting the molecular base of chyle and likewise fat globules pass. Of this there can be no possible doubt. Why, then, should there be any question existing with regard to the lymphocytes? The channel is more than sufficiently capacious to meet what is wanted for their passage and if some passed why should not all do so?

The flow through the lacteals is greatly increased at the digestion period. Although the contrary may have been asserted, yet in reality the matter does not admit of dispute. At a period of full fasting the vessels are not to be seen and are probably in a more or less completely empty state with attendant stasis. During active digestion and absorption, on the other hand, they stand out conspicuously and when incised give immediate exit to an abundant flow of chyle. In harmony with this state the villi are more prominent and loaded with lymph corpuscles. Notwithstanding former denials it may be considered that present-day work is in accord with this assertion.

The villi, then, may be regarded as a propagating and rearing ground for the lymph corpuscles I have been considering. They grow, I would say, upon the nutrient matter derived from the digested food like yeast cells grow in a suitable pabulum or bacilli in a culture medium. Developing in this way and travelling along the lacteal tract they become carriers of assimilated food principles into the system and reaching the circulation pass under the denomination of digestion lymphocytes. I will not at the present moment enter into the question of what subsequently becomes of these corpuscles. As yet I have only dealt with them morphologically, but I have to speak of the chemical bearings belonging to them and it will be convenient to reserve what I have to say about their destination until after these have been considered.

Lymphocytes consist virtually of little masses of bioplasm and the property of bioplasm is to assimilate or to incorporate within itself matter which is suited for the purpose. They may be compared to unicellular organisms and may be said to grow independently upon the nutrient matter around them. In this growth the molecules of the nutrient matter become linked on to the proteid molecules of the augmenting bioplasm in a manner to lead to the extension that ensues. For this a reciprocal relation must exist between that which is taking on and that which is taken on, and it is by enzyme action that provision is made for bringing about the required relationship condition. This having been effected the union takes place by virtue of affinity—a power by which atoms and molecules are drawn into chemical combination and therefore a power of supreme importance in the domain of chemistry.

We know how some atoms and molecules when brought together enter into chemical union whilst others show no disposition to do so. We know also where affinity exists that it does so under very varying degrees of strength. The effect of affinity is conspicuously realisable in the inorganic kingdom. It is not so self-evident in connexion with the organic kingdom but nevertheless I take it that it stands at the foundation of the combinations that occur. The expansive power of a growing structure may be very great, as is made manifest by the damage of building constructions sometimes perceived to be occasioned by the growth of trunks and roots of trees. I remember upon one occasion having seen a heavy paving stone raised out of place by a ramified fungus growth underneath. Instances of this kind bring home to us the fact that in the molecular combination associated with growth there must be no mean amount of attraction force at work.

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[4] Brit. Med. Jour., vol. ii., 1904, p. 524.

[5] Archiv für Experimentelle Pathologie und Pharmakologie, Band xxv., 1889.

[6] Archiv für Anatomie und Physiologie, 1877.

In the lymphocyte bioplasm then there exists the aptitude for taking on the food molecules to which the requisite configuration has been given by enzyme action. Peptone is representative of the nitrogenous portion of the food and glucose of the carbohydrate. They both are found on absorption to disappear. Hofmeister,[7] commenting on the disappearance of peptone, suggested that it was taken hold of by the lymphocytes and that bound up in these it could traverse the circulatory system without filtering off when passing through the kidneys. Pohl[8] speaks of the proteid of the food being first broken down by digestion and then built up again by the lymphocytes into the proteid specifically belonging to the animal in which the action occurs. The lymphocyte, he adds, must subsequently become dissolved in blood plasma or be taken by the tissues. A. Mathews, in an article on the Origin of Fibrinogen,[9] enters into the question of the transformation of food proteids into blood proteids, refers to Schmidt's and Mörner's observations pointing to paraglobulin being derived from disintegrating leucocytes, and himself adduces evidence suggestive of leucocytes being the source of fibrinogen.

All this touches upon the point that is before us, which is the function of the lymphocyte in assimilating digested foodstuff and what subsequently becomes of the assimilated material. It will be noted that in the views of the various authorities which have been mentioned reference is only made to the peptone product of digestion. I have to suggest that the action should be extended and made to embrace carbohydrate—that carbohydrate and peptone stand upon the same footing as regards the manner in which they are dealt with by the growing bioplasm of the intestinal lymphocytes, that both become linked on to the biogenic molecules of the lymphocyte and thus made to enter into the constitution of living matter in which the various chemical changes of metabolism are wrought out. Hofmeister's remark about peptone being placed by the assimilative action of the lymphocytes into a position to traverse the circulation without filtering off with the urine applies with equal force to sugar, of which it may without hesitation be said that if it is to be available for service in the economy it must not be permitted to enter the circulation in the small molecular form represented by sugar.

Under the view set forth the food principles are in the first instance constructed by assimilative action into the principles of the blood. The step that follows is that the tissues derive their nourishment from the elaborated principles of the blood. The blood feeds upon the food supplied from without and the tissues feed upon the blood. I do not see that we can deny to the blood with the standard composition it possesses an inherent assimilative power comparable to that possessed by the tissues. I take exception to the view expressed in a recent communication to the Pathological Society by Dr. W. D. Halliburton.[10] Reference is made in it to the success that has attended Emil Fischer's efforts to synthesise some of the lower cleavage products of proteolysis and it is suggested that a more complete breaking down of proteid occurs in the alimentary canal than has been hitherto supposed, erepsin being specified as the enzyme which has the power of carrying peptones into more rudimentary cleavage products. The new theory is stated to assume a complete breaking down of the foodstuffs previously to their being built up into the living tissue. What, it may be asked, would be the condition of the blood if such a view held good? Instead of a component of the system with as much of a standard constitution as muscle and other structures it would consist of an agglomeration of small molecules in transport to the tissues and in a position to filter off with the urine in passing through the kidney. What also would be the use of the elaborated proteids of the blood if the broken-up foodstuffs were directly conveyed to the tissues and there synthesised? As far as I can see everything stands against the correctness of such a view and what may be said clearly to be wanted is that the synthesis should take place preparatory to entry into the blood.

Because the chemist can as yet only synthesise the more rudimentary molecules into higher combinations it is not to be argued that nature is in the same position. We lack the power of forging the implements by which nature's work is performed. When we get hold of, and apply, these implements—as, for instance, when we operate with enzymes—we can achieve in our laboratory experiments the same that is effected inside the living organism. There are grounds for believing that chemistry works upon the same basis in the organic and the inorganic kingdoms of nature. Affinity and adaptability in molecular configuration are at the root of chemical union and the difficulty in bringing about a desired chemical union in manipulating with the complex organic molecules is intelligible when we look at the intricacy of the conditions that require to be met with respect to molecular configuration. Fischer's simile of lock-and-key arrangement in the fitting together of molecules brings home to us the severity of the conditions that must exist where highly complex molecules are dealt with. The slightest deviation in any particular from the required construction would suffice to throw out the adaptability for union. If the adaptability between the complex peptone molecule and the taking-on molecule of the lymphocyte bioplasm exists, as I consider there are grounds for believing it does, there would be no reason for the proteolysis of digestion to be carried further.

Let me show how the line of argument that has been set forth harmonises with what is taught in connexion with the chemistry of the doctrine of immunity. For this I will quote from Ehrlich's Croonian lecture, published in the Proceedings of the Royal Society for 1900, and will premise by stating that foodstuff and toxin molecules are looked upon as standing in an allied position in relation to the assimilating protoplasmic molecules. At p. 433 Ehrlich says: "We may regard the cell quite apart from its familiar morphological aspects and contemplate its constitution from the purely *chemical* standpoint. We are obliged to adopt the view that the protoplasm is equipped with certain atomic groups, whose function especially consists in fixing to themselves certain foodstuffs of importance to the cell life. Adopting the nomenclature of organic chemistry, these groups may be designated side chains. We may assume that the protoplasm consists of a special executive centre (Leistungs-centrum) in connexion with which are nutritive side chains which possess a certain degree of independence and which may differ from one another according to the requirements of the different cells. And as these side chains have the office of attaching to themselves certain foodstuffs we must also assume an atom-grouping in these foodstuffs themselves, every group uniting with a corresponding combining group of a side chain. The relationship of the corresponding groups, i.e., those of the foodstuff and those of the cell, must be specific. They must be adapted to one another as, e.g., male and female screw (Pasteur) or as lock and key (E. Fischer). From this point of view we must contemplate the relation of the toxin to the cell."

I have spoken of the digestion lymphocytes as little collections of bioplasm growing upon the prepared nutrient principles of the food. I consider that in the exercise of their assimilative or taking on office they deal alike with the products derived from proteid and from carbohydrate matter, and therefore what is said about the action occurring in the one case is applicable to the other. Do not the leucocytes belonging to the blood stand in a similar position in relation to assimilative action? The phagocytes have acquired a renowned reputation through their power of devouring bacilli and other foreign particles and subsequently disposing of them in the same way that the amœba engulfs its food and then digests and makes use of it. This means that assimilation is brought into play and if assimilation is thus put into operation it is only reasonable to infer that it can be applied to surrounding molecules of any description that possess the requisite conformation for being assimilated. Upon such ground the leucocytes may be regarded as constituting the assimilative agency or the living element of the blood, giving to it the general power that is possessed by living matter elsewhere. Thus products which may incidentally reach the blood, either from ingestion or from the tissues, that are susceptible of utilisation may become assimilated and placed in a position to be subsequently made use of. The lymphocytes of the lymphoid tissue, I take it, may be regarded as performing the same kind of duty by assimilating the utilisable products of retrograde tissue metamorphosis and rendering them fit for further use.

We now come to a point which, although an important one, seems to have received but scant consideration by physiologists. In what way do the fibrinogen, globulin, and albumin of the blood take origin? They are highly complex proteids and can only be conceived to arise through the instrumentality of bioplasm. Applying the mind to the matter the following train of reasoning suggested itself to me. I took it for granted that they may be considered as having a close connexion with the food and that there must be some intermediate living agency in operation to produce them. Seeing that lymphocytes constitute a living growth constructed out of the elements of the food, that there is an active flow of them into the circulation connected with food ingestion, and that there is afterwards a melting away of them to be observed, it seemed that in these circumstances a groundwork was presented suggestively affording a solution of the problem before us. May we not look to the gland cell to help us analogically in the matter? The gland cell consists of bioplasm which, in this instance, has grown upon nutrient matter derived from the blood. As part of its life it undergoes autolysis and gives its formed material to its associated secretion. Lysins now constitute a well-known class of implement constructed by nature for the execution of her work and it may be taken that a special lysin is provided for each of the different operations to be carried out. By autolysis of the lymphocytes the material built up by them from the elements of the food would be given to the blood and may not the autolysis occur in such a manner as to lead to the evolution of the proteids of the blood, which in their pabulum character stand in an intermediate position between the food and the tissues? That tissue is in reality built up and maintained by proteids such as those in the blood is shown by the fact that in the egg they unmistakeably constitute the medium from which the tissues of the developing chick derive their nutrient matter. Food into lymphocytes, lymphocytes into proteids, proteids into tissue substance, may be taken as representing the chain of physiological connexion between the food and the tissues.

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[7] Zeitschrift fur Physiologische Chemie, Band v., 1881.

[8] Loc. cit.

[9] American Journal of Physiology, vol. iii., 1899.

[10] THE LANCET, March 18th, 1905, p. 717.

In support of the view that has been expressed I have found on looking through the literature of the subject since the idea was framed that A. Mathews,[11] to whose work I have already referred, has adduced experimental evidence in favour of leucocytes constituting the source of fibrinogen and in his paper he alludes to the work of Alexander Schmidt[12] pointing to the likelihood of the paraglobulin of the blood being derived from leucocytes and likewise to that of Lilienfeld and Miescher[13] suggesting the same source for the serum albumin.

The point that has been discussed has a bearing on the application of proteid to energy production. It has long been known that the elimination of urea stands in relation to the proteid food ingested and it is considered that the proteid molecule splits up into a non-utilisable nitrogenous portion which is discharged as urea and a complementary tilisable residue which, whether assuming the form as has een suggested of carbohydrate or not, may be reckoned to ontribute to energy production. It has been difficult to onceive that this combustion proteid passed into the tissues or the purpose of being broken down. Looking upon the rocess as occurring within the lymphocyte there is nothing hat appears incongruous and it is noticeable that the ncreased urea elimination about harmonises with the period f maximum lymphocyte autolysis.

As yet I have only spoken of the assimilation of carbohydrate by being built up into proteid through the agency of bioplasm. Probably when there is no particularly large upply of carbohydrate this is the main result that occurs. When, however, the supply is extensive it is evident that some escapes being disposed of at the seat of absorption and thence reaches the portal blood. At a period of fasting and likewise after the ingestion of animal food the portal blood, as regards the amount of sugar present, corresponds with that belonging to the other parts of the circulatory system. After a free supply of starchy food, however, sugar may be found to be present in the portal blood to a considerably larger extent than anywhere else. In my "Physiology of the Carbohydrates" I entered somewhat fully into this matter and gave a number of experimental results obtained under different conditions with regard to food. The presence of about 2 per 1000 or a little over was of not uncommon occurrence. In two instances figures amounting to 4 per 1000 were met with.

The sugar which escapes assimilation at the seat of absorption and reaches the portal blood is conveyed to the liver wherein it is brought into close relation with the cells of the organ. By these it becomes absorbed and transmuted into glycogen. There is overwhelming evidence to show that this action occurs and if it is complete, as it ought to be, sugar from the food is prevented from reaching the general circulation. It will be seen from the arrangement existing that there is a double provision against the entry of sugar from the food into the general circulation. Whatever may pass the first line of obstruction has to confront the arresting action of the liver. In this way security is provided against the systemic blood receiving an influx of sugar at every meal into which carbohydrate enters.

I look upon glycogen as simply a cleaved-off storage material standing in identically the same position as fat. I think it may be said that we may rightly consider that the sugar is taken on by the bioplasm of the cells and by it transmuted into, and thrown off as, glycogen. This kind of operation is one of the commonest of the operations occurring in connexion with living matter. Starch, cellulose, and a multiplicity of other products are cleaved off from a pre-existing biogenic complex into which something other than the cleaved-off principle has passed in. Ordinary enzyme action is attended with taking on in one form and throwing off in another. Looked at in this way there is nothing mysterious or incomprehensible about the position that glycogen holds and its position in the liver is not different from that which it holds in the numerous other localities in which it is met with. Its presence only means disjoined carbohydrate collected as redundant material in the locality where it is found. The supply of carbohydrate is in excess of utilisation and the surplus is thrown off as glycogen for temporary storage. Yeast cells contain glycogen and it has been noticed that when growing in a 1 per cent. solution of glucose there is only a small amount to be found present, whilst when growing in a 10 or 20 per cent. solution there is much. In the case of the liver it is common knowledge that its glycogen varies with the amount of carbohydrate food-supply. Diminishing the consumption going on by reducing the activity of a part promotes accumulation and conversely increasing the activity leads to diminution. For instance, division of the nerve or tendon of a muscle is followed by an accumulation of glycogen and tetanising the muscle by a diminution.

By severe forced exercise it is found that glycogen may be made to disappear, alike from the liver and muscles, in the course of a few hours without any show of the production of sugar. The seat of actual consumption is in the muscles and therefore in the case of its disappearance from the liver there must be transport in some way or other through the circulatory system. To this point I will give attention.

The outcome of all modern work is pointing in a very strong manner to the taking on and throwing off capacity of organic matter constituting an exceedingly widespread principle of action. I have purposely said organic and not bioplasmic matter, for in the action of enzymes, which can hardly be considered as representatives of bioplasm, have we not a taking on in one form and throwing off in another action to deal with? It is, indeed, difficult to see how the action of an enzyme differs from that which is ordinarily looked upon as constituting a special attribute of living matter. I may even go a step further and say it is difficult to see how the illustrations, which at the present moment are being brought forward by chemists under the head of inorganic ferment action, differ in nature from the occurrences associated with ordinary organic ferment action. Applying the principle of action to which I have been alluding to the point under consideration the suggestion presents itself that sugar is taken on as a side chain by a proteid constituent of the blood and transported to the tissues where it is taken off for subjection to utilisation. The suggested operation is identical with what occurs in connexion with the transport of oxygen. Oxygen is taken on by hæmoglobin and in a state of combination transported to the tissues where it is taken off and applied to utilisation. Glycogen is a storage material consisting of very large molecules and therefore not adapted for shifting its position. I should think that the first action that occurs is the breaking down of its molecule into molecules of glucose which become instantly taken on by the alluded to molecules of the blood. There may be concerted action between the breaking down and taking on processes and this is rendered probable by the fact that there is no show of sugar in connexion with the occurrence. Enzyme action, it may be considered, of necessity constitutes a part of the process and the enzyme concerned and set into motion as needed may in the presence of altered conditions be intelligibly conceived to be capable of producing the deviation from the natural living state that so quickly takes place as a post-mortem occurrence in the liver.

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[11] American Journal of Physiology, vol. iii., 1899.

[12] Zur Blutlehre, Leipsic, 1892.

[13] Hoppe-Seyler's Medicinische-Chemische Untersuchungen, Band iv., p. 441.

The phenomena connected with phloridzin glycosuria afford confirmatory evidence in relation to the view that has just been expressed. Volume XXIX., 1903, of the *Journal of Physiology* contains a communication by Pavy, Brodie, and Siau on the Mechanism of Phloridzin Glycosuria in which the point in question is dealt with. The conclusion we arrived at from the experimental work performed was that the sugar eliminated is derived from the katabolic action of the renal cells on a constituent of the blood containing sugar in a locked-up state. This idea was previously mentioned at a meeting of the Pathological Society in April, 1902. Loewi[14] has expressed a similar idea and has even gone the length of suggesting that the sugar which is ordinarily looked upon as being in a free form in the blood is in reality in a loosely combined state when the blood is circulating in the body. We did not commit ourselves to agreeing with this proposition, although otherwise we stood in accord with him. It is clearly established that the glycosuria produced by phloridzin is not due to hyperglycæmia and it hence follows that there must be something in the blood to yield the sugar. The first effect of the phloridzin is to sweep away the glycogen that is present in the body. If this passed through the circulatory system as free sugar there ought to be hyperglycæmia in proportion to the glycosuria, which there certainly is not. This being the case, the only conclusion that can be drawn is that the katabolised glycogen (sugar) enters into side chain or loose combination with a constituent (proteid) of the blood and is thus conveyed to the kidney where it is set free and eliminated.

For a great number of years cases of diabetes have from time to time been noticed to have been associated with disease of the pancreas and the feeling has been entertained that a connexion existed between the two. Experimental physiology has since stepped in and shown indubitably that diabetes is producible by extirpation of the pancreas, and the view has been formulated that normally the organ supplies an internal secretion which contributes to the proper disposal of carbohydrate matter in the system. To the islands of Langerhans has been assigned this function and weighty evidence has been adduced in support of the correctness of the view that has been taken. Lépine a long while ago contended that a glycolytic ferment was derived from the pancreas which was instrumental in effecting the destruction of the sugar assumed under the glycogenic doctrine to be constantly reaching the blood, and that the absence of the ferment was the source of diabetes. His view has not received acceptance and I do not consider that I need further allude to it. More recently Otto Cohnheim has conjectured that the pancreas supplies an activator to the ferment which, he says, exists in the muscles for the oxidation of sugar. In view of the anticipated therapeutic value of his pancreatic product in connexion with diabetes it has been made a patented article. Much adverse criticism of his work, however, has been called forth and I myself feel that the matter stands upon a wrong basis. With the assistance of Mr. Bywaters I have entered experimentally into the subject and the evidence that has been obtained has not been of a confirmatory nature.

The work that has been conducted by others has been directed to the side of the destruction of sugar. No one has viewed the subject from the side of the assimilation of sugar, but it seems to me that this is the aspect from which it should be looked at. Enzyme action is concerned in building up as well as in breaking down and an activator is wanted for enabling the bioplasm of the intestinal tract to perform its work in connexion with the assimilation of the absorbed sugar. Let me proceed to explain the matter from the standpoint that I view it.

It has been recently ascertained that enzymes are dual bodies. One portion is insoluble in alcohol, non-diffusible, and destructible by heat. This probably is of a proteid nature. The other—the co-ferment or activator—is usually soluble in alcohol, diffusible, and can be boiled without losing its activity. It corresponds with the active agents that are obtained from the thyroid, suprarenal capsule, &c. A great advance was made when Buchner discovered that the expressed juice of yeast contained the ferment zymase which converts sugar into alcohol and carbonic acid. Harden and Young,[15] in experimenting with zymase at the Lister Institute, have found that a given quantity of fresh yeast juice has its ferment power doubled by the addition of an equal volume of boiled juice. This means that an extra quantity of the activator, which is powerless by itself, gives increased power to the ferment principle in the juice. In a further experiment the yeast juice was subjected to filtration through a Martin's gelatin filter. Neither the filtrate nor the residue on the filter dissolved in water was capable of inducing fermentation, but when they were mixed together they produced fermentation almost equal in extent to that produced by the original juice.

Let it be supposed that the activator supplied by the pancreas is wanted to enable bioplasm to take on or to assimilate sugar. It may be assumed that there is always a certain amount of it in normal circumstances distributed through the system and ready for use. I have long known that the introduction of sugar into the circulatory system was followed by the presence of an increased amount of amylose carbohydrate in the blood, and commented upon the point in my "Physiology of the Carbohydrates." With the information that is now before us the idea is suggested that a portion of the introduced sugar is appropriated by the bioplasm of the leucocytes and converted into proteid carbohydrate. I will draw attention to a tabular arrangement of results showing the amount of amylose carbohydrate found in the blood of rabbits taken ordinarily and in that of rabbits subjected to experimental injection:—

Amylose Carbohydrate from Rabbit's Blood expressed as Glucose in parts per 1000.

Normal blood.	Time between injection and killing.	After intravenous injection of—			
		Saline solution.	1 gramme per kilogramme of—		
			Dextrose.	Lævulose.	Galactose.
1·39	15 minutes ...	1·35 ...	1·60 ...	2·67 ...	1·74
1·34	— ...	1·35 ...	1·53 ...	— ...	1·93
1·39	— ...	— ...	1·52 ...	— ...	—
1·52	— ...	— ...	1·80 ...	— ...	—
1·39	— ...	— ...	— ...	— ...	—
1·40	30 minutes ...	— ...	1·62 ...	2·60 ...	—
1·46	— ...	— ...	— ...	— ...	—
1·25	60 minutes ...	— ...	1·34 ...	1·81 ...	—
1·55	— ...	— ...	1·43 ...	— ...	—
1·44	— ...	— ...	— ...	— ...	—
1·41	— ...	— ...	— ...	— ..	—

It will be seen that in no case did the amylose carbohydrate exceed 1·55 per 1000 in the normal blood whilst in some of the instances after the injection of the sugars the figures stand considerably higher. Dilution of the blood would be occasioned by the injection and the effect of this with the animal killed shortly afterwards would be to reduce the proportionate amount of amylose carbohydrate. The condition found to exist at the end of 60 minutes is interesting. It shows that with the advance of time there is a tendency for the effect of the injection to work off.

In another set of experiments pancreatic extract was

Amylose Carbohydrate from Rabbit's Blood expressed as Glucose in Parts per 1000.

Time between injection and killing.	After intravenous injection of—			
	Pancreatic extract alone.	Pancreatic extract and 1 gramme per kilogramme of—		
		Dextrose.	Lævulose.	Honey sugar.
5 minutes	— ...	— ...	1·75	—
15 "	1·77 ...	2·47 ...	—	2·16
—	— ...	1·85 ...	—	1·95
—	— ...	1·70 ...	—	—
—	— ...	1·65 ...	—	—
—	— ...	2·39 ...	—	—
—	— ...	2·19 ...	—	—
—	— ...	1·77 ...	—	—
—	— ...	2·00 ...	—	—
—	— ...	2·35 ...	—	—
—	— ...	1·57 ...	—	—
—	— ...	2·08 ...	—	—
—	— ...	2·12 ...	2·22	—
30 minutes	1·52 ...	2·21 ...	1·74	—
—	— ...	— ...	2·56	—
45 minutes	— ...			

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[14] Archiv für Experimentelle Pathologie, vol. xlviii., 1902, p. 410.

[15] Journal of Physiology, vol. xxxii., 1904.

injected in association with the sugar. The extract was prepared by mixing the pancreas, which had been pounded with sand, with water, boiling, and filtering. The amount of extract used was such as to give a relation of about one gramme of pancreas per kilogramme of body-weight. The results have been arranged in a tabular form. After raw extract of pancreas and one gramme per kilogramme of dextrose, which immediately caused death, the figures given were 1·04 per 1000.

Other experiments were conducted in which the sugar and extract were injected subcutaneously instead of intravenously. The results have also been arranged in a tabular form.

Amylose Carbohydrate from Rabbit's Blood expressed as Glucose in Parts per 1000.

Time between injection and killing.	After subcutaneous injection of pancreatic extract and 1 gramme per kilogramme of—		
	Dextrose.	Lævulose.	Honey sugar.
1 hour	1·63	2·30	—
—	2·09	—	—
—	1·52	—	—
2 hours	1·77	—	1·49
—	1·23	—	1·74

Taken altogether a long list of experimental results is presented for grounding a judgment upon. The same method of procedure was adopted in all the experiments. Unmistakeably different figures are seen to have been obtained after the injection of pancreatic extract and sugar from those yielded in the other experiments. The effect of the employment of the pancreatic extract is suggestive of its holding a corresponding position to the activator in the yeast juice experiments that have been referred to. It will be noticed that in one of the experiments raw pancreatic extract was employed and that immediate death followed. In this experiment there was no elevation of the figures.

I have only dealt with one of the methods of disposal of carbohydrate in the animal system. There is another and it evidently must be regarded as holding a highly important position. I refer to the transformation of carbohydrate into fat, a process upon which an extensive industry is founded, seeing that it is at the basis of the fattening of animals with carbohydrate food. I gave consideration to this process in my "Physiology of the Carbohydrates" and showed that the superficial epithelial cells of the villi and the liver cells may be regarded as constituting the operative agents. To the lymphoid cells then of the villi I assign the office of metabolising carbohydrate into proteid and to the epithelial cells that of metabolising it into fat.

A few words in conclusion regarding diabetes. Viewed from the standpoint that I have taken it is the result of a wrong carbohydrate metabolism on the side of assimilation and in some cases on that of breaking down as well. In the "alimentary" form of the disease the carbohydrate fails to be properly assimilated and prevented from reaching the circulatory system in the small molecular state of sugar. In the "composite" form there is defective assimilation and at the same time a faulty tissue breaking down. The carbohydrate, which has been locked up in combination, instead of passing on to proper oxidation becomes liberated as free sugar and thence escapes from the system as waste material. As long as carbohydrate is properly assimilated and sugar is thus prevented from reaching the general circulation there can be no sugar passing into the urine from the food. Let the assimilative process fail and immediately sugar finds its way into the circulation and thence into the urine, just as if it had been directly introduced by an intravenous injection.

THE SPA TREATMENT OF CIRCULATORY DISORDERS.*

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SINCE the introduction of what is known as the Nauheim system into this country and the rather comprehensive claims originally put forward on its behalf the spa treatment of circulatory disorders has been in danger of becoming synonymous with effervescent baths and resistance exercises. As the application of this system is in reality very limited, and as its popularity threatens not only to damage the system itself but also to obscure the real advantages to be obtained from properly directed health resort treatment, the time seems favourable for a brief review of the whole question.

With regard to the Nauheim treatment itself, it is perhaps unnecessary to insist that it can be obtained elsewhere than at Nauheim. At Buxton, Bath, Harrogate, Sidmouth, Leamington, and Llangammarch, to mention but a few of our own health resorts, the baths and exercises can be carried out with intelligence and circumspection by physicians experienced in the treatment; and in London, as well as in a great many of the large provincial centres, the system can be applied at institutions and nursing homes by efficiently trained attendants. To reach Nauheim it is necessary to undertake a journey of nearly 24 hours' duration and even when this has been successfully accomplished the conditions in which the patient finds himself are by no means ideal. The town, it is true, is well drained, the water-supply is good, and the accommodation excellent, but the climate is unsatisfactory. Lying as it does at the foot of the Johannisberg and fully exposed to the east its rainfall is heavy and it is liable to sudden and decided changes of temperature. It is a summer resort, the season lasting from May till September, but the east winds which often prevail in May render that month unsuitable; the rains in September are generally severe, and the heat during July and August is not infrequently unbearable. From the points of view of climate and accessibility therefore Nauheim is by no means a place to which a cardiac patient should lightly be advised and he who neglects these elements in the selection of his spas does much to jeopardise his credit.

Of the treatment which has made the place famous it may be said at once that useful as it undoubtedly is in suitable cases the number of those cases is not large. As everyone now knows this treatment consists in the administration of cold or tepid saline baths which evolve a considerable quantity of carbonic acid gas, combined, usually, with resistance exercises and, occasionally, with graduated hill-climbing on the principle known as the Terrain-Kur of Oertel. So far as the last two items are concerned, and they are, from the researches of Oliver, Leonard Hill, Lauder Brunton and Tunnicliffe, probably by far the most important factors in producing the results, they are neither peculiar to, nor did they originate at, Nauheim. As long ago as 1854 Dr. Stokes of Dublin[1] wrote as follows: "The symptoms of debility of the heart are often removable by a regulated course of gymnastics or by pedestrian exercise, even in mountainous countries such as Switzerland or the Highlands of Scotland or Ireland....... During the first period of the day the patient suffers from dyspnœa and palpitation in an extreme degree, but by persevering without over-exertion or after a short rest he can finish his day's work and even ascend mountains with facility." 30 years later Oertel[2] of Munich developed the idea thus expressed and it was put into practical application at several health resorts, notably at Reichenhall and Ischl. Exercises and gymnastics were also used by Saeterburg of Stockholm and Zander as early as 1862 with excellent results.

In considering the system there remain then to the credit of Nauheim's initiative in cardio-therapeutics the saline effervescing baths about which so much has recently been heard. We are fortunately beyond the time when the remedial effects of waters applied externally can seriously claim to be due to some occult subterranean chemical combination. In the matter of drinking waters we have still to admit that chemistry fails to supply us with satisfactory reasons for their physiological activities but where application to the external surface is concerned we are dealing less with chemistry than with physics and we are therefore able to explain the results with considerable accuracy in terms of thermic, mechanical, and other forms of stimulation. The Nauheim waters as used for bathing contain, according to Weber,[3] "about 2 to 3 per cent. chloride of sodium, two to three per mille chloride of calcium, some bicarbonate of iron, and much carbonic acid gas," and they are applied at temperatures varying from 95·5° to 82° F.

The physiological effect of these baths, as may readily be understood from their stimulant constituents and their low temperature, is to increase blood pressure. It is also claimed that they exercise, by way of the cutaneous nerve endings, a reflex effect upon the centres which control the force and frequency of the cardiac systole, resulting in an increase of the former and a decrease in the latter. This is a claim which may in some degree safely be conceded to them; their chief effect, however, is that of increasing the intravascular tension. This has been denied by some writers who have not apparently understood that in so doing they were endeavouring to explain away the chief merit of a measure in whose cause they were appearing as enthusiastic champions. Increase of blood pressure, as everyone is aware, induces a slower and stronger cardiac systole, because the heart is stimulated to overcome the resistance. The duration of the baths is so managed that the stimulation is never allowed to approach the point of exhaustion; the effects are therefore maintained for a considerable time after its cause is removed. By repetition of the process these effects become increasingly pronounced owing to the heightened tone in the peripheral vessels induced by the cutaneous stimulation. We have, in fact, in these baths, as managed by a thoroughly experienced physician, a cycle of results almost exactly analogous to that produced by the action of digitalis, with this in favour of the baths that there is little danger of cumulative action or an overdose and none whatever of unpleasant consequences in the digestive tract. It is also true that the favourable results of the baths last much longer than the same results when secured by the use of the drug. In the light of this analogy it is not difficult to fix the limitations of the therapeutic value of the baths, which were, indeed, indicated by Sir William Broadbent[4] as long ago as 1897 in the following passage: "In cases of cardiac dilatation from loss of tone of the heart muscle after influenza or some depressing disease it (the system) may be of great service and effect a cure where drugs and other treatment have failed; in many cases of functional and neurotic heart disease, which are very common and are difficult to deal with, it may also give satisfactory results. In valvular disease it is, of course, unnecessary when compensation is established and no symptoms are present; when compensation has completely broken down it is not advisable as rest in bed and suitable treatment by other means will be more efficacious. In cases of mitral disease, more especially mitral stenosis, when compensation is just maintained with difficulty and when the degree of stenosis is such that increased contractile power of the right ventricle induced by digitalis would be useless or harmful, it may be of great service In aortic disease it is not advisable, owing to the risk of syncopal attacks, though when compensation is breaking down and mitral symptoms are present it may sometimes yield good results." These views are substantially supported by the latest writer on the subject,[5] who, though an enthusiast, tempers his enthusiasm with a very commendable and quite unusual amount of discretion. Dr. Leslie Thorne selects as examples of those cases for which permanent or pronounced benefit may be expected, the dilated, enfeebled, and irritable heart with unimpaired valves such as is common after influenza, typhoid fever, and other exhausting illness, the tobacco heart, and those with valvular disease in which from similar causes compensation is threatened; those cases, in fact, in which it is not only desirable but safe to increase the peripheral resistance so as to stimulate the heart to stronger and more efficient contraction.

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[1] Diseases of the Heart and Aorta, p. 357.
[2] Ziemssen's Cyclopædia, 1884.
[3] The Mineral Waters and Health Resorts of Europe.

And here it is pertinent to observe that the mere presence of dilatation, irrespectively of its cause, does not, as is so often erroneously supposed, constitute an indication for the employment of the Nauheim treatment, any more than it constitutes an indication for the exhibition of digitalis. Such treatment is suitable only for those cases where the dilatation is but a part of a general asthenia, as after diseases like influenza; or when it is the result of acute overstrain, abuse of tobacco, chlorosis, or the "fatigue products" of Clifford Allbutt. Such conditions constitute in reality, however, a very small proportion of the cases of dilated heart which come under notice. There is no such thing as primary or idiopathic dilatation and where the dilatation is not due to such causes as those just mentioned it is the result of undue resistance in the systemic periphery. In such circumstances to stimulate the heart without removing the resistance is merely to flog an overtired horse and to hasten the impending collapse. Of course, the undue resistance in the periphery may be merely relative, in the sense that the normal tone of the systemic vessels may suffice to offer a degree of resistance to the crippled central organ which it is beyond the power of the latter efficiently to overcome. Such a state of matters not infrequently arises in hearts the integrity of whose valves has become impaired by rheumatism and other acute specific diseases, especially as the result of shock, anxiety, worry, and other nervous influences. In such cases, though the Nauheim treatment may do good, it may, unless it is applied with a great deal of care and circumspection, do an infinity of harm; for the increase of the intravascular tension, instead of affording the desired stimulus to the cardiac contractions, may very easily provide the last straw in the tale of the heart's burden. In such cases the exercises alone, combined with drug therapeutics, are very useful but the baths should be reserved to a later period and even then the patient should be confided to the care of a physician, preferably at a health resort, who is exceptionally experienced in their administration.

The treatment by Nauheim baths is thus quite unsuited to the great majority of cardiac disorders which present themselves to the physician and its indiscriminate recommendation, even where dilatation is the most prominent objective feature, is by no means free from danger. It is fortunately no longer necessary to combat the preposterous claims which were at one time advanced to the effect that these baths were capable of a favourable influence upon aneurysm and angina pectoris from whatever cause arising. The "accidents" which have resulted from an over-abundant faith in these claims have been sufficiently numerous and startling to give pause even to the enthusiasts. The real truth of the whole matter may be summed up in saying that, as a rule which admits of very few exceptions, spa treatment is not suited to organic circulatory disorders where compensation is imperfect and that functional circulatory disorders, though sometimes conspicuously amenable to effervescent baths, are usually much better and much more scientifically treated by means other than those which are commonly associated with Nauheim. In order to appreciate this position it is necessary to realise not only the true nature of the problem which cardiopaths are liable to present, but also the nature and the degree of assistance which is to be expected of health resort treatment. And, first, as to organic affections. In the presence of a real lesion of, say, the mitral orifice, which is adequately compensated, no treatment directed to the heart itself can possibly do any good and it may, by disturbing the balance which nature herself has established, very easily do a great deal of harm. If, therefore, interference is to have any character other than that of pernicious meddling it must be directed to lessening the amount of work which the heart is called upon to perform, while avoiding anything which may tend to produce relaxation of the crippled organ. We are generally told that this indication is best fulfilled by rest and a tonic *régime*, which is commonly interpreted to mean physical or recumbent rest and a generous dietary. Now, rest and a tonic *régime* undoubtedly constitute the primary and essential indications, but the rest should not be physical but physiological rest and the tone to be improved should be that of the whole organism and not that of one viscus only. The aim, in fact, should be to maintain the body in a high degree of what sportsmen call "training" or fitness, carefully avoiding anything approaching to over-training but eschewing more especially the far more dangerous opposite extreme of "softness." For the man with a compensated lesion at his mitral valve is, as it were, in a chronic state of running a mile race, and unless he is maintained in the height of such a degree of general physical fitness as his lesion allows he will certainly be overtaken by cardiac dilatation. If, on the one hand, he is given digitalis, Nauheim baths, and other measures directed exclusively to the heart itself, he is in danger of being over-trained; and if, on the other, he is allowed to resign himself to a sofa and bath-chair life, reinforced by a "supporting" alimentary *régime*, he is, as the saying goes, "beaten before he starts." It is scarcely an exaggeration to affirm that most cardiopaths are permitted to go wrong in one or other of these directions, and it is quite certain that the dangers of both may be very readily avoided by timely and regular recourse to a form of health resort treatment which, in place of being enthusiastic-

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[4] Heart Disease, with Special Reference to Prognosis and Treatment, by Sir William Broadbent and Dr. J. F. Broadbent, second edition, 1900.

[5] The Nauheim Treatment of Chronic Diseases of the Heart, by Leslie Thorne Thorne, M.D. Baillière, Tindall, and Cox, 1904.

and specific, is sane, physiological, and orderly. Such treatment would aim at maintaining the normal balance between intake and output by regulation of the diet; by providing for efficient, while avoiding excessive, exercise; and, above all, by promoting adequate excretion—by doing, in fact, those things which ought to be done and by leaving undone those things which should be omitted.

It is easy to object that these things can be managed at home, but the sad truth is that they seldom or never are. And this is no reflection either upon medical attendant or patient. A person with a well compensated lesion does not feel ill. He is not properly speaking an invalid; he seldom wishes to be so regarded and when he does it is not desirable that he should be. In either case he generally follows a course of his own choosing or one which is suggested by some irresponsible person or persons and unless he is every now and again compelled into the paths of physiological righteousness troubles are certain to arise. Incomparably the best, the easiest, and the least exacting way of so compelling him is to send him annually to a suitable health resort and to place him under the care of an experienced and skilful physician. A properly equipped health resort exercises an educational, a disciplinary effect upon those who visit it for treatment. Rules are there habitually observed which at home are habitually broken, the importance of detail is inculcated, and the value of regularity is appreciated. Special facilities, such as baths, massage, mechanical apparatus, waters, graduated hill paths, and the like, are provided for carrying out the items of the treatment, more especially that most important of all items, adequate excretion by skin, bowels, and kidneys. It is often surprising to find with what docility, even amounting to eager coöperation, a patient who is refractory at home will submit himself to discipline as soon as he finds himself at a health resort. Moreover, at a properly selected spa some, at any rate, of the practising physicians may be regarded as exceptionally experienced in the kind and degree of "training" to which a patient should be subjected and they may, therefore, be trusted not only to elicit the best immediate results but also to indicate the paths by which the dreaded days of broken compensation and intercurrent disease may be most successfully avoided. A cardiopath, though by no means necessarily a doomed man, has nevertheless a very narrow margin of hygienic error and there can be no doubt that if such patients were at regular intervals subjected to the educational influence of suitable health-resort treatment that margin would be overstepped far less often than it is. An annual reminder of the dangers ahead and practical experience in the best means of avoiding them are truly conservative measures which, if more frequently resorted to, would lessen materially the necessity for the exhibition of digitalis and the excuse for the routine employment of Nauheim baths. It is not suggested that these baths ought not to be used in such cases. They have, on the contrary, a very valuable place among the means calculated to maintain a sound physiological balance. When combined with other measures they help to promote metabolism, to increase pulmonary expansion, and to stimulate renal excretion; and it is partly because their routine employment is liable to obscure their value in these directions that such employment is to be deprecated.

Such an annual educational course, while eminently suitable to adults, is conspicuously adapted to children. The development of the cardiopathic child is liable to be defective in proportion to the gravity of the valvular lesion. If that development is allowed to continue on defective lines, such, for example, as inadequate thoracic expansion, the defect ultimately reacts injuriously upon the crippled heart and a vicious circle is established. It is essential to the future well-being of the patient that the establishment of this vicious circle should be forestalled and prevented; and this can be accomplished by timely and intelligent health-resort treatment far more effectually than by any other means. The personal element in the spa physician, his tact, knowledge, and experience, always a question of the first importance, is here absolutely paramount. For as there are some kinds and degrees of defective development which are vicious, so there are others which are wholly beneficial. Nature rightly guards herself against a general growth of tissue which it will be beyond the power of the heart adequately to feed but in this effort of thrift she is liable to include such organs as the lungs and kidneys which are among the most powerful of the heart's potential allies. To know what to develop and how to develop it, and what to refrain from developing, is the part of an experienced and skilful physician who has opportunities for close observation together with ready access to the necessary means of treatment, both of which conditions are more readily and more completely fulfilled at a health resort than elsewhere.

In the stage of broken compensation, even where this is only just commencing, very little is to be expected of health-resort treatment and this little can usually be more efficiently obtained at home. Cardiopaths in this stage bear journeys very badly and this consideration should alone suffice to protect them from being hurried to health resorts, especially oversea, even supposing it to be the case that some exceptional benefit is to be anticipated from the treatment on arrival. In reality, however, no such benefit is to be anticipated. The only cases which afford any justification whatever for the recommendation of a distant health resort in such circumstances are those of mitral regurgitation in the very earliest stages of threatened compensation and the majority even of those are much better managed at home. Nothing but harm can come of sending patients affected with aortic regurgitation away from their surroundings, and there is no spa whose magical effects provide a sufficient excuse for subjecting a case of mitral stenosis with broken compensation to the fatigues of a long journey and the inevitable disappointments at the journey's end.

In connexion with so-called functional cardiac disorders it is necessary to remember that they are not primarily cardiac. Whether with Babcock[6] we regard them as expressions of a disorder of the nervous system or with Huchard[7] we agree to attribute them mainly to the digestive system, or whether we decline with Clifford Allbutt[8] to attach the responsibility to any particular system, it is obvious that the initial fault is to be sought not in the central but in some peripheral organ or organs. The simplest explanation, and one which has the merit of including all the known facts, is that these functional disorders are due to abnormalities of vaso-constriction and vaso-dilatation induced by the presence of poisonous matters in the blood stream. Of these, by far the most important are those which give rise to vaso-constriction with its necessary sequence of increased blood pressure and decreased blood-supply to important viscera, including the heart itself. The latter, though thus deprived of its normal amount of nourishment, is nevertheless called upon to perform additional work in order to overcome the increased peripheral resistance, with the very natural consequence of tachycardia, bradycardia, arrhythmia, and pseudo-anginal attacks. If these disturbances of function are not relieved by the removal of their cause organic impairment in the form of arterio-sclerosis, myocardial degeneration, dilatation, and valvular insufficiency or stenosis are liable to follow.

It is necessary then that these disorders should be treated in their earliest stages, in the stage of arterial spasm which has not as yet led to organic change, the stage of "presclerosis" of Huchard and his school. Unfortunately, there is no one symptom of this stage which is sufficiently characteristic to attract attention unless it be the presence of a high tension pulse, which, in the minds of some is so indissolubly connected with granular kidney that when other symptoms of this are absent no importance is attached to the altered state of the vessel. The complaint which brings the patient under observation is usually one of palpitation or præcordial distress combined not infrequently with attacks of giddiness. Dyspnœa is generally a pronounced symptom.[9] The surface is pale and the extremities, which are always cold, not infrequently "go dead." The urine is sometimes scanty and high coloured; sometimes it is the reverse; more often there is no regularity, the one state alternating with the other. The examination of the præcordial area which these symptoms naturally suggest reveals no increase of dulness and no murmur, but there is always an accentuated second sound to be heard at the aortic cartilage, and not infrequently a prolonged first sound at the apex. The degree of the accentuation of the second sound will vary with the amount of spasm and the propelling power of the cardiac muscle. It is sometimes absent, and then it will be found that all the sounds are muffled without being impure. A history of mental lethargy may often be elicited, together with other symptoms suggestive of inadequate vascular supply to important organs.[10]

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[6] Diseases of the Heart and Arterial System, p. 703; Appletons, 1903.

[7] Consultations Médicales; Baillière, 1905.

[8] System of Medicine, vol. v., p. 807; Macmillan, 1893.

[9] Vide "Breathlessness," by Lauder Brunton, Practitioner, June 1905.

Now the proper treatment of cases of this nature should obviously be directed to bringing about vaso-dilatation. Drugs such as nitro-glycerine and nitrite of amyl, though highly useful in an emergency, produce effects which are much too transient to be of lasting benefit. What is required is a permanent reduction of blood pressure, and this can only be secured by ridding the system of the toxins which are causing the vaso-constriction. To accomplish this time is required, and that time must be spent in carefully adjusting the habits of life to the threatening conditions, by regulating the diet so as to avoid as far as possible the introduction of fresh toxins, by promoting metabolism, and encouraging excretion. And these things must be done systematically, according to a definite scheme which permits only of such variations as the changing reactive powers of the patient demand. And they must be done efficiently—that is to say, in circumstances where the patient has little or no temptation to neglect his instructions and in a locality where all the necessary means for the regulation of diet, the promotion of metabolism, and the encouragement of excretion are ready to hand. In a word, the patient should be sent to a health resort. It may, of course, be possible to treat him in his ordinary surroundings, but at the very best this is an extremely difficult matter, at any rate at first, whereas at a spa everything is made easy and the habits there inculcated, when once acquired, have a reasonable chance of being continued under the various conditions of trial and temptation which home life is liable to present.

In deciding upon the respective claims of the numerous spas at which cardio vascular diseases may be treated on these lines it is necessary to take into consideration various factors, the majority of which it is beyond the scope of this paper to notice. There is, however, one general principle and a few practical details which may be mentioned in conclusion. The general principle is that any spa at which gout is properly treated is, potentially at any rate, a spa suitable to a cardiopath. The spa treatment of gout is directed mainly towards the promotion of metabolism and excretion and to the establishment of suitable habits, dietetic and hygienic, measures which, with slight differences in detail and degree, we have seen to dominate the rational treatment of cardiopathies, whether organic or functional. As qualifying this general principle, however, it is necessary to remember that physicians at "gouty" resorts are not, as a rule, in the habit of dealing with cardiac disorders, except in so far as these appear as complications or concomitants of the arthritic state, and that, furthermore, certain health resorts the waters of which are well adapted to the gouty have, so to speak, specialised in troubles of the cardio-vascular system, much in the same way and for the same obscure reason as Aachen has specialised in syphilis, Cauterets in throat affections, and Franzensbad in diseases peculiar to women Of those which have specialised in circulatory disorders Nauheim, of course, occupies the first place. The general merits of this spa have, however, become so obscured by its reputation for miraculous results that it seems a species of *lèse-majesté* to include it among those resorts at which such everyday matters as metabolism and excretion may suitably be promoted. When it has successfully passed through the trying ordeal of the fairy tale period, which well-meaning but indiscreet enthusiasts have imposed upon it, it will take its place, and that probably a high one, as a resort at which cardiopaths may be treated rationally and with discrimination. That time is not yet, however, and until it arrives he who would avoid heroics for his cardio-vascular patients would be well advised to send them elsewhere.

Of the home stations which are suitably equipped for the treatment of cardiopaths on the lines above indicated it would be invidious to draw any distinction between such well-appointed spas as Buxton, Bath, Harrogate, Leamington, Strathpeffer, and Llandrindod, all of which are "gouty" places and at which, in consequence, metabolism and excretion are well understood, but none of which have so far shown any tendency to specialise in cardio-vascular disorders. The only British spa to exhibit any such tendency up to the present is Llangammarch Wells,[11] but judged from the continental standard of comfort and the provision of amusement and distraction this must be regarded as a health resort *in posse* rather than *in esse*. Considerable improvements have, it is true, been effected there during the last 12 months, but if it is ever to take the position to which its barium waters entitle it, a position which on many grounds we all desire to see it occupy, the present local policy of *laissez faire* must be replaced by one of vigorous energy and enterprise.

In France, two places, Bourbon-Lancy and Evian, have long specialised in cardio-vascular complaints and one, Royat is in process of so doing. A curious and hitherto unexplained, but clinically well-founded specialism, that of disorders of the venous system, is also found among the French spas at Bagnoles de l'Orme in Normandy. At Bourbon-Lancy they approach the treatment of organic cardiac complaints from the standpoint of the rheumatic and other diatheses which gave them birth. While special care is taken to "train" the heart and to develop the lungs, the underlying habit of body receives the utmost attention with a view not only of ameliorating existing conditions, but more especially of providing against any recurrence of acute attacks For the waters of Bourbon-Lancy have a special value in the rheumatic diathesis. Wherein this value consists it is no more possible to say than it is to explain the undoubted efficacy of the waters of Contrexéville in renal affections. Inorganic chemistry has certainly no light to throw on the matter but here, as elsewhere, it is probable that radio-activity[12] and possibly some other forms of organic action may ultimately serve to explain the exact method of therapeutic effects the existence of which it is not possible to doubt. But, important as it is from the point of view of correcting the rheumatic tendency, the ingestion of the waters does not constitute the sole claim of this station to be regarded as one pre eminently suited to the rational—that is, the prophylactic treatment of rheumatic cardiopaths. This claim rests in some degree upon its admirable natural advantages, climatic and æsthetic, but in a very large measure upon the very complete equipment, balneary and mechanical, with which the station is provided.[13] More important still, however, is the fact that the physicians have special knowledge and very special experience in applying the waters, the baths, and the mechanical means to the peculiar needs of cardiac patients in such a way as to adjust the work of the heart to the nature and degree of its impairment, thus securing to the patient increased capacity for work and indefinite postponement of consequential evils. It is well to remember that there are no miracles at Bourbon-Lancy and that it is useless in consequence to send thither a patient whose lesion is uncompensated, or such as have definite arterio sclerosis, atheroma, or mitral stenosis of long standing. The cases from which the best results are to be expected, and these are often brilliant, are compensated organic lesions of rheumatic origin in children and young people, in whom it is still possible to adjust the general physical condition to the impaired cardiac capacity. At this station, in fact, they make a specialty not so much of the disease as of the patient. The lines on which Évian has specialised are rather different. Here they concern themselves chiefly with functional cardiac complaints, the *cardiopathies artérielles* of the French school, and this they do by promoting excretion, more especially the renal excretion, for which their waters are so admirably adapted.[14] In addition, however, they encourage the action of that most important emunctory the skin, and in order to promote elimination by this route they have provided themselves with a magnificent *établissement* which is fully equipped with all the means for modern balneary therapeutics and contains in addition the mechanical appliances which constitute so important an element in the rational treatment of cardiopaths. Functional cardiac complaints, more especially in the stage of spasm or pre sclerosis, induced by the

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[10] Vide "High Arterial Pressure," by H. D. Rolleston, Clinical Journal, June 21st, 1905.

[11] Llangammarch Wells as a Health Resort, by W. Black Jones, M D.; London, Kronheim, 1898. The Action of the Waters of Llangammarch Wells on Uric Acid, by W. Black Jones and Edward Russell, THE LANCET, March 25th, 1899, p. 830. The Action of Waters of

by W. Black Jones, THE LANCET,
of Llangammarch Wells,
1903.

Radio-Actives des Eaux.

Bourbon-Lancy, par Dr.
al to Nauheim, by J.
, 1903. Traitement des
par Dr. H. de Bosia.
d Evian, par le Dr.
Bergouignan; Paris,

presence of some poison in the blood and manifested by high arterial tension and such symptoms as breathlessness, palpitation, tachycardia, arrhythmia, and others already referred to, are treated here on thoroughly rational and scientific lines. With a view of checking the manufacture of the poison diet is regulated and with the object of insuring its disposal metabolism is increased and excretion, renal and cutaneous, is vigorously promoted. Moreover, the real inwardness of his complaint is carefully impressed upon the patient who is given to understand that if he does not wish his functional troubles to progress towards organic disease, such as granular kidney, angina pectoris, and diabetes, to say nothing of heart disease proper, he must be careful to observe the hygienic rules in which, down to the minutest detail, he is there instructed and the advantages of which he very soon learns to appreciate.

Although France is, in Châtel-Guyon, Salins Moutiers, Chateau-neuf, St. Nectaire, and Royat, provided with several well-appointed spas the waters of which contain a great deal of carbonic acid gas, it is only the last named, and that quite recently, which has shown any tendency to specialise in the treatment of cardiac complaints. The action of effervescing baths not only upon cardiopaths but also upon healthy people has been here studied in great detail[15] and the conclusions arrived at are entirely in consonance with those of Broadbent[16] and other unprejudiced writers on the subject. Royat being originally a gouty spa, and being possessed of waters exceptionally rich in CO_2, it is eminently fitted both by nature and experience for the rational treatment of circulatory disorders. The place[17] is rather more bracing either than Bourbon-Lancy (800 feet) or Évian (1250 feet), being situated in a valley which runs east and west, 1500 feet above sea-level. The relative humidity is low and the surroundings are exceptionally agreeable. The close proximity of the large town of Clermont-Ferrand (one and a half miles) affords a source of interest to visitors which is not common at health resorts. For cases which are amenable to treatment on Nauheim lines in which Nauheim itself, from its moderate elevation (400 feet), its comparatively unsatisfactory climatic conditions, or from other considerations[18] is deemed unsuitable, Royat is very well adapted, and it is especially suited to such patients as require mildly bracing conditions in charming surroundings.

York-street, W.

SURGERY AT SEA: A CASE OF PERFORATING DUODENAL ULCER; OPERATION; RECOVERY.

By HUGH W. BAYLY, M.A. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.

ON April 27th, 1905, at noon, I was asked by Mr. Aubrey D. Knight, at that time the surgeon to the Royal Mail Steam Packet Company's ship *La Plata*, then three days out from Barbados on the homeward voyage, to meet him in consultation over a Government passenger (a soldier) who was suffering from severe abdominal pain. The history of the case was as follows. The patient, aged 24 years, had been suffering from "indigestion" for several years and said that he had many times been under treatment for "gastric ulcer" and had at one time been several weeks in hospital, when he had been placed on rectal feeding. He had several times had hæmatemesis, the last occasion being about three months previously. Since joining the ship his motions had been black. He was a bad sailor and had been seasick for 24 hours before I saw him. At 10.20 A.M. he had been seized with a sudden sharp pain situated about three inches to the right and at the level of the umbilicus.

I found the patient lying on his right side on a mattress on the floor of his cabin with his legs drawn up and in great pain and distress. On inspection the breathing was seen to be entirely thoracic and the abdominal walls were absolutely rigid. On percussion there was hyper-resonance over the right side of the abdomen but no loss of liver dulness. There was extreme tenderness on pressure over the whole of the right side of the abdomen but the left side was not so sensitive. The temperature was 96° F. and the pulse was 100, weak but regular, and not running. There had been no hæmatemesis.

I diagnosed perforating duodenal ulcer and advised immediate operation, but before proceeding to operation in the necessarily somewhat unfavourable circumstances I suggested to Mr. Knight the advisability of taking another opinion. He therefore asked Mr. G. W. Paterson, Government surgeon at Grenada, to see the case with us. Mr. Paterson considered that the case was either one of perforation of, or hæmorrhage from, a duodenal ulcer and as in his practice he had recently met with a case with very similar symptoms which turned out to be only hæmorrhage and recovered without operation he advised watching the case for four hours before proceeding to the somewhat desperate resource of abdominal section in a cabin on a rolling ship.

At 4 P.M., therefore, we saw the patient again and we then found that the pulse was 120 and that the temperature was normal, and that there was distinct distension of the right hypochondrium and right half of the epigastrium. We all agreed that surgical aid was now indicated and Mr. Knight requested Mr Paterson as the most experienced surgeon to undertake the operation. Mr. Paterson unfortunately was a bad sailor and subject to attacks of giddiness, so, though offering us the invaluable aid of his advice, experience, and assistance, asked me to operate. The ship's carpenter fixed up a board table two feet wide across the cabin, thus dividing it into two portions. Mr. Paterson, who kindly acted as my assistant, and Mr. Knight, who gave the anæsthetic, took the outside on the right of the patient, while I myself and the hospital assistant remained on the inner side of the table next to the door of the cabin. I made an incision in the middle line from the ensiform cartilage to an inch above the umbilicus and was somewhat hampered by the fact that there were only two scalpels available and that they had both been recently blunted by opening an abscess in the horny hand of a stoker. As soon as the peritoneal cavity was opened a considerable quantity of fluid escaped which, however, did not smell offensively. The ulcer was of about the size of a sixpence and was situated on the upper and anterior surface of the first part of the duodenum, almost encroaching on the pylorus. I first closed the ulcer with a purse string suture and then invaginated it with Lembert's sutures. I made a suprapubic pelvic drain and washed out the peritoneal cavity with normal saline solution and sponged it as well as I could, but the patient showed signs of collapse and I had to hurry over the peritoneal toilet and stitch the abdomen up quickly. I left a gauze drain at the site of the ulcer and another leading to the bottom of the pelvis. With the help of strychnine and ether hypodermically, a hot brandy and saline enema, and hot bottles the state of shock gradually passed off.

I should have liked to perform a gastro-jejunostomy but neither the condition of the patient nor the instruments at my disposal would allow of this and as there appeared to be plenty of room at the site of the ulcer I hoped the operation would not produce so serious a stenosis of the gut as to be of material importance. In 13 hours—viz., on the morning of the 28th—the temperature was 100° and I thought that it would be advisable to remove the gauze drains. As the patient, however, seemed very weak and as he had taken no nourishment for 24 hours before the operation owing to sea sickness, and as he had lost a considerable quantity of fluid *viâ* the peritoneum, I first transfused him with two pints of normal saline solution. I had no proper transfusion apparatus but with the help of a stomach-tube and an exploring needle, the point of which one of the engineers kindly filed off for me, an efficient substitute was soon made.

After the transfusion the pulse considerably improved and Mr. Knight gave an anæsthetic of equal parts of chloroform and ether and I removed the gauze drains. The upper wound was clean but a considerable amount of purulent material escaped from the suprapubic incision. I washed out the pelvis with normal saline solution and put in a rubber drainage tube. On the morning of April 29th I washed out the pelvis again but there was practically no pus and the patient was now taking half ounce doses of milk and water every half hour. In the afternoon the temperature rose to 101° and the pulse to 120, so as I suspected some accumulation of pus I examined the pelvis with the finger and washed it out again. I could not, however, find a pocket of pus but on the morning of the 30th when I dressed the patient about one ounce of pus escaped and the temperature fell to normal and the pulse to 90. The patient was now taking one ounce of milk and one of water alternately every quarter of an hour. In the afternoon we ran into a heavy gale and the ship rolled badly and the patient began to vomit considerable quantities of dark-green fluid. As he was subject to sea-sickness I could not be certain whether the vomiting was due to the sea or to peritonitis, so I gave him a quarter of a grain of morphine hypodermically every six hours and discontinued feeding by the mouth and substituted rectal feeding every four hours, together with an enema of a quarter of a pint of normal saline solution every six hours, given half an hour after the hypodermic of morphine.

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[15] Le Bain Carbo-gazeux, son Action, Physiologique et Thérapeutique, dans les Maladies du Cœur, par le Dr. Mougeot; Paris, Rousset, 1905.

[16] Loc. cit.

[17] Vide Journal of Balneology, October, 1904, p. 277.

[18] Consult McGregor Robertson's paper already mentioned.

On May 1st the vomiting continued but was less frequent, occurring about every four hours, but the temperature rose to 100° in the morning and 101° at night, when the pulse was 140 but regular and of fair strength considering his condition. The patient now was unable to retain the nutrient enemata and as he was still losing fluid by vomiting I again transfused him with two pints of normal saline solution. I also ordered a drachm of sulphate of magnesium in an ounce of water to be given every four hours till an action of the bowels had been produced; this occurred on the following morning and was very offensive. On the 2nd the sea moderated and I left off the morphine and rectal feeding and returned to feeding by the mouth, giving one ounce of milk and one ounce of soda-water every hour and the white of one egg made up to two ounces with water every four hours. The vomiting now was rather less frequent, occurring about once in five hours, but the amount vomited seemed to equal the quantity of nourishment taken.

On the morning of May 3rd the temperature was 99·5° and the pulse was 120. I removed the pelvic drain and washed out the pelvis every morning. In the afternoon we arrived at Plymouth and as the captain had kindly signalled at the Lizard for an ambulance to be in waiting at Plymouth I transferred the patient to the South Devon and East Cornwall Hospital. On the 18th, in reply to inquiries, I received a wire from the house surgeon: "Wounds still suppurating, general condition slightly improved;" and on July 10th: "Quite well, going out of hospital."

The Royal Mail Steam Packet Company carries a trained nurse on both its mail and intercolonial steamers and a trained male hospital assistant on its mail boats, and the *La Plata* was taking home as passengers two time-expired nurses from the intercolonial boats, and my best thanks are due to these ladies who devoted themselves entirely to the case and without whose willing and able assistance a successful result would probably not have been reached. My special thanks are also due to Mr. Paterson for his invaluable help. No doubt the fact that the patient had taken no food for the 24 hours previously to the perforation was a favourable factor.

I should like again to draw attention to the fact of the unreliability of loss of liver dulness as a symptom of perforation and to emphasise the importance of carrying a trained nurse on all large ocean-going passenger boats.

New Oxford and Cambridge Club.

ON THE BEHAVIOUR OF LEUCOCYTES IN MALIGNANT GROWTHS.

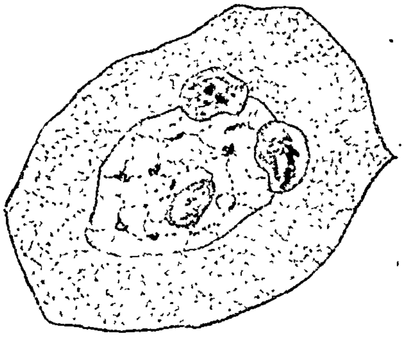
BY J. B. FARMER, F.R.S.,
J. E. S. MOORE, AND C. E. WALKER.

IN the present paper it is proposed to give an account of observations relating to the peculiar behaviour of leucocytes in very early examples of carcinoma in various parts of the human body. The phenomena described appear to be mainly, if not entirely, restricted to cancer in its earliest stages and not to occur in older growths, in metastases, or in grafts introduced into other individuals. Our observations at the present moment refer more especially to (1) a small primary rectal tumour, (2) an early case of chimney-sweep's cancer, and (3) an early epithelioma of the penis. In all of these the essential details in relation to the behaviour of the leucocytes are identical and suggest that we are here dealing with cytological phenomena peculiar to the earliest phases of the transmutation of normal tissue cells into cancerous elements.

It has frequently been noticed that round areas that are becoming cancerous there exists a marked activity among the leucocytes and the fact that cells in a cancerous area may contain leucocytic bodies within their cytoplasm has frequently been observed. The latter cases generally have been regarded either as phagocytic invasion of the leucocytes or as an indication that the cancer cells have assumed a phagocytic character with respect to the leucocytes. The results of the present investigations are not in accordance with either of these views. It was found in the rectal carcinoma above mentioned, for example, a growth that had hardly attained the size of a bean, that there was a very distinct zone of transition from the normal to the cancerous elements, round the periphery of the tumour; that is to say, a zone in which it was possible to pass, within the thickness of a few cells and almost insensibly, from elements that were merely actively dividing in the mucous layer, to cells that had assumed most markedly malignant characters. In this and other cases that we have examined we were irresistibly driven to the conclusion that the growth had not originated from a single cell or even from a few cells, but was being evolved by the direct conversion of a great many elements definitely functioning as mucous cells into those of a truly malignant type.

Immediately within this outer zone of the tumour the leucocytic crowding was most strikingly apparent and in a number of cells it was easy to discern the presence of leucocytes which had invaded the cytoplasm of the epithelial cells, where they stained readily as an inclusion. (Fig. 1.)

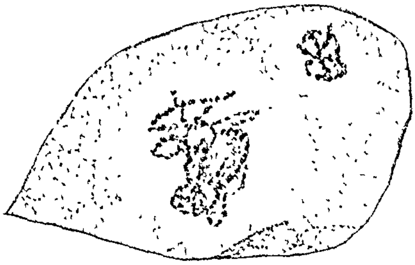
FIG. 1.



Tissue cell with two leucocytes lying in the cytoplasm adjacent to the nucleus.

This phenomenon did not occur in the adjacent healthy tissue, and we have ourselves been unable to trace it in inflammation produced by artificial means. But the most important, as well as the most singular, feature about the intrusion of the leucocytes into the tumour cells lies in the fact that neither the leucocyte nor the invaded tissue cell appears to be affected injuriously. Neither appears eventually to be destroyed, and it was soon found that many epithelial cells that were in phases of active division contained leucocytes that had been engulphed in their cytoplasm. In many instances it was found, moreover, that while the tissue cell was dividing mitotically the included leucocyte was also dividing in a similar manner and at the same time. (Figs. 2 and 3.) Both nuclei either passed

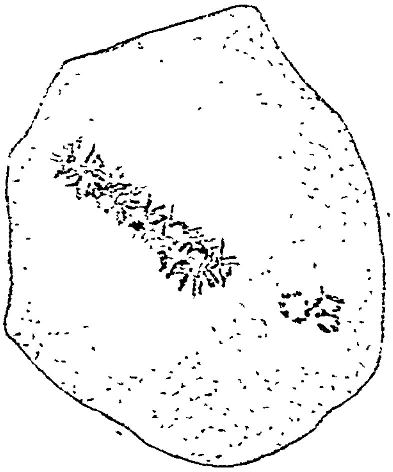
FIG. 2.



Tissue cell containing a leucocyte. Both nuclei are in prophase of division.

through their mitotic evolutions upon separate spindles, or the spindle figures became confused as is ordinarily the case in the first cleavage of the ovum.

FIG. 3.



Tissue cell containing a leucocyte. Both nuclei are dividing. The leucocyte is in a slightly earlier stage than tissue cell.

It is, we think, clear from the observations just recorded that a mixture of the chromosomes derived from the leucocyte and tissue cell respectively is distributed between the daughter nuclei resulting from the mitosis. In this way a complete disturbance of the normal chromosome constituents of the cell will be effected and the distribution must be of a qualitative as well as of a quantitative character. It may be well to indicate that if this process be compared to fertilisation there exists an important difference between true gametes and the cells concerned in this anomalous fusion. In the former (gametes) we are dealing with nuclei that have passed through the phases of maiosis (reduction), whereas there is no evidence at present to show that this is so in the case now under consideration. What its relation to the ultimate reduction that does occur in neoplastic cells may be is a subject for further investigation.

It may be pointed out that the fusion here described in no way corresponds with that union which has been stated to occur between the definite cancerous cells of certain neoplastic grafts.

In bringing this brief communication to a close we desire to express our indebtedness to the Imperial Cancer Research Fund for a grant in aid of our investigations.

CEREBRO-SPINAL MENINGITIS IN CEYLON.

BY ALDO CASTELLANI, M.D. FLORENCE,

LECTURER ON PATHOLOGY AT THE CEYLON MEDICAL COLLEGE.

OUR knowledge concerning the presence in the tropics of the cerebro-spinal meningitis due to the diplococcus intracellularis of Weichselbaum is very scanty; it may be therefore desirable to put on record two cases I had opportunity to study bacteriologically some months ago in this island. Both cases were Singhalese subjects and occurred at an interval of a few weeks. Both were brought to the hospital in a state of coma and died a few hours later before any complete clinical examination could be made. The post-mortem examination was held shortly after death and the macroscopical lesions found were practically identical in the two cases.

The meninges were thickened and opaque; the blood-vessels were greatly engorged. The entire cortex in both cases was covered with a thick purulent exudate; there was much pus along the larger fissures and sulci. On section the ventricles were found to be dilated; the cerebro-spinal fluid was turbid. A few cubic centimetres of this were collected and centrifuged. The microscopical examination of the sediment showed a very few mononuclear leucocytes, numerous polymorphonuclears, some of which were undergoing fatty degeneration, and a few macrophages. Some rare erythrocytes were present. Stained preparations showed numerous cocci. Most of these cocci were contained in the leucocytes and were arranged in couples; some were decidedly kidney-shaped, presenting an almost gonococcus-like appearance. A few were free and in rare instances were arranged in short chains. In preparations stained by Gram's method most of the cocci were not stained: here and there, however, it was possible to see a few which were not completely decolourised.

I tried to obtain cultures from the purulent exudation, the cerebro-spinal fluid, the pulp of the spleen, and the blood of the heart, using the ordinary laboratory media and also serum agar and blood agar. The media inoculated with the blood and the spleen juice remained sterile. Of the media inoculated with the purulent exudate and the cerebro-spinal liquid the agar, gelatin, broth, and peptone water did not show any growth: while the serum-agar and blood-agar tubes presented, after having been kept 24 hours at blood temperature, some small roundish translucid colonies showing some tendency to coalesce. Preparations from the colonies presented cocci in pairs and very short chains; the cocci were decolourised by Gram's method almost completely. Subcultures were made and frequently repeated. After several generations the organism became capable of growing well on ordinary media like agar-agar, gelatin, broth, &c. Moreover, the property being decolourised by Gram's method became less and less marked in solid media cultures, while it was retained by liquid media cultures. These characters of the meningococcus have been observed by many authors and lately well studied and minutely described by Lepierre.[1]

The organism in the first cultures obtained directly from the exudate and the cerebro-spinal fluid was very slightly virulent. Rabbits and guinea-pigs inoculated subcutaneously and intra-peritoneally all survived. Three rabbits were inoculated intravenously with an emulsion of two loopfuls each of blood agar culture in broth. They survived and practically did not show any signs of malaise. More successful was the inoculation of a similar emulsion under the dura mater. Of two rabbits so inoculated one died in two days; the other was ill for several days, refusing food and remaining in a state of sopor, but ultimately recovered. The necropsy of the rabbit which died showed a very marked injection of the meninges but no pus. Smears from the brain substance stained with diluted fuchsine contained many cocci, generally in pairs. From the brain substance, taken with all the aseptic precautions, pure cultures were easily obtained. The blood of the heart and the spleen pulp did not show any organisms when examined microscopically and all the media inoculated remained sterile.

By repeated passages through rabbits, using the subdural method, the organism became very virulent, being capable of killing rabbits by subcutaneous injections, this causing a general septicæmia so that the organism was easily grown from all the organs. Two rabbits were also inoculated under the dura mater with three drops each of the purulent exudation taken directly from the bodies. One showed signs of great malaise but survived; the other died in four days. The organism was present in the brain but not in the blood and spleen. The meninges were inflamed but no purulent exudation was present.

From all the characters of the organism found in these two cases of meningitis it was clear that I had really to do with the diplococcus intracellularis of Weichselbaum. This organism, discovered by Weichselbaum in 1887, was first considered by many observers as a simple variety of the streptococcus lanceolatus. Further investigation, however, clearly showed that it was quite a different species. Of the meningococcus several types have been described lately. Generally two types are admitted—the Weichselbaum type and the Jaeger-Heubner type. These two types are considered different species altogether by Weichselbaum himself, Albrecht Ghon, and others, while other authors (Concetti, Lepierre, and others) believe that the one type may pass into the other. The organism present in my cases was certainly a meningococcus of the true Weichselbaum type, as shown by the typical diplo hemispheric shape, the very slight virulence, the absence of growth (at first) in the usual media, and the discolouration by Gram's method, while the meningococcus of the Jaeger or Jaeger-Heubner type grows abundantly on the ordinary media, is frequently not decolourised by Gram's method, and is generally very virulent.

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[1] Charles Lepierre: Le Meningocoque, Journal de Physiologie et de Pathologie Generale, March 15th, 1903.

Colombo, Ceylon.

AN ANALYSIS OF 300 CONSECUTIVE GYNÆCOLOGICAL LAPAROTOMIES.

BY ARTHUR H. N. LEWERS, M.D. LOND., F.R.C.P. LOND.,
OBSTETRIC PHYSICIAN TO THE LONDON HOSPITAL.

PART II. (*concluded*).[1]

THE notes of the first 150 cases of these 300 consecutive gynæcological laparotomies were published in THE LANCET last week. As I did previously, I would take the liberty of reminding readers that the notes should be read in connexion with the table published in THE LANCET of July 8th, 1905. p. 70.

CASE 151.—A double hydrosalpinx. The right tube was as thick as the wrist, the left tube being less enlarged. Adhesions were present in the pelvis

CASE 152.—A fibroid reaching up to the umbilicus. There were many old thin adhesions on the peritoneal surface of the uterus. There was a very perfect large tubo ovarian cyst on the right side, the outer (i.e., ovarian) part being of the size of a fœtal head at term. It lay in Douglas's pouch and was very adherent to the back of the uterus and rectum, it was removed without rupturing The left ovary, which was three times the normal size, was fixed in the pelvis and to the back of the uterus by extensive adhesions.

CASE 153.—Operation for generally contracted pelvis. This was the second pregnancy. The patient had been 24 hours in labour. The os was fully dilated; two attempts had been made outside the hospital to deliver with axis-traction forceps. The vulva was œdematous. The fœtal heart was distinct and was still beating when the child was extracted but the child could not be made to breathe. The true conjugate was about three and a quarter inches. The patient was said to have had one child before, a very small one delivered with great difficulty by forceps in Russia.

CASE 154.—A large tumour of the size of a uterus at eight months. The right ovary was removed with the tumour. A very large incision was made. There was a fibroid of the size of an orange growing from the posterior wall of the supravaginal cervix beneath the peritoneum; this had to be enucleated. The tumour weighed 9 pounds 10 ounces.

CASE 155.—A right pyosalpinx of the size of a duck's egg, which was adherent in the pelvis, to the rectum, and the back of the uterus. Pus escaped during removal. The left tube was enlarged and thickened and was adherent to the ovary; this did not contain pus. The peritoneum was washed out with saline solution.

CASE 156.—The external os was patulous, admitting the finger one inch or more. The canal was lined with malignant growth. The uterus was much less moveable than normal. The temperature was 104° F. on the first day the patient was examined. On opening the abdomen the pelvic organs were hidden by a roof of adherent intestine. On separating, the right ovary, which was of the size of a Tangerine orange, was gradually defined. The left ovary, which was of the size of a large walnut, was similarly separated from a bed of adhesions and complete removal of the uterus was performed. There were dermoid cysts of both ovaries. A gland of the size of an almond in shell was removed from the surface of the external iliac artery, it was not cancerous The abdominal wound broke down, but ultimately healed soundly.

CASE 157.—A left ovarian cyst of the size of an orange adherent in the pelvis. There was a right ovarian cyst of smaller size. Adhesions which were binding down the uterus in retroverted position were separated. A subperitoneal fibroid of the size of a plum at the fundus was not removed.

CASE 158.—A solid ovarian tumour had been diagnosed. On opening the abdomen the uterus and ovaries were seen to be quite normal. The sigmoid flexure lay directly under the wound and had a diameter of six inches. I called in a surgical colleague to see the case with me. At first it was thought that the tumour lay behind the sigmoid flexure and he made an attempt to enucleate it from behind. He soon concluded that the tumour was in the bowel and removed it by opening the bowel. It was a hard fæcal concretion of the size of a large cocoanut which had dilated the sigmoid flexure to the size mentioned. The patient had been in hospital a week and her bowels had acted well.

CASE 159.—A left ovarian cyst reaching to one inch above the umbilicus; it contained thick black fluid and required extensive enucleation The peritoneum was sutured over the region of enucleation. There was a right ovarian cyst of the size of a cocoanut which contained turbid yellowish fluid, not pus.

CASE 160. The tumour reached a hand's breadth above the umbilicus. There were multiple fibroids, some of which were calcified The left ovary was r moved with the uterus. The abdominal wall was very fat. The tumour weighed 4 pounds 10 ounces.

CASE 161.—The tumour reached nearly to the umbilicus to the right of the middle line The right Fallopian tube was found to be dilated to the size of a large orange and was adherent to parts around The fimbriated end of the tube was widely dilated. A macerated fœtus two and a half inches long came up among the clots removed. A mass of old clot of the size of the fist was adherent to the intestine and omentum and formed the greater part of the abdominal tumour noticed before operation. The right tube and ovary were removed. The left tube and ovary were normal and were not removed.

CASE 162.—The tumour reached nearly to the umbilicus. There was a double hydrosalpinx which was largest on the right side. There were numerous adhesions between the dilated tubes, the uterus, the rectum, and the pelvis.

CASE 163.—The uterus was of the size of a child's head (one year) and was enlarged by multiple fibroids undergoing mucoid degeneration. The right ovary and tube were removed with the tumour.

CASE 164.—An emergency operation in the night. There was a large quantity of blood and clot in the peritoneal cavity. The pregnancy was in the right Fallopian tube which had ruptured. The tube was removed. On examination afterwards the ovum was found in the tube with an amniotic cavity and a fœtus three quarters of an inch long. *Note.*—This patient was operated on by me on Sept 6th, 1901, for ruptured extra-uterine pregnancy in the left Fallopian tube Intravenous injections of salt solution were made during operation then.

CASE 165.—The uterus was retroverted and bound down by old adhesions and there were numerous adhesions binding down the uterine [illegible] ages were otherwise healthy. [illegible] were open After separati[illegible] but the uterus was stitched [illegible] wall. The operation was undertaken for chronic pain.

CASE 166.—The tumour was of the size of a uterus at six months One large fibroid had grown out into the left broad ligament, opening it out and raising the peritoneum from the left iliac fossa. Extensive enucleation was necessary. The left ovary was removed with the tumour. As the right ovary was cystic it was also removed. The patient died, probably from sepsis, on the fourth day. At the post-mortem examination nothing [illegible] te was found. There was very [illegible] appendages of very long standing. The whole of the pelvic contents were firmly matted together and separation was very difficult. The left Fallopian tube which contained thick turbid fluid, not pus, was first removed There was a left ovarian cyst of the size of a Tangerine orange which was removed. The removal of the right Fallopian tube caused most difficulty as it was firmly adherent, especially to the rectum and the vermiform appendix. The wall of the rectum was much damaged but its lumen was not opened. The right tube contained fœtid pus which escaped during removal. A fæcal fistula occurred a week after operation

CASE 168.—The tumour reached to the umbilicus and was softer than most fibroids. It was found to be fibroid undergoing mucoid degeneration. The right ovary was not removed. The tumour weighed three pounds.

CASE 169.—The tumour reached to the umbilicus. The fundus and the body of the uterus were not involved. The fibroid was a single one growing in the supravaginal cervix posteriorly. It had to be enucleated from the retroperitoneal "bed," from which there was much oozing. Both ovaries were removed with the uterus A gauze drain was inserted on account of the oozing The fibroid was extensively degenerated, section showing a substance like apple jelly in many places.

CASE 170.—A hard irregular tumour reaching to the ribs on the right side. There was much free [illegible] adhesions to the omentum, [illegible] dominal wall. The walls of [illegible] one or two places during removal, and papillomatous growth from the inside of the tumour escaped No secondary deposits were seen anywhere. The pedicle was broad but [illegible] ovary was healthy The peritoneum [illegible] A swelling of the left shoulder-joint [illegible] disappe[illegible] n convergent strabismus occurred. [illegible] eye changes were due to embolism [illegible]. The eyesight gradually improved.

CASE 171.—A left ovarian cyst of the size of a uterus at seven months. It had grown between the layers of the broad ligament and upwards behind the peritoneum Extensive enucleation was necessary Three or four inches of the left ureter were recognised closely applied to the deepest part of the cyst and required very careful separation. Many bleeding points in the retroperitoneal "bed" required tying The gap in the peritoneum was closed with fine silk. The tumour contained clear sticky fluid measuring 214 ounces.

CASE 172 The left Fallopian tube was enormously dilated to about the size of a child's head (one year) There were many adhesions to the intestine and the back of the uterus. One bleeding point on the back of the uterus required an encircling suture. A tubal mole was found in the tube.

CASE 173.—A right ovarian cyst of the size of a uterus at seven months with twisted pedicle. It was adherent to the abdominal wall, the intestine, and the omentum. It contained dark fluid; 108 ounces. The left ovary was healthy.

CASE 174.—The uterus was uniformly enlarged to the size of that of two to three months which was thought to be due to fibroids. It was merely gener[illegible] being found. The patient suffered from [illegible]

CASE 175.—[illegible] cyst of the size of a uterus at seven months. There were adhesions to the back of the uterus The pedicle was broad and was tied in sections. The right ovary, which was cystic and of the size of a duck's egg, was also removed.

CASE 176.—The patient had been married seven and a half years. The uterus was retroflexed and bound down by adhesions There was dyspareunia. At the operation the tubes were found to be healthy; [illegible] ovaries were separated and adhesions b[illegible] wall by one silkworm gut the uterus [illegible] suture pass[illegible] uterine appendages. There

CASE 177. [illegible] were many pel[illegible] those and seve[illegible] tubes were mu[illegible]

CASE 178.—A [illegible] The left tube was the larger and [illegible] to reach to the umbilicus The left tube con- into the cavity of the cyst formed by the ovary. The left tube contained pus and burst during removal. A small fibroid of the size of a walnut was removed from the right side of the fundus uteri. There were many pelvic adhesions. The peritoneum was washed out with salt solution. *N.B.*—The tumour was thought to be uterine fibroids before operation.

CASE 179.—A fibroid tumour of the left ovary of the size of a goose's egg which was adherent to the sigmoid flexure. The Fallopian tubes were normal. Part of the abdominal wound broke down but ultimately healed soundly.

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[1] Part I. and the first portion of Part II. were published in THE LANCET of July 8th (p. 69) and 29th (p. 284), 1905, respectively.

CASE 180.—The tumour reached nearly to the umbilicus. There was an interstitial fibroid of the fundus and posterior uterine wall. The left ovary was removed with the tumour but the right ovary was not removed. Menorrhagia had been the chief symptom.

CASE 181. A left ovarian cyst which reached up to the umbilicus. It contained thin black fluid. The cyst burrowed between the layers of the broad ligament and had to be carefully enucleated. While doing this a portion of the left ureter came into view. There were adhesions to the intestine also. The right ovary was normal.

CASE 182.—A left ovarian cyst of the size of an orange which was very adherent in the pelvis and to the rectum. It contained dark fluid.

CASE 183.—A right pyosalpinx. On opening the abdomen the pelvic organs were seen to be roofed in by coils of intestine which were firmly adherent. On separating these it was found that the right Fallopian tube was greatly dilated and adherent everywhere, it contained fœtid pus and burst during removal. The uterus was firmly adherent to the rectum. During removal a hole was torn in the rectum. The patient died from shock in 24 hours.

CASE 184.—A multilocular left ovarian cyst containing bloody fluid and of the size of a child's head (one year), with twisted pedicle. There were adhesions to the intestine. The patient was four and a half months pregnant at the time of operation and did not abort after it. She was taken ill suddenly a few days before admission with symptoms of twisted pedicle.

CASE 185.—The left Fallopian tube was of the size of an orange and contained a tubal mole. The tube and ovary were removed. There were many adhesions to the intestine and in the pelvis. A small rupture had occurred at one part of the tube. There was a good deal of old blood clot in the pelvis.

CASE 186.—A double pyosalpinx. On the right side the tube had formed a tumour curiously twisted like a large whelk shell; it contained pus which could not be pressed out of the minute open end of the tube as this was closed in a valve-like manner by the tension of the fluid inside. The right ovary was removed with the tumour. The left tube was similar but smaller and was also removed. The left ovary was not removed. No tubercle bacilli were found in the pus.

CASE 187.—Both tubes were dilated and adherent to the ovaries and parts around.

CASE 188.—The tumour reached to the umbilicus and was thought to be a fibroid. On opening the abdomen free fluid was found. A soft, friable mass (like malignant ovarian) was seen growing from the anterior surface of the uterus. Hysterectomy was performed with difficulty as the broad ligaments were found to be thick and inelastic and apparently infiltrated by malignant growth. The patient died from peritonitis on the third day.

CASE 189.—Pregnancy in the right Fallopian tube. This showed no sign of rupture, it contained a fœtus two and a half inches long. The right ovary was not removed. This case must be regarded as "missed" tubal abortion.

CASE 190.—A tumour reaching rather above the umbilicus. There were multiple fibroids. The right ovary was removed with the tumour.

CASE 191.—Chronic inflammation of the uterine appendages. The right tube, which was adherent to the intestine, was removed with its ovary. The left tube was dilated, this was also removed. The left ovary was not removed. The tubes contained dark turbid fluid, not pus.

CASE 192.—A large multilocular ovarian cyst on the left side had burst and free fluid was found in the peritoneum. The pedicle was twisted. There was a similar smaller cyst of the right ovary. A lump was felt at the portal fissure of the liver of the size of a duck's egg, (?) malignant. No other secondary deposits were seen. The peritoneum was washed out with salt solution.

CASE 193.—A right ovarian cyst. There was a pyosalpinx on the left side which was firmly adherent to the uterus and rectum. The uterine tissue was friable and the uterus had to be removed. The patient died on the third day. The pyosalpinx burst during its removal.

CASE 194.—A hard, irregular tumour reaching to the umbilicus. Both tubes were dilated and therefore the uterine appendages were removed with the uterus. A part of one fibroid grew low down in the uterus and had to be enucleated.

CASE 195.—Both tubes were dilated and adherent to the ovaries and in the pelvis, especially on the left side of the rectum.

CASE 196.—A left ovarian cyst containing 15 pints of dark fluid. The right ovarian cyst was of the size of a duck's egg. There were no adhesions.

CASE 197.—A subperitoneal fibroid of the uterus of the size of a large orange with a narrow twisted pedicle. The tumour presented a blackish purple colour. Both ovaries were normal. On section of the tumour the surface generally was reddish black with circular yellow islets scattered over it.

CASE 198. The patient had been 36 hours in labour and the membranes had been ruptured 12 hours. A portion of the Fallopian tube was excised on each side. The child weighed 7 pounds 4 ounces. The mother and child did well. The patient's height was 4 feet 8 inches.

CASE 199.—An emergency operation. The abdomen was full of clot and fresh blood. The left Fallopian tube had ruptured and contained a tubal mole with an amniotic cavity of the size of a large walnut. The left tube and ovary were removed. The peritoneum was washed out with salt solution.

CASE 200.—A right multilocular ovarian cyst of the size of a uterus at term. There were no adhesions. The left ovary was healthy. The cyst contained 116 ounces of fluid.

CASE 201.—A large multilocular ovarian cyst reaching to three inches above the umbilicus. It contained thick glairy fluid. No adhesions were present.

CASE 202. A dermoid cyst of the left ovary of the size of a child's head (one year). This was removed without tapping. The right Fallopian tube, which was of the size of a forefinger, was closed at its fimbriated end and was adherent to the rectum, this was also removed. The right ovary was not removed.

CASE 203.—An ovarian cyst on the left side of the size of an orange. It was dense, adherent to the pelvis and to the rectum. The left Fallopian tube was dilated and it contained pus. The right tube was also dilated and closed, it was removed with part of the right ovary.

CASE 204. Fibroids forming a tumour which reached up to the umbilicus. The left ovarian cyst was of the size of an egg. The right ovary was normal except for a few adhesions to it which were broken down.

CASE 205.—A dilated left tube with an ovary somewhat cystic. It was very adherent in the pelvis. The right tube was similarly affected. Both tubes contained bloody fluid.

CASE 206.—A left ovarian cyst of the size of a duck's egg and a right ovarian cyst of the size of a hen's egg. Both contained dark tarry fluid and were more or less adherent in the pelvis. The uterus was moderately enlarged by multiple small fibroids, some of which were so placed as to interfere with the mobility of the uterus. The rectum was adherent to the back of the uterus.

CASE 207.—The patient was thought to be suffering from inflammation of the right uterine appendages. On opening the abdomen the ovaries and tubes were found to be healthy. the lump to the right was formed by a mass of omentum and intestine which was adherent to the appendix. My colleague, Mr. H. M. Rigby, took over the operation and removed the appendix.

CASE 208.—The patient was very ill on admission. It was thought that the tumour might be a large ovarian tumour with a twisted pedicle. Exploratory laparotomy was performed. The tumour was adherent to the abdominal wall half way to the umbilicus. The general peritoneal cavity was opened higher up. A solid red mass came into view, it had a smooth surface and occupied practically the whole of the abdomen. It presented a horizontal fissure and secondary fissures dividing it into lobes. It was like the spleen or the liver but these organs were not involved. About four inches of the descending colon was the only part of the intestine which was seen. The tumour passed into the pelvis and was firmly fixed there. None of the pelvic organs could be reached. Mr J. Hutchinson jun saw the case with me and considered it to be a retroperitoneal sarcoma. We both agreed that it was quite irremoveable. Nothing was attempted in the way of removal.

CASE 209.—One silkworm gut suture was put through the anterior surface of the uterus near the fundus, through the parietal peritoneum and the rectus on each side. The operation was for prolapse.

CASE 210. The left Fallopian tube contained pus and was adherent to a left ovarian cyst of the size of a Tangerine orange also containing pus. The right Fallopian tube was not closed or abnormal except for some filmy adhesions which were separated.

CASE 211. A flattened fœtus three inches long was found in an adventitious cavity in the left side of the pelvis with clot. The whole mass was of the size of a fœtal head at term. The left ovary was not removed. The inner part of the left tube was normal. The mass was certainly not in any part of the tube at the time of the operation. The right ovary and tube were normal.

CASE 212.—A fibroid growing out from each side of the uterus, causing a dumbbell shaped tumour. The right ovary was not removed. The tumour had caused retention of urine several times.

CASE 213.—A right hydrosalpinx larger than a large orange; this was sufficiently separated from the right ovary to allow of the latter being left. On the left side the dilated tube and ovary were both removed. There were a few film like adhesions about the dilated tubes.

CASE 214. The tumour was a large solitary interstitial fibroid of the anterior uterine wall. The mass was removed and weighed five and a half pounds. On section the tumour showed a surface like raw beef. The left ovary was not removed. The uterine cavity was between seven and eight inches long.

CASE 215. A left multilocular ovarian cyst reaching to the epigastric region. Tapping had to be performed three times before the cyst could be extracted. There was a right ovarian cyst of the size of a cocoanut; this had extensive adhesions in the pelvis which caused much trouble. Papillary growths were afterwards seen in the interior of both tumours.

CASE 216.—Pregnancy in the left tube which had just ruptured, causing a small amount of currant jelly clot in the pelvis on the left side. The left tube and ovary were removed. The ovum, a tubal mole, occupied the middle third of the tube, the fimbriated end of which was open and somewhat dilated. There was a rent in the posterior part of the tube. The right ovary and tube were healthy. Parotitis (right) came on within 24 hours but disappeared in a few days. I saw this patient on July 11th of the same year (1904) and she was then three and a half months pregnant normally.

CASE 217.—A large multilocular ovarian cyst of the size of a uterus at term, it was very friable. The other cyst was smaller and similar in kind. Free fluid was present in the peritoneum. There was a small patch at the bottom of Douglas's pouch suggestive of secondary deposit. The peritoneum was washed out with salt solution.

CASE 218.—The patient had been in hospital waiting for Cæsarean section, the intention being to operate as soon as labour began. On Jan 27th, 1904 I was told labour had begun and I at once operated. At the operation I found that the liquor amnii had all escaped and after extracting the body of the child through the ordinary uterine incision I could not get the head out as there was a well marked uterine contraction ring holding it round the neck. This ring had to be incised to get the child out. This, as might be expected, caused great hæmorrhage and in a place where it was difficult to stop it. This was done at last, but the patient died the same night. I found out afterwards that the waters had been noticed to have been coming away for four days. There was a generally contracted pelvis.

CASE 219.—A [illegible] the umbilicus [illegible] hed up to

CASE 220. A [illegible] A moveable knob of the size of an egg on the front of the tumour was subsequently found to be the middle third of the right Fallopian tube. This was adherent to the intestine omentum, and sigmoid flexure. The tube was bent down into the pelvis where its open, dilated, fimbriated extremity was fused with a mass of adhesions forming an adventitious cavity which was full of clot. The right tube was removed.

CASE 221. A right ovarian cyst of the size of a goose's egg. There were no adhesions. A part of the ovarian tissue beyond the cyst contained a well marked corpus luteum.

CASE 222. Fibroids reaching up to the umbilicus. The left ovary was adherent to the back of the uterus. It was separated from the adhesions but not removed. The right ovary was removed with the uterus. The fibroids had involved chiefly the upper part of the uterus. A small portion of the mucous membrane of the body of the uterus was probably left in the stump as the patient subsequently had a slight loss monthly. The patient was very anæmic before operation owing to menorrhagia.

CASE 223.—A fibroid growing from the left side of the uterus into the left broad ligament of the size of a fœtal head at seven months. This could not be brought up till the peritoneum had been incised and the tumour enucleated. The body of the uterus was not much altered. The left ovary and tube were removed with the tumour. The right ovary was not removed.

CASE 224.—A fibroid tumour of the uterus enlarging it to the size of a seven months gestation. After removing this carcinoma of the body extending into the cervical canal was found. The remainder of the cervix was removed from above. Both ovaries were slightly cystic.

CASE 225.—A dermoid cyst of the left ovary of the size of a cocoanut. This was removed without tapping; it was fairly adherent to the rectum. Some small fibroids in the uterus were not interfered with.

CASE 226.—A cystic subperitoneal fibroid of the size of a uterus at seven months; it was taken for an ovarian cyst before the operation. Omental adhesions were present. The right ovary was not removed. The fluid in the cyst was brownish.

CASE 227.—The symptoms dated from a confinement two months before the operation. The patient was a month in hospital before operation; she was feverish all the time. At the operation a right pyosalpinx was found; it was very adherent and burst during its removal. A left pyosalpinx was also present. Both tubes and ovaries were removed. The operation was very difficult. Convalescence was long. The patient went out on May 5th.

CASE 228.—The uterus was sutured to the abdominal wall by Kelly's method. A colporrhaphy (double) was performed three weeks later.

CASE 229.—A right unilocular ovarian cyst of the size of a hen's egg. The appendages were matted together; the tubes were thickened and adherent. A small subperitoneal fibroid at the fundus was not removed.

CASE 230.—A left dermoid cyst reaching to the umbilicus. There were adhesions to the omentum, the intestine, and in the pelvis. The right ovary and tube were healthy.

CASE 231.—A right ovarian cyst of the size of a uterus at six months. The wall was friable and broke in several places and papillomatous material from the interior escaped. The sigmoid flexure was adherent to the uterus and a hard ring-like thickening was felt in the sigmoid flexure, above which the descending colon was much dilated and evidently contained fæces. The opposite ovary was normal. After recovering from the ovariotomy the patient was transferred to the surgeon.

CASE 232.—A dermoid cyst of the right ovary of the size of a uterus at six months. There were adhesions to the intestine, omentum, and bladder. The left ovary and tube were also removed owing to some calcareous deposits being found in the ovary.

CASE 233.—A right multilocular ovarian cyst reaching to within one inch of the xiphoid cartilage. It contained 14 pints 12 ounces of fluid. The left ovary and tube were healthy. A fortnight after the operation a swelling was felt in the abdomen rising to the umbilicus and there was some bulging in Douglas's pouch. At this time for a week or so the temperature rose to 102° F. at night. All swelling disappeared in a week's time and the temperature became normal.

CASE 234.—The right Fallopian tube was much dilated and adherent to the ovary, also to the surrounding parts. On being opened it contained a tubal mole. The left ovary and tube were not removed. The case had been recognised as one of ectopic pregnancy and had been kept in hospital a month before operation, which was undertaken because pain persisted.

CASE 235.—A left tubal pregnancy; the fimbriated end was widely dilated and there was a large hæmatocele in the peritoneum. Attempted tubal abortion; there was no rupture of the tube. The tube was removed. This was a second ectopic pregnancy in the same patient, as she had been operated on two years before by Mr. Dean for tubal pregnancy on the right side. I was present at the operation. In opening the abdomen a second time the omentum and the small intestine were found adherent under the old scar.

CASE 236.—The uterus was enlarged by carcinoma of the body. Vaginal hysterectomy was attempted [illegible] time it was abandoned as it appeared imposs[illegible]ut from below. Abdominal panhysterectomy [illegible] deal of time was lost between the two operations. The patient had lost a good deal of blood and died from shock in 24 hours, in spite of intravenous injection of salt solution. I think that if I had begun with the abdominal operation the result would have been different.

CASE 237.—I had operated on this patient six months before for tubal pregnancy. On this occasion the pregnancy was in the left tube and there was a large amount of blood and clot in the peritoneal cavity. The ostium of the tube was widely dilated. The tube was removed. (This is the same case as No. 161 in this series.)

CASE 238.—A Cæsarean section (conservative); the child, a boy, was living. An attempt to sterilise the patient was made by excising loops of both tubes. The operation was performed about a week before full term. She had had three previous labours, two at term with forceps, the child on each occasion being stillborn, and one was induced at eight months, this child being also stillborn. She had a generally contracted pelvis; the conjugate was about three and a half to three and three-quarter inches.

CASE 239.—A left suppurating ovarian cyst of the size of an orange. There were numerous adhesions. Offensive pus escaped during removal.

CASE 240.—The operation was performed on account of menorrhagia. The sound passed for four and a quarter inches. There was a fibroid in the anterior wall of the uterus. The left ovary, which was slightly cystic, was removed with the uterus; the right ovary was not removed.

CASE 241.—Multiple fibroids. The tumour was of the size of a uterus at from three to four months. The right ovary was not removed; the left ovary, which was enlarged, was removed with the uterus.

CASE 242.—The left Fallopian tube was dilated and it contained a tubal mole. The tube was adherent to the rectum and the bladder, which stretched back over the dilated tube and had to be separated before the tube could be removed. The tube was dilated to the size of a goose's egg. The right appendages were normal.

CASE 243.—A right ovarian cyst of the size of an orange was adherent to the back of the uterus and in the pelvis. It contained bloody fluid. The left ovary and tube were matted by adhesions but these were separated and the left appendages were not removed. The ostium of the left tube was open, or it was opened [illegible] d's

CASE 244.—A right suppurating ovari[illegible] he head (one year). It was supposed to be a fibroid before op[illegible] The tumour patient had been feverish for some time before operation. The tumour was firmly adherent to the sigmoid flexure, the pelvis and the back of the uterus, and also to the omentum. The peritoneum was strippe off the right iliac vessels in separating the tumour, so that the righ ureter was exposed. The tumour was removed without bursting. I contained horribly offensive pus with flocculent green lumps. Th left ovary was normal. There was a subperitoneal fibroid of the size o a walnut at the fundus uteri.

CASE 245.—A large multilocular ovarian cyst (left) with twiste pedicle (one and a half turns in the same direction as the hands of watch). The tumour was adherent to the parietes, the large and smal intestine, the omentum, the bladder, and the uterus, as well as to th right uterine appendages. It contained black thin fluid. The peritoneun was washed out with salt solution. The last confinement had take place on Feb. 1st, 1904, and symptoms of twisted pedicle came on thre weeks later.

CASE 246.—A tumour of the size of the uterus at four months. Ther were interstitial and partly submucous fibroids, one of which wa undergoing cystic and mucoid change. The left ovary and tube wer not removed. The chief symptoms were menorrhagia and dys menorrhœa.

CASE 247.—Tubal pregnancy on the right side. A mass was found o the size of an orange, containing an amniotic sac and a fœtus two and half inches long. This lay partly free in the abdomen and partly in sa bounded by right tube and ovary. The latter contained the corpu luteum. The right tube and ovary were removed. The left ovar was not removed, but as the left tube was closed and dilated it wa removed. It contained bloody fluid. There was some free fluid in the peritoneum.

CASE 248.—The p[illegible] operation with a high [illegible] the abdomen and on [illegible] up. The left tube and [illegible] being universally adherent. It was uncertain whether pus was in the tube or outside it. The right uterine appendages being in a similar condition (though no pus was seen) were also removed. The patient died in 48 hours.

CASE 249.—A left ovarian cyst of the size of the uterus at seven months. It contained eight and a half pints of blood-stained fluid. There were no adhesions to the cyst, but the omentum stretched over it and was adherent to the anterior abdominal wall low down.

CASE 250.—The tumour reached up to the umbilicus. On operation it w[illegible] The peritoneum over the [illegible]e left iliac fossa directly and [illegible]t was enucleated from bene[illegible] the pus which it contained escaping freely. The left ureter was seen in relation with the base of the cyst. Neither the left ovary nor the tube was recognised as such. The right tube, dilated to the size of the thumb, was removed also with the right ovary.

CASE 251.—Operation for incomplete procidentia in a single girl where pessaries had failed.

CASE 252.—An emergency operation. The patient was admitted to hospital in a state of collapse and blanched, with a temperature of 96·5° F. and a pulse of 120. An intravenous infusion of saline fluid (five pints) was administered as the operation was begun. The peritoneum was full of blood and large clots. The pregnancy was in a rudimentary left uterine horn, which had ruptured. The amniotic sac protruded from the rent and had not burst until the operation. The fœtus was of the size at three months.

CASE 253.—The tumour reached to within two and a half inches of the umbilicus, to the right of the middle line. It was very tender. At the operation free blood and large clots were found in the peritoneum. The pregnancy was in the right tube, which had ruptured. The tube and ovary were removed.

CASE 254.—A left ovarian cyst rather larger than a cricket ball; it contained yellow turbid fluid. A small cyst in the right ovary was punctured and this ovary was left, as the patient particularly wished this done if possible.

CASE 255.—A right ovarian cyst. The pedicle was twisted one turn in the direction of the hands of a watch. It contained 26 pints 4 ounces of black fluid. There were no adhesions.

CASE 256.—At the operation numerous loose adhesions were found between the intestine, the bladder, and the omentum. These easily separated. Then a tumour of the size of a hen's egg was felt in the region of the left appendages. It was very adherent to the rectum and in the pelvis. Scissors were used partly in separating the tumour. Pus escaped as the tumour was being freed. The uterus was stitched up with one silkworm-gut suture as the patient had prolapse. She died nine days later from peritonitis.

CASE 257.—A left multilocular ovarian cyst containing jelly-like fluid. It reached two and a half inches above the umbilicus. There were no adhesions. [illegible] The

CASE 258.—A flattened and [illegible] true conjugate was estimated [illegible] operation was performed a we[illegible] expected. No attempt was made to sterilise the pati[illegible] was under the incision into the uterus. At a previous labour on July 10th, 1902, delivery was accomplished by cephalotripsy.

CASE 259.—The tumour was of the size of the uterus at three to four months. It had caused retention of urine several times. After removal the fibroid was found to be undergoing mucoid change. Both appendages were removed with the uterus. The left ovary was slightly cystic.

CASE 260.—A tumour of the size of a uterus at three months. There was an interstitial fibroid at the fundus undergoing marked cystic and mucoid change; the spaces on section were filled with jelly. Both Fallopian tubes were thickened and closed. The right appendages and left tube were removed with the uterus. The left ovary was not removed. The patient had had dysmenorrhœa and menorrhagia for a long time and was very anæmic at the time of the operation.

CASE 261.—A multilocular ovarian cyst on each side of the size of a child's head (one year). There was a large quantity of free fluid in the peritoneum at the operation. One cyst had burst before the operation. The walls of the cysts were very friable and contained yellowish fluid. No adhesions were present. The patient was four and a half months pregnant at the [illegible] and she miscarried within 24 hours. It was o[illegible] of a uterus at

CASE 262.—A [illegible] ortions of the eight months, a relatively large proportion [illegible] The fluid in tumour really consisting of a multitude of small cysts.

the cysts would not flow through the cannula. The uterus, which was moderately enlarged by fibroids, was not interfered with.

CASE 263.—A hard tumour, thought to be a solid ovarian; evidently calcified in parts. At the operation an oval tumour about three inches long by from one to two inches broad was found imbedded in adhesions in Douglas's pouch. Its surface was calcified. On section it showed a grey leather-like surface. The ovaries and uterus were not involved by adhesions or connected with the tumour in any way.

CASE 264.—A right multilocular ovarian cyst of the size of a child's head. There were no adhesions. The left ovary was healthy.

CASE 265.—Chronic inflammation of the uterine appendages; both tubes were closed and dilated to the size of a finger and were densely adherent in the pelvis. The pain dated from a confinement nine years before.

CASE 266.—Multiple fibroids. There was one subperitoneal fibroid of the size of a fœtal head, which grew from the fundus and lay in the pelvis adherent there by recent adhesions. This fibroid on section showed softening and on scraping the surface material like cream cheese came away. The right ovarian cyst was of the size of a hen's egg; this was removed with the uterus. The left ovary was not removed.

CASE 267.—On opening the abdomen a considerable amount of free fluid was found. A cystic tumour was seen springing from the right side of the pelvis, it was more or less fixed. On inspection of the deep aspect of the tumour a large papillary mass was found about the middle of the lumbar spine. This projected freely into the peritoneal cavity and had infected the intestine and other parts where growths of a similar nature were seen. The cyst burst during this investigation. Nothing further was done as the growths were obviously malignant. The patient died eight days later.

CASE 268.—A left tubo-ovarian cyst containing fœtid green pus. The outer (ovarian) part of the cyst, which was of the size of an orange, burst while getting it up. There were many adhesions in the pelvis. The peritoneum was washed out twice with salt solution.

CASE 269.—A right multilocular ovarian cyst of the size of a fœtal head. There were no papillomatous growths on the inner surface. The left Fallopian tube was thickened and adherent at the back of the broad ligament. This also was removed; it was found to contain blood clot.

CASE 270.—A left ovarian cyst reaching to the umbilicus. It had burst before the operation and there was chocolate-coloured free fluid in the peritoneum. The uterus, which was considerably enlarged by multiple fibroids, was also removed. The right ovary and tube were not removed.

CASE 271.—At the operation there was much recent blood in the peritoneum. It was a right tubal pregnancy. The tube had ruptured within one inch of its fimbriated extremity, which was open. The right ovary contained a well marked corpus luteum. The right tube and ovary were removed. The peritoneum was washed out with salt solution. The left ovary and tube were healthy. The patient was very anæmic.

CASE 272.—The operation was performed for uterine prolapse.

CASE 273.—Ovariotomy (double).

CASE 274.—A dermoid cyst of the left ovary reaching up to the umbilicus. The pedicle was twisted one and a half times in a direction opposite to that of the hands of a watch. There was intense congestion beyond the twist. Also a dermoid of the right ovary of the size of a potato. There was a little free fluid in the abdomen. There were no adhesions. Both tumours were removed entire. The pulse was 140 before operation and the temperature was 101·4° F.

CASE 275.—An operation had been performed four years previously by another operator in the country. He had only removed part of the tumour, leaving all the pelvic portion and presumably suturing the cyst to the abdominal wall. The patient had had a sinus from three to four inches deep, discharging freely ever since. I reopened the abdomen, having previously tied up the mouth of the sinus, and removed the rest of the tumour which was of the size of half a cocoanut. It was densely adherent to the rectum and the uterus. Two inches of the right ureter were exposed in dissecting up the tumour. The tumour was more or less solid and suggested malignancy, but I heard that the operator four years before had said that the tumour seemed malignant, so perhaps it may not prove so. The patient now is quite well and has no sinus.

CASE 276.—A large right ovarian cyst. It contained 21½ pints of greenish fluid. There were no papillary growths nor were there adhesions. The left ovary was healthy.

CASE 277.—A left tubo-ovarian cyst containing three-quarters of a pint of thin yellow fluid. The area of the tumour formed by ovarian tissue was well shown by a clearly defined white line. The right ovary was normal.

CASE 278.—The tumour reached to the umbilicus. The right ovary was cystic and was removed with the uterus. The right appendages were adherent to the uterus. The left ovary was not removed.

CASE 279.—A solid tumour occupying the greater part of the abdomen. At the operation it was found to be a large subperitoneal fibroid connected with the fundus uteri by a pedicle half as thick as the wrist. To the posterior (under) surface of the tumour about 12 inches of small intestine and mesentery were closely adherent and required very careful separation and the bleeding points on the intestine several ligatures. During this operation an indiarubber cord was tied round the pedicle of the tumour, as its surface was [illegible] the adhesions were [illegible] freely. The body of the uterus and the ovaries were not interfered with. The tumour weighed 12 pounds.

CASE 280.—A year previously the patient had had an incision made [illegible] in the left iliac region. Pus had come out and had continued to be discharged freely till the time when she came under my observation. With Case 275 in mind I thought it possible to deal with it. At the operation the sinus was found to be walled in by adherent bowel, it led to a portion of the left tube and ovary. The sinus was [illegible] in communication with the general peritoneal cavity. A right pyosalpinx and ovary were removed at the same time. The patient died from peritonitis in three days.

CASE 281.—Pregnancy in the right Fallopian tube. This was adherent in the pelvis. Its fimbriated end was closed. There was no free blood in the peritoneum. The right tube contained a tubal mole and was removed with the right ovary which contained a corpus luteum.

CASE 282.—Chronic inflammation of the right Fallopian tube and ovary. These were adherent in the pelvis. The uterus was bound down in the position of retroflexion by old adhesions. These were separated and the right tube and ovary were removed. Some small fibroids in the uterus were not removed. The operation was undertaken for chronic pain.

CASE 283.—The body of the uterus with a fibroid in the fundus was removed. The ovaries were not removed. After suturing the peritoneum over the cervical stump this was sutured to the abdominal wall as the patient had had prolapse.

CASE 284.—The tumour reached up to the umbilicus. The right ovary was removed with the uterus. The left ovary was not removed. (Chronic pain and menorrhagia.)

CASE 285.—A large left ovarian cyst bigger than a uterus at term. It had grown under the peritoneum and had completely separated the layers of the left broad ligament. The transverse colon was in front of, and adherent to, the tumour. Several inches of the left ureter were dissected from the base of the cyst which required extensive enucleation. The cyst contained thin black fluid. The abdominal wall was very fat.

CASE 286.—An irregular hard tumour reaching nearly to the umbilicus. At the operation there was found a subperitoneal fibroid at the fundus and an interstitial fibroid of the anterior uterine wall. The ovaries were not removed. (Menorrhagia and dysmenorrhœa.)

CASE 287.—A left multilocular ovarian cyst reaching to the epigastric region and causing great abdominal distension. It contained 20 pints 15 ounces of fluid. One portion of the cyst was composed of solid tissue like that of a fibroid, this had been felt in Douglas's pouch. There were adhesions to the omentum.

CASE 288.—A left ovarian cyst reaching to a hand's breadth above the umbilicus. It contained 11 pints 4 ounces of thin yellowish fluid. The right ovary was normal.

CASE 289.—A tumour reaching half way to the umbilicus. There were interstitial fibroids at the fundus and in the posterior uterine wall. The ovaries were not removed.

CASE 290.—A hard, irregular tumour reaching to above the umbilicus. The catamenia had ceased for five years. For the last few months the patient had had several slight losses of blood. On opening the abdomen a good deal of free fluid was found. Numerous secondary malignant growths were seen at various parts of the peritoneum. The tumour being obviously malignant the wound was closed.

CASE 291.—A hard, irregular tumour reaching to the ribs on the left side. Œdema of both legs was present. The deeper portion of the uterus and fibroids in it could not be got up till the peritoneum had been incised and this part of the mass had been enucleated. There were no adhesions. There was no trace of the right uterine appendages. The left ovary was not removed. The mass removed weighed 4 pounds 5 ounces.

CASE 292.—A tumour reaching to the umbilicus. Fibroids. One large interstitial fibroid lay in the supravaginal cervix and could not be brought up till the peritoneum had been incised and enucleation performed. This left a large raw surface with many bleeding points, to control which many encircling sutures were used. The left ovary was not removed.

CASE 293.—A right multilocular ovarian cyst reaching to the xiphoid cartilage. It contained 15 pints of dark fluid. The pedicle was twisted. There were adhesions to the abdominal wall and omentum. The left ovary was normal. There was œdema of the vulva before the operation.

CASE 294.—A right ovarian cyst reaching up to the umbilicus. On tapping it evidently contained papillary growths. Some pelvic adhesions were present. At one place there was a papillary growth on the outer surface of the right tumour. There was a left ovarian cyst of the size of a cocoanut, partly glandular, partly papilliferous. There were papillary growths of the size of shot on the intestine and at various points over the pelvic peritoneum. The uterus was slightly enlarged by small fibroids.

CASE 295.—Ovarian cysts of the size of large apples, one papillomatous on the outside. The left one was rather adherent in the pelvis. A lobulated subperitoneal fibroid was the chief tumour. Myomectomy was tried but the pedicle seemed to be unsafe, so hysterectomy was performed. Some other fibroids were found in the uterus. There was some free fluid in the peritoneum.

CASE 296.—The tumour in the abdomen reached to within one and a half inches of the umbilicus. There was a right ovarian cyst with twisted pedicle and many close adhesions to the small intestine. The left ovary was normal.

CASE 297.—A left ovarian cyst of the size of an egg; it was adherent to the rectum. The right ovary was healthy.

CASE 298.—A right multilocular ovarian cyst reaching three fingers' breadth above the umbilicus. The fluid would not pass through the cannula. There were some adhesions and while separating these the cyst burst.

CASE 299.—Both Fallopian tubes were dilated and closed externally and were adherent to the ovaries and the parts around. The left tube contained turbid thick fluid. The left ovary, which was enlarged to the size of a bantam's egg, contained half an ounce of greenish pus. The right tube contained yellowish green pus.

CASE 300.—Exploratory laparotomy in a case of carcinoma of the body of the uterus. Numerous secondary growths were found at various parts of the peritoneum remote from the uterus, therefore the wound was closed.

A CASE OF BLACKWATER FEVER.

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THE following case of hæmoglobinuric fever may be of some interest, partly owing to its comparative rarity and partly owing to the fact that it is seldom, in the tropics, that so thorough an examination of the blood and urine can be made as was done in this case by my colleague, Dr. A. Balfour, director of the Wellcome laboratories in the Gordon College, Khartoum, to whose assistance I am much indebted.

The patient had had a previous attack of blackwater fever about eight years ago, which was probably contracted in Central Africa and which developed in this country. He had had repeated attacks of malarial fever during the last four months—the rainy season up the Blue Nile—which he told me he did not trouble much about; he took quinine often in large doses up to 60 grains in a day. On Oct. 2nd he had apparently an ordinary attack of malaria. On the 3rd hæmoglobinuria commenced. The patient was rather alarmed owing to his previous attack. He was seen by an Egyptian practitioner. His bowels were opened and he passed a large quantity of urine which was very dark, almost black, in colour. The urine was not examined microscopically or spectroscopically nor was the patient's blood examined, as there was no good microscope in the station The morning temperature was 101° F. and that of the evening 103°. On the 4th the condition of the patient was the same as on the previous day. He was reported to have passed 1900 cubic centimetres of urine in the last 24 hours which was almost black in colour. The temperature in the morning was 100·6°, rising to 105° in the afternoon and dropping to 103° in the evening. He was given a hypodermic injection (10 grains) of quinine in the morning and in the evening. On the 5th a similar condition prevailed. He was first seen by me at 6.30 P.M., when he was exceedingly blanched, with lips quite yellow. There was distinct jaundice though not deep in colour and frequent vomiting occurred, chiefly of bile. He was passing a large quantity of very dark urine and had very urgent desire to micturate but there was no pain in the loins. There was a good deal of headache and the patient was very restless and had had no sleep for the last two nights; the pulse was very fair. At about 7 P.M., contrary to orders, he got up to use a night stool and fainted; on coming round he was seized with a most severe attack of dyspnœa, with acute anginal pain over the cardiac region. I applied the only remedy at hand—a mustard leaf—which gave almost instant relief. He was taking very little nourishment but drinking a quantity of soda water and some champagne. The injection of ten grains of quinine was repeated morning and evening. The bowels were opened three times. The temperature in the morning was 100° and in the evening it was 102°. Ten grains of sulphonal (all that was available) were given with no result. Two grains of calomel were also given. On the 6th the patient was carried on to a steamer at 6.30 A.M. to go to Khartoum. No medicine was given on the journey. Milk and soda water and Benger's food were given every hour in small quantities and were well taken. There was no vomiting; there was some hiccough. The temperature was taken every two hours and only varied from 101·4° to 102°. The patient passed a great deal of urine, about eight times on the journey. I thought that that passed in the afternoon was of a lighter colour but could only judge by pouring it overboard. We arrived at Khartoum at about 6.30 P.M after 12 hours' journey. The patient had complained rather of the throbbing of the engines but had stood the journey well. He was most carefully wrapped up and screened from any chance of a draught on the journey. His bowels were not opened till after his arrival in hospital. He was given 20 grains of sulphonal at about 6 30 P M and five grains of calomel at about 10 P M. No more quinine was given. He still had a good deal of hiccough. On the 7th he had had a very fair night. He was rather delirious all day and seemed not to recognise anyone. He took nourishment very well—milk, soda water, Benger's food, barley water, and brandy (three ounces). Examination of the urine of the previous night resulted thus: it was hardly blood-stained; it gave a slight blood reaction; it was acid and contained some albumin; the sediment consisted of degenerated red blood corpuscles, numerous blood and epithelial casts, and tailed cells from the renal pelvis. Examination of the blood films taken the previous night was as follows: there were no parasites; there was marked degeneration of red corpuscles which stained badly and were vacuolated. Poikilocytes were present, as well as many polymorphonuclear leucocytes and blood plates. The patient had a weak pulse, was very restless, and had a good deal of hiccough. In the morning a pint of warm salt solution was injected into the rectum and half of it was retained. Two pints were similarly injected in the evening, one being retained. The patient passed a good deal of urine. His pulse averaged about 124; it was thin and compressible. His temperature varied from 100·8° to 101·2°. He was given bicarbonate of sodium (10 grains) four times in the day. On Oct. 8th he had had a bad night but was less delirious. He passed a number of small irritating stools during the night and all the day. There was no undigested milk in the stools. The rectum was washed out with an enema of warm water. He was still taking nourishment uncommonly well. There was no vomiting but still a good deal of hiccough. The blood contained no parasites. The urine showed a trace of albumin but no blood and very few casts and epithelial cells; it was very acid and full of uric acid crystals. The temperature varied from 101·4° to 102·4°. The pulse averaged about 120 and was weak. The patient was frequently sponged with tepid water and given some bicarbonate of potassium (15 grains) three times in the day. His general condition seemed improved. The urine was free from hæmoglobin, but his temperature was higher than on the previous day and he had a good deal of hiccough and diarrhœa. The jaundice and anæmia remained the same. On Oct 9th he had passed some irritating stools during the night. He was given half an ounce of Kutnow's powder. He was less delirious but the hiccough continued. There were no parasites but some myelocytes were present in the blood. There was a quantity of uric acid in the urine. The temperature at 7 A.M. was 101·8°, at 11 A.M. it was 101·2°, and at 3 P.M. it was 103°. The patient seemed distinctly worse but I was not sent for. The temperature at 6.30 P.M. was 104° when the patient was seen by me. The pulse was 124 and soft. He was much worse; he was given a subcutaneous injection of quinine (seven grains) and sponged with tepid water. The temperature at 8 P.M. was 103·4°; at 9.30 P.M. it was 104·4°. He was then put in a warm pack for 20 minutes and afterwards wrapped in hot blankets for an hour. He did not stand the pack at all well, complained bitterly, and was with difficulty prevented from tearing the blankets off. He was given another hypodermic injection of quinine (seven grains) and a feed of hot Benger's food with an ounce of brandy. Only slight reaction of the skin was produced At 10.30 P.M. his pulse was very weak and he was transfused with a pint of warm salt solution (one drachm to the pint) into the cellular tissue of the side and a hypodermic injection of strychnine (five minims) was given. At 11 P.M. the pulse was a little better and the temperature was 103°. His arms and face were then sponged with iced water which seemed most soothing. On Oct. 10th at 1 A.M. his temperature had dropped to 102·6° and he was dozing. At 2.30 A.M., while dozing, a sudden change took place and he died very quickly.

No thorough post-mortem examination was made but a portion of the liver and the spleen were examined by Dr. Balfour with the following result. The spleen: macroscopically its consistence was almost fluid; it was dark purple in colour; microscopically there were no parasites present and very little trace of malarial pigment. The general condition was somewhat like that found in splenic anæmia. The liver: macroscopically it was of a yellow, shrunken consistence, like leather; microscopically there were cloudy swelling, areas of degeneration, and atrophy of the hepatic cells; it was studded with yellow pigment; there was scarcely any trace of true malarial pigment. Slight cirrhosis was present but there were no parasites.

Remarks—I think there is no doubt that we have here a case of hæmoglobinuric or blackwater fever. The symptoms of hæmoglobinuria, icterus, biliary vomiting, and acute anæmia occurring during an attack of malarial fever are typical and yet post mortem we find only a trace of malarial pigment in the liver or spleen, the condition of the former being somewhat similar to that of a case of acute yellow atrophy of the liver. This naturally brings up the question of the real connexion between hæmoglobinuric fever and malarial fever and the administration of quinine. We have a patient from a malarial district having frequent attacks of malarial fever, during one of which hæmoglobinuria occurs. In the absence of any means of examining the blood for parasites the administration of quinine was obviously indicated and in this case ten grains were injected four times over a period of two days. They cannot in this case have increased the hæmoglobinuria as that ceased within 24 hours of the last injection.

It is a great pity no film of blood was taken for future examination before the first injection of quinine. It was noticed that very extensive bruising occurred at the site of the injections, but I think the injections, none of which were administered by me, were given subcutaneously instead of intramuscularly.

In all cases of severe malarial fever there is a great liberation of hæmoglobin which is precipitated in the form of yellow pigment in the liver; if this is still more excessive hæmoglobinuria is produced. This liberation of hæmoglobin cannot be simply from the infected corpuscles as it is far in excess of the number of infected corpuscles, continues after no parasites can be found in the blood, and non-infected corpuscles are found deficient of hæmoglobin. This bears out Sir Patrick Manson's theory that part of the hæmoglobin only is derived from these infected corpuscles which when sporulation occurs set free some toxin which is able to liberate hæmoglobin from uninfected corpuscles. This would account for the continuation of the hæmoglobinuria when there are no parasites in the blood.

How long does this toxic action last after parasites are absent from the blood? In this case the first specimen of blood examined was taken on the night of Oct. 6th and no parasites were found though at this time there was hæmoglobinuria. 24 hours later there was a trace of albumin but no hæmoglobinuria. Unfortunately, we are unable to say whether there were parasites in the blood on the 3rd, 4th, or 5th. With the cessation of hæmoglobinuria on Oct. 7th one would expect a more marked improvement than was the case if the toxin was only a liberator of hæmoglobin. May it not have some other toxic effect, or to what was the continuation of the fever due and the severe recurrence of fever on Oct. 9th? There had then been no parasites found in the blood for four days, nor were any found in the liver or spleen a day later. Yet on the assumption that the recurrence of fever on the 9th must be malarial in origin the injections of quinine were repeated.

This recurrence of fever in a patient, weak and exhausted from this drain of hæmoglobin, was the cause of death, though it cannot be called hyperpyrexia. The temperature went up to over 104° but was to a certain extent controlled by treatment. The least depressing methods of diaphoresis were employed—e.g., ice-sponging and wet pack accompanied with stimulants, brandy, strychnine, and saline infusion. No diaphoretic drugs were used except quinine. Free passage of urine and the absence of all renal pain were hopeful signs but I consider the persistent hiccough a useful sign for an unfavourable prognosis. I have seen no previous mention made of the great excess of uric acid crystals in the urine.

The treatment seems unsatisfactory. I did not understand the rationale of the treatment by large doses of calomel or chloroform pushed to intoxication, so these were not given. Quinine was given for the reasons mentioned. Other treatment was purely symptomatic. The treatment by bicarbonate of sodium appeared in some article on this disease lately and seemed indicated by the enormous amount of uric acid in the urine.

Khartoum.

TWO CASES OF ACUTE HÆMORRHAGIC PANCREATITIS.

BY H. W. WEBBER, M.D., M.S. LOND., F.R.C.S. EDIN.,
ASSISTANT SURGEON TO THE SOUTH DEVON AND EAST CORNWALL HOSPITAL.

CASE 1.—A man, aged 61 years, was suddenly seized with acute abdominal pain on July 24th, 1904. He had appeared to be in his usual health the same morning and after breakfast had walked a distance of about a mile to church where he was a regular member of the choir. About 12 o'clock sudden violent epigastric pain attacked him; he was taken to his home and medical assistance was summoned. In the afternoon the pain continued with signs of collapse and some abdominal distension. Dr. A. B. Soltau saw him in consultation with Dr. M. L. Griffin and thought the symptoms pointed to a ruptured gastric or duodenal ulcer. At 11 P.M. (Mr. S. F. Lynch assisting) I opened the abdomen by a four-inch median epigastric incision and the cavity was found to contain clear blood-stained fluid but no gastric or duodenal contents. The stomach and duodenum were rapidly examined for perforation, none being found, and it was then discovered that the normal outline of the pancreas was replaced by a tumour composed principally of coagulated blood of the shape and size of a closed fist which bled immediately it was handled. The patient being in no condition to stand a search for the exact source of the bleeding a thick gauze plug was passed well into the hæmorrhagic mass and brought out through the parietal incision which was partly closed by mass sutures of salmon-gut. A hypodermic injection of morphine (a quarter of a grain) and strychnine ($\frac{1}{30}$th of a grain) was given. The patient never rallied and died about six hours after the completion of the operation. No post-mortem examination could be obtained.

CASE 2.—The patient was an American, aged 59 years, but looking at least ten years older. He was said to have worked very hard at business for several years. He landed at Plymouth on the evening of June 11th, 1905, apparently as well as usual, and at 10 P.M. had some strawberries and an apple. At about midnight violent abdominal pain seized him with vomiting, and this continuing at 3.30 A.M. Mr. H. H. Parsloe saw him and gave him a quarter of a grain of morphine hypodermically. This was repeated at 10.30 A.M. on June 12th. At 5 P.M. on that day he tried to get out of bed, pain returned with intense collapse, and he became cold, grey, and pulseless. With the injection of brandy and strychnine, the application of a mustard leaf to the præcordium, and hot bottles to the extremities, he partially recovered from his collapse and at 6.30 P.M. I saw him with Mr. Parsloe. He was then ashy grey in face with coldness of the whole body, except the parts kept warm by the hot bottles and friction. The pulse could just be felt at the wrist. The abdomen was soft; it was not at all distended; there was no dulness anywhere or local swelling; there was some tenderness on palpating the epigastric area. The rectum was empty. The patient did not recover from his collapsed condition and died about midnight (June 12th).

Necropsy.—At the post-mortem examination (on June 15th) there was no free fluid or gas on opening the peritoneal cavity. The gastro-hepatic omentum was distended with blood clot. The stomach presented a remarkable appearance, a subserous layer of clot covering the upper two-thirds of the anterior surface, leaving its lower third of the normal whitish colour. The gastro-colic omentum, transverse colon, and great omentum were normal, but on turning these upwards to examine the posterior surface of the stomach a considerable amount of clot was seen through the posterior layer of the transverse mesocolon. On tearing through this and raising the stomach the source of the hæmorrhage was found to be the pancreas which was represented by an irregular hæmorrhagic mass of clot and pieces of pancreatic tissue. The whole mass of stomach and clot, &c., was removed for further examination but circumstances causing this to be deferred for two days it was then found in an advanced state of decomposition.

The antecedent personal history in the second case threw very little light on the patient's condition. Some years previously a successful operation for radical cure of a right inguinal hernia had been performed and for some months before his last illness he had complained of breathlessness on exertion.

In the first case there was a definite history of an injury. Seven months previously the patient, while rising to leave his seat on the outside of an electric tramcar, was thrown by a sudden jerk of the car violently against the handrail, striking himself on the left side of the lower part of the chest and fracturing his seventh rib. From this accident he made a very slow recovery, it being more than three months before he was able to resume his occupation.

Plymouth.

RUSSIAN ODONTOLOGICAL CONGRESS.—On July 17th the Fourth Pan-Russian Odontological Congress opened in the Blagorodny Society's Hall, St. Petersburg. There is little of the business done at the congress that is reported further than that it was decided that in future the Odontological Congress should be held every two years and that the next should be held in Moscow in June, 1907. The sitting of July 19th had to be suspended owing to disorders through a difference as to allowing an unqualified person to give an address; but on the 20th, according to the *Sviet*, those who went to attend found a notice posted on the door of the meeting place saying that the congress was finally closed and that the excursion by steamer would not take place by order of the Governor-General of St. Petersburg, which order was supported by a detachment of police.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

LONDON HOSPITAL.

A CASE OF TORSION OF THE OVARY IN A HERNIAL SAC.

(Under the care of Mr. HUGH M. RIGBY.)

A FEMALE child, aged three months, was admitted into the London Hospital on March 17th, 1905. On the previous day the mother had noticed a swelling in the right groin which was tender and appeared to cause the child a good deal of pain. It had gradually increased in size and the skin had become inflamed over it. The child had not vomited and the bowels had acted as usual each day. The following condition was found on examination. A globular tense swelling extending up to the right external ring occupied the upper part of the right labium majus. It was elastic, appeared to be very tender, and the overlying skin was inflamed and slightly œdematous. The swelling stopped abruptly at the external ring but a narrow neck could be made out passing up into the abdominal cavity. The swelling was irreducible and an impulse could not be detected. The abdomen was not at all distended. The child was ill-nourished and undersized but did not appear to be acutely ill. The swelling was thought to be an inflamed encysted hydrocele in the canal of Nuck.

Shortly after admission to the hospital an operation was performed as follows. An incision made over the swelling revealed a sac containing dark fluid blood. When this was evacuated a dark purple body, smooth and oval in shape, presented. When this was freed from the sac wall with the finger the Fallopian tube, easily recognised by its fimbriæ, was seen. The purple structure was evidently the ovary, deeply congested, nearly black, and very much enlarged. A narrow neck was found at the internal ring composed of broad ligament and Fallopian tube acutely twisted on itself. The neck was untwisted, transfixed with a pedicle needle, and ligatured with catgut. The ovary and tube were then removed. The right horn of the uterus appeared at the internal ring, apparently tethered in this position by a structure which felt like a shortened round ligament. The skin incision was then closed and a drainage tube was inserted. Owing to the child's condition no attempt was made to dissect out the sac or to close the ring. The subsequent progress of the case was uneventful.

Remarks by Mr. RIGBY.—Similar cases have been recorded by Lockwood,[1] Owen,[2] Morgan,[3] and Schnitzler.[4] They agree with my case in that they presented almost identical clinical signs and symptoms. The hernia was on the right side in every case. All the children were quite young—namely, 11 weeks, six months, six months, and eight months respectively. In each a tender, inflamed, irreducible swelling was present in the groin and the contents of the sac as revealed by operation were identical.

Lockwood draws attention to the fact that the ovary lies in front of the tube, thus reversing the normal condition in the pelvis. Schnitzler lays emphasis on the fact that in these cases of twisted ovary in a hernial sac the symptoms of intestinal obstruction and peritoneal irritation are practically absent. In my case this was a noticeable feature, there was no vomiting and the abdominal signs of disease were *nil.* In Owen's case some vomiting had followed the appearance of the tumour but in all the other cases this phenomenon was absent. This is in striking contrast with cases in which torsion of an ovarian pedicle occurs within the abdominal cavity; in these vomiting and acute abdominal symptoms are the rule. The laxity of the broad ligament which forms the neck of the herniated ovary accounts for the ease with which a twist may occur, even to the extent of two or three times on its own axis. This is on a par with the excessively long mesorchium which is found in cases of torsion of the corresponding male organ. It is possible that a shortened round ligament associated with a patent canal of Nuck may play some rôle in the production of a hernia of the ovary on the same side. It probably accounts for the fixation of the fundus of the uterus in the neighbourhood of the corresponding internal ring. Le Dentu[5] considers that strangulation of a herniated ovary and tube is generally due to a band formed by the round ligament.

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[1] Lockwood: Brit. Med. Jour., June 13th, 1896.
[2] Owen: THE LANCET, March 21st, 1896, p. 765.
[3] Morgan: THE LANCET, May 15th, 1897, p. 1340.
[4] Schnitzler: Wiener Klinische Rundschau.
[5] Le Dentu et Delbet, Traité de Chirurgie, 1897, p. 819.

Reviews and Notices of Books.

Strength and Diet: A Practical Treatise with Special Regard to the Life of Nations. By the Hon. R. RUSSELL. London, New York, and Bombay: Longmans, Green, and Co. 1905. Pp. 649. Price 12*s.* 6*d.* net.

THE subject of national physique has attracted considerable attention recently and it is natural that the kindred question of diet should be brought into corresponding prominence. In medical publications many contributions to this subject have been made and we are glad to find a layman writing a book upon diet as affording a sign that general interest has been aroused on the national importance of food and drink in relation to health. It was therefore with considerable expectations that we opened the present volume and studied the author's views. We must frankly confess that we are disappointed in the substance of the book before us. The propositions which the author sets himself to prove are three in number: that under favourable conditions man can thrive on almost any kind of diet; that *ceteris paribus* vegetarian races are stronger and happier than nations living chiefly upon animal food; and that frugal persons and nations live better and longer than others and are more free from disorders of body and mind. The first and third of these will provoke little opposition in medical readers; the second is more controversial in character. When we examine the substance of the book which is intended to afford proof of these three propositions we find that it consists for the most part of a series of quotations from the works of other writers, and while admitting the modesty of the author who thus relies not upon his own observations or theories but on those of others, we must confess to finding the method as here exemplified unsatisfactory. The author shows most commendable impartiality in setting forth alike the opinions of those who are recognised authorities and of others who can hardly be included in such a category—of those who share his vegetarian views and of those who declare for the ordinary mixed diet affected by the majority of mankind. Little attempt is, however, made to coördinate the information given.

The book opens with an introduction which sets forth some evidence that civilised peoples are degenerating and includes incidentally a formidable list of ailments which "a medical man" has attributed to disorders of digestion; among them are included "consumption (alcoholic)"—apparently not meaning the consumption of alcohol—"bladder, kidney, and brain troubles; impure blood, nervous tremblings, &c.; cancer ...... coughs of many kinds ...... heart troubles of various kinds, hypochondria (*sic*), hysteria ...... lung troubles, neuralgia, noises in the ears, drunkard's paralysis, piles, rheumatism, sleeplessness, shingles, decayed teeth, dyspepsia, and uræmia." The list is as formidable as that of the maladies cured by any patent medicine but the author assures us that it falls short of the reality. Chapter I. deals with the proper diet of man as indicated by anatomical considerations and the author decides that our resemblance to the apes, which are frugivorous, proves that the proper diet of mankind is vegetarian. We doubt whether the argument is sound, since it would be easy to select, for example, two birds much more closely resembling one another than a man and an ape, yet one of which was carnivorous while the other lived only upon seeds and vegetable matter. The argument for vegetarianism derived from man's anatomical characters—teeth and intestines—is not very cogent. Nor is that derived from a consideration of the comparative longevity of different species of living creatures at all convincing, since the long life of the tortoise and of the elephant can be paralleled by that of the whale and of the crocodile. But we are anticipating the order of the chapters of the book before us. The second chapter is devoted to a discussion of the comparative values of foods, while the third deals with the food of different kinds of animals. Chapters IV. and V. are devoted to the diet of ancient and mediæval peoples, while Chapters VI. and VII. deal with the food of existing races and communities. Chapter VIII., headed Personal Experiences and Observations, does not, as might be expected, contain a summary of the author's own conclusions but a collection of dicta of distinguished and other persons on the matter of diet. Subsequent chapters deal with medical testimony on dietetics with stimulants and narcotics, with diet in relation to disease, notably cancer, and with its regulation in training for athletics.

On the whole we can agree with the author in many of his conclusions, notably in his views that most well-to-do people at the present day eat too much, especially too much meat; that many drink too much tea; and that stimulants and narcotics are not at all necessary for healthy persons. We cannot admit, however, that a reasonable amount of animal food is harmful, at all events for nations living in temperate climates; nor do we think that the somewhat vehement insistence upon the horrors of flesh-eating which we here find, even when enforced by the anecdote of the child who on returning from feeding a pet lamb was horrified at reading a recipe for the cooking of sheep's head, is quite adapted to convert thoughtful persons to vegetarianism. However, we must admit that in his account of the diets of different nations the author has brought together a large quantity of interesting information and that his earnestness and diligence are beyond praise.

Psychological Medicine: A Manual on Mental Diseases for Practitioners and Students. By MAURICE CRAIG, M.A., M.D. Cantab., M.R.C.P. Lond. London: J. and A. Churchill. 1905. Pp. 449. Price 12s. 6d. net.

THIS work is intended to meet the requirements of the general practitioner and the student. It is essentially practical, as becomes its character and aim. A few preliminary pages are given to normal psychology but the space at disposal is no doubt limited. A separate primer of psychology might better meet the needs of the student in this direction.

Under Classification of Insanity the schemes of various authors are given. It is held that the only satisfactory classification is one on a pathological basis and this our present knowledge does not permit of. The author employs a general scheme drawn up from various classifications—a good working scheme but an unsystematic one. We prefer the more logical scheme of Krafft-Ebing, which is based on the presence or otherwise of constant pathological lesions. A chapter on General Symptomatology deals with various elementary manifestations of perverted mental function and various disorders of bodily function (vascular, respiratory, trophic, and the like) therewith associated. As the reader's attention is directed to the importance of noting the shape and the size of the head it would, we think, have been as well to point out that the body, as a whole, may be profitably examined for evidence of defect and abnormality and to have referred to the subject of the signs of degeneration, briefly indicating its bearings on the study of the insane. Under States of Excitement it is taught that a necropsy on the body of a patient who has died from acute mania reveals no signs of organic disease. There are surely exceptions to this rule and in acute delirious mania there are frequently very marked hyperæmia and œdema, facts of which we find no mention in the paragraphs on morbid anatomy. Some might prefer to say that death in cases of acute mania, including acute delirium, is due to toxæmia rather than to "exhaustion resulting upon starvation" as is taught here, but our present ignorance of the pathogenesis of these conditions precludes definite statement and renders argument unprofitable. Amongst methods of treatment of acute mania the prolonged bath is very properly recommended. Unfortunately, the Commissioners in Lunacy, by declaring the method to be a form of restraint where a cover is used, have practically put an end to this excellent form of treatment.

The subject of dementia præcox is treated on the lines of Kraepelin's teaching but the author would prefer to reserve the designation for the hebephrenic form, considering that the catatonic and paranoidal forms are with difficulty distinguishable from catatonic stupor and paranoia occurring at other periods of life. Later, he states that the diagnosis between the paranoid form and paranoia "may appear somewhat difficult. Nevertheless, the diseases are very different when carefully studied." The first statement, pointing to a real difficulty so great that the author would rather not include the paranoid cases under dementia præcox, is hardly consistent with the second which indicates an apparent difficulty only. The wisdom of describing stupor and catatonia in one chapter and the kinds of dementia præcox, some of which are not distinguishable from them (and no attempt is made under "diagnosis" of the latter state to distinguish them) in another is very doubtful. The practical result of this would seem to be the description of the same condition twice over merely because it happens to occur at different periods of life. In passing we may be allowed to protest against the perpetuation of the term "anergic stupor," that fascinating redundancy which has cast a spell over many generations of alienists. Paranoia, secondary and "organic" dementia (the latter a common designation but open, we think, to criticism), and the epochal insanities are adequately treated on the usual lines.

Senile insanity is divided into "functional" and "organic" psychoses for reasons of convenience; we agree with the author that this is not a scientific classification. The distinction between partially curable and incurable cases can be drawn, if necessary, on clinical lines. The intoxication psychoses are well described; the important differential diagnosis between alcoholic pseudo-paralysis and general paralysis is very well summarised. The chapter on General Paralysis is good. We do not notice any reference to the subject of the examination of the cerebro-spinal fluid. It appears to be certain that lymphocytosis is always present in chronic meningitis and it is, according to certain authorities, one of the early indications of progressive paralysis, in which connexion the subject of cyto-diagnosis assumes considerable importance. The traumatic neuroses and neurasthenia are briefly considered and we think they rightly find a place in a treatise on mental disorder.

Under Epilepsy and Insanity it is stated that "all the work of the present time goes to corroborate the view that the epileptic convulsion is largely dependent upon some vaso-motor disturbance in the cerebral cortex." But experimental work (to some of which reference is made) as apart from speculation makes out, we think, a better case for the toxic basis of epilepsy. Under the heading of Treatment we think a reference to the method of eliminating chloride of sodium from the diet in conjunction with bromide treatment (Toulouse and Richet) would have been desirable. There is a useful chapter on Insanity and Physical Disease. Defective mental development is considered under the usual headings. Ireland's term, "genetous idiocy," is employed to designate a class. Surely the bulk of idiocy is "genetous" and the expression connotes nothing whereby a class is distinguishable. How can this expression adequately demarcate "a class of congenital idiot which does not rightly fall under any other division"? Discussing "moral insanity" the author gives classes of individuals in whom the moral sense may be affected; he thinks the term, if used at all, should apply to his class (*b*), "some children otherwise apparently normal." Why not also to class (*c*), "some men of genius"? Useful chapters follow on Feigned Insanity and the Relationship of Insanity with Law. Referring to medical certificates the author asks whether it is possible that the ready granting of such in doubtful cases of illness has led the lawyer to distrust in some instances the value of the evidence of medical men. In his gentle method of reproof the author displays a charming courtesy. Under Treatment we find a reference to the need for the prevention of the propagation of insanity. As regards "correction" of the insane (a term the author evidently prefers to "punishment"), it is represented that luxuries and pleasures can be stopped with benefit "apart from any desire to punish." The patient will probably judge from the action; for him there will not be much difference between correction and punishment. The book contains 22 excellent plates, mostly illustrative of the morbid histology of the cortex cerebri in mental disorders.

Notwithstanding that this work appears to lend itself in places to criticisms of the kind made above we believe that, as a whole, it is well adapted to the requirements of the class for which it is primarily intended. Avoiding, as far as possible, vagueness and theorising the book conveys practical information in a clear and an easy style and is characterised by good, sound sense.

New Methods of Treatment. By Dr. LAUMONIER. Translated and edited from the second revised and enlarged French edition by H. W. SYERS, M.A., M.D. Cantab., Physician to Out-patients, Great Northern Central Hospital. London: Constable and Co. 1904. Pp. 321. Price 3*s.* 6*d.* net.

THERE are three prefaces to this book—one by the translator; one by the author, dated October, 1902; and a third also by the author, or perhaps it would be more correct to say an extract from a preface to the second edition, dated October, 1903. In one of these there is a sad picture of the plight of the medical practitioner who has scant leisure to read and his patient "who is often better acquainted with the latest fashion in therapeutics than is frequently supposed." The author's aim has been to supply "definite and complete information" concerning the new drugs and methods of treatment the worth of which has been established and which are sufficiently well known to be described in a "definite and practical manner." The translator is not so sanguine about the permanent value of the observations contained in this book since he states that it must include an account of a considerable number of methods which in the near future will be more or less likely to be replaced and superseded by others.

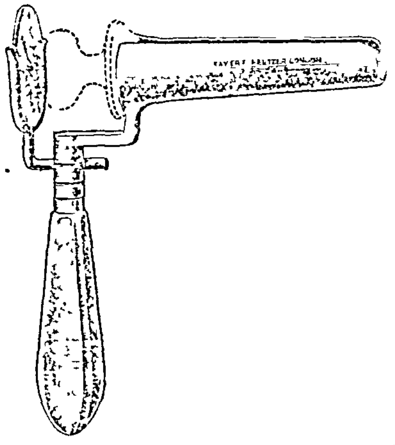
The subjects cover a wide range, including not only nutrition and blood alterants, respiratory, renal, and vaso-motor alterants, but also the curious group described under the heading of "Opotherapy." Sero-therapy, nerve alterants, antipyretics, and antiseptics are also dealt with. The different sections are very unequal. The section on the vaso-motor alterants seems unduly brief and that on opotherapy unduly long. With regard to the administration of opotherapeutic agents we are told that the method of ingestion by the mouth is by far the best (p. 197), but the enumeration of the different organs employed would act as a deterrent from general acceptation of this principle. There is much that is of interest concerning glycerophosphates, dionin, heroin, and some of the newer antipyretics, but many drugs of recent introduction are not included.

The translator states that he has endeavoured to bring the text into line with the English style and methods. French is so generally read with facility that the task appears to have been unnecessary. Many sentences in the English version are obscure and in the desire to ascertain the meaning the reader is under a constant temptation to try to translate back into French.

New Inventions.

NEW IMPROVED RECTAL SPECULUM WITH MAGNIFYING LENS ATTACHED.

ALL who have had much special practice in rectal surgery know too well how difficult it is in many cases to explore and to ascertain accurately the appearances *in situ* of growths, ulceration, &c., and to observe the normal and abnormal mucous surface of the rectum some inches up from the anal orifice. After careful exploration with the finger one would always like to have an ocular inspection of the cause of pain such as is produced by ulceration, hæmorrhage, abnormal growths, piles, or polypi in this region, and for such a purpose I have had an improved rectal speculum constructed which is easy of introduction with a split or space at the side and open at each end, provided with a wooden plug, and having at its lower end a convenient handle to hold it by. Attached to the outer opening of the speculum is a metallic half-circular rim for the purpose of receiving a powerful magnifying glass lens which can be moved in any direction but can at the same time, if necessary, be permanently fixed by screwing the handle up tight so as to grip the metallic bar which holds the lens. This speculum and lens I have been using for the last few months and it admirably carries out the object in view. It largely magnifies and thus enables the surgeon to see plainly the exact condition of the mucous surface of the lower rectum. I have to thank Messrs. Mayer and Meltzer, 71, Great Portland-street, London, W., for the satisfactory manner in which they have carried out my ideas in its construction.



The plate which illustrates this description accurately depicts the speculum in question. To throw light into the speculum when introduced into the rectum a small electric light can be used with great advantage.

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THE BRITISH MEDICAL ASSOCIATION.

MEETING AT LEICESTER.

THE annual dinner was held in the County Assembly Rooms on July 27th when a large company sat down under the chairmanship of Mr. G. Cooper Franklin, the President. After the toast of "The King" had been duly honoured the toast of "The Imperial Forces" was proposed by the Bishop of Nottingham who remembered seeing the last wooden warship and the first ironclad. This was acknowledged by Fleet-Surgeon J. Lloyd Thomas and then followed Mr. M. O. Buzzard, K.C., who submitted the toast of "The British Medical Association." He asserted that the Association had done great service to the public as well as to the profession. After Dr. H. W. Langley Browne (chairman of the Council of the Association) had suitably responded, Dr. F. M. Pope proposed "The Mayor and Corporation of Leicester," to whom he said was due the success of the meeting. The Mayor of Leicester responded and paid a high tribute to the medical profession. The toast of "The President and Members of the Local Committee of the British Medical Association" was intrusted to Archdeacon Stocks, who discoursed on the marvellous progress of medicine and surgery and then discussed the virtues of the local committee. Mr. Franklin, the chairman, acknowledged the toast and then proceeded to give the toast of "The Guests," which was responded to by Professor Howard Kelly, whose speech met with a warm and enthusiastic reception. By this time the evening was far advanced and the subsequent proceedings were of an informal character.

Many of the members and their friends accepted the opportunity afforded to them of visiting the scene of some of Leicester's industries. The chief industries comprise the manufacture of boots and of hosiery, and Leicester also possesses more than one cigar factory. As an example of a boot factory the premises of the Coöperative Wholesale Society were visited and the various stages of the manufacture of boots were followed with interest.

The premises of Messrs. John Richardson and Co., Limited, manufacturing chemists, of Friar-lane, attracted very general interest, and quite large parties went through the various departments watching the processes concerned in the production of extracts, tinctures, tablets, pills, &c. The manufactory occupies a large site and the general arrangement of the departments was admirable, including a research laboratory, tincture rooms, percolation rooms, a pill mass factory, and so forth.

Those who travelled to Leicester by the Midland Railway route were impressed with the excellent service of that line and the ample accommodation afforded in the trains. In most of the trains a sumptuous and comfortable luncheon and dining car was included, in which an excellent, because simple, meal was served at a moderate price. The lavatory accommodation was also good. The fastest trains accomplished the journey, which is one of just upon 100 miles, in 105 minutes. The Great Central Railway has also a good service of trains and their route lies through the prettier country of the two.

The nineteenth summer general meeting of the Irish Medical Schools' and Graduates' Association, which we are informed now numbers 856 members, was held on July 26th at the Young Men's Christian Association building, Leicester. There was a very large attendance of members. In the absence of the President, Sir William Whitla (Belfast), who wrote to express his regret at being unable to be present, Mr. Alfred Freer, as the senior foundation member present, was voted to the chair. The chairman called on the Provincial Honorary Secretary to address the meeting in reference to the question of the monopoly of honorary hospital appointments in England. The Provincial Honorary Secretary then detailed the efforts that had been made—in four cases successfully—to have the exclusive rule repealed which restricted these appointments to those holding the diplomas of two particular colleges. He said that there was prominent in the English character the love of justice and that when the governors of any institution in which the restrictive rule existed had it brought home to them how unfair it was (now that all territorial distinctions were abolished by law between the three kingdoms as regards medical qualifications) to put obstacles in the way of those holding such high qualifications as the Fellowship of the Royal College of Surgeons in Ireland and the Membership of the Royal College of Physicians of Ireland they gladly carried out the principle of the "open door" and repealed the obnoxious rule. But the difficulty was the expense of bringing the facts of the case under their notice. He was glad, however, to say that with the prospect before them of a large accession of new members the Council had determined to enter soon upon another assault on a monopoly fortress and he was sanguine of the same success as had attended similar efforts at Bristol, Hastings, Brighton, and elsewhere. The proceedings concluded with a vote of thanks to the chairman, who said he was old enough to remember the instructions which he received in Dublin 50 years ago from the teachers in what still was recognised as the best practical school of obstetrics in the United Kingdom, if not in the world.

The annual luncheon of the Continental Anglo-American Medical Society took place at Leicester on July 27th. Professor Osler presided and was supported by the following members of the society: Dr. StClair Thomson, Dr. H. E. Leigh Canney, Dr. W. Page May, Dr. H. O. Hobson, Sir Michael Foster, Dr. D. E. Anderson, Dr. M. W. Gairdner, and Dr. F. M. Sandwith. Amongst the guests were Professor R. W. Boyce (Liverpool), Dr. W. J. Tyson (Folkestone), Dr. W. Ewart (London), Dr. P. Watson Williams (Clifton), Professor A. R. Cushny, Dr. Bertram L. Abrahams (London), Dr. A. J. Chalmers (Colombo), Dr. Camac (New York), and Dr. G. Wells (Chicago). There were no formal speeches but Dr. Sandwith reminded the members that the next meeting of the society will take place in Paris in October during the Congress on Tuberculosis when it is hoped that there may be an unusually large gathering. Dr. Ewart, on behalf of the guests, returned thanks to the society for the hospitality shown to them.

The number of members of the British Medical Association attending the annual meeting who play golf has of late been gradually increasing and this year they were especially fortunate in the enjoyment of the hospitality of the Leicestershire Golf Club. On July 28th a match was arranged between England and Scotland, Wales, Ireland, and the Colonies in which the victory rested with the representatives of England. Before the match a very enjoyable lunch at the golf-house was partaken of by the players. A vote of thanks to the Leicestershire Golf Club for its great hospitality was proposed by Dr. J. Playfair, President of the Royal College of Physicians of Edinburgh, and cordially seconded by Dr. F. M. Pope. The President of the Leicestershire Golf Club, Mr. B. W. Russell, duly acknowledged this compliment and then the match commenced. The result was as follows:—

ENGLAND *v.* "THE REST."

England.		*"The Rest."*	
F. Bolton Carter...	1	F. Todd	0
Nathan Raw...	0	George Rose...	0
T. J. Verrall...	1	Chalmers Watson	0
J. Thompson	0	M. Moore	1
A. Eddowes	0	R. R. Young...	0
J. H. Mummery...	1	H. A. Latimer	0
K. W. Goadby	0	Ewen McClean	1
W. Dutton	0	C. Pattison	1
B. Boyd Joll	1	C. R. Salisbury	0
R. Lamb	1	N. Walker	0
T. G. Ouston	0	H. Taylor Young	0
E. E. Creasy...	1	J. Playfair	0
J. F. Colyer...	1	Sinclair White	0
T. Brown	1	T. Shennan	0
	8		3

We publish the following story which one of our representatives on his way to the sections heard at a labour meeting in the Market-square at Leicester, not at the British Medical Association, firstly, because it has a medical flavour and, secondly, because it shows that the working-classes are quite alive to the manner in which they may be cheated. There was a man in ——— who kept a small draper's shop and who had an assistant who was new to the business. One day an old lady came in and asked for some silk. The youthful assistant showed her some, saying, "We can do this for you at 6*s.* 6*d.* a yard." The old lady asked for something better but the assistant replied that they had nothing better. Whereupon the master came forward and said to the assistant, "I'm surprised at you showing this lady stuff of that quality, take it away and put it back on its shelf." Then, turning to the customer, he said, "You must excuse my assistant, madam, he is new to the business but if you will allow me I will show you something very superior." He went away and returned bringing the same piece of silk. "This, madam," he said, "is a very superior article, 10*s.* 6*d.* a yard. If it were not for the fact that I bought it some time ago we should have to charge you 15*s.*, for, as you are doubtless aware, owing to the recent epidemic among the silkworms the price of silk has increased enormously of late." The customer took the silk, paid for it, and went away. The draper thereupon lectured his assistant, saying, "You'll never make a man of business, you've no commercial adaptability; mark my words and remember what I said for the next time." A few days later the draper was having his dinner, leaving his assistant at the counter. Hearing a noise he looked out and saw the same old lady belabouring his assistant with her umbrella. He separated them and asked the assistant what he had been doing. "Oh," said the assistant, "I was merely carrying out your instructions. She asked for some tape and I showed her some. I said, we can let you have this at 8*d.* the dozen yards. If it wasn't for the fact that we have had it in stock some time we should have to charge 1*s.*, for, as you are doubtless aware, owing to the recent epidemic among the tapeworms, the price of tape has gone up enormously of late. Then she hit me with her umbrella."

THE SECTIONS.

MEDICINE.

THURSDAY, JULY 27TH.

Dr. HOWARD H. TOOTH (London) opened a discussion on

The Pathology, Diagnosis, and Treatment of Various Forms of Acute Meningitis.

He said that during the last year 45 cases of meningitis of various forms had been under observation at St. Bartholomew's Hospital. They were tabulated as follows:—

Variety.	Recovered.		Died.		Total.	
	M.	F.	M.	F.	M.	F.
Tuberculous	0	0	13	9	13	9
Posterior basic	4	2	5	0	9	2
Pneumococcic	0	0	0	2	0	2
Streptococcic	0	0	3	0	3	0
Purulent (undetermined)	1	0	3	3	4	3

Such factors as might be considered of importance in differential diagnosis were briefly considered and among others the following: 1. Earliest symptoms of onset. 2. Duration. 3. Mental symptoms. 4. Eyes: optic neuritis, common in tubercle, less so in other forms; earliest appearance of optic neuritis. 5. Squint: mostly internal; very common; often transitory; almost invariable in the posterior basic form. 6. Other forms of paralysis. 7. Tonic muscular spasm; retraction of the head; opisthotonos; rigidity of limbs (Kernig's sign), almost invariable in posterior basic, less so in other forms; cerebellar irritation, its probable cause; hypertonicity of cerebral origin (for example, in spastic diplegia) contrasted with cerebellar; the variability of reflexes in cerebellar. 8. Fever: general remarks on types; the relation of the pulse and respiration to fever; tendency to progressive acceleration of the pulse and respiration, irrespectively of the temperature. 9. Lumbar puncture. The prognosis was most favourable in posterior basic cases as a whole. Out of 11 cases six recovered. The chances of recovery seemed to be greater the older the patient. Tuberculous and pneumococcic cases were invariably fatal. The mortality would appear to depend on the generalisation of the inflammatory process, this tendency being least marked in posterior basic cases.

Dr. T. J. HORDER (London), in dealing with the pathological aspect of the subject, insisted on lumbar puncture as of prime importance in determining the nature of the organisms which could be directly demonstrated or inferred from the chemical and histological characters of the fluid. The needle employed should be three and a half inches long in the case of adults and two and a half inches in that of children. A line across the iliac crests traversed the fourth lumbar vertebra and the puncture might be made either above or below in the third or fourth interlaminar space, the needle being directed from a point half an inch to one side of the middle line forwards, inwards, and upwards. The cerebro-spinal fluid should flow spontaneously without the aid of suction whether disease was present or not. When clear and free from albumin or cells it might be considered healthy. Albumin and cells were present with meningitis and in greater quantity when pyogenic organisms were present, polymorphonuclear cells being especially plentiful (90 per cent.), whereas in tuberculous and meningococcic cases scanty and small lymphocytes were found. The meningococcus was most often found but was sparsely distributed. For cultures a blood agar medium proved the most satisfactory, but in 15 tuberculous cases these proved sterile. In two cases rapid improvement appeared to follow puncture. The blood examination demonstrated a high leucocytosis in meningococcic infection, a medium one in tuberculous, and the smallest in streptococcic, owing probably to the intense intoxication. In pneumococcic and meningococcic disease the blood stream was infected so that there was some general septicæmia, and in cases showing pneumococci and meningococci with nasal and aural discharge these organisms were demonstrable in them. 50 per cent. of the tuberculous cases were generalised from glands in children and from the joints, bones, or lungs in adults. The distribution of the organisms in meningococcic infection was hæmophilic (intracellular). Injection of cultures in animals induced virulent blood infection but not the characteristic lesions. Pneumococcic infection was either pure or mixed with others. The surgical cases involving the ear and nose were mostly streptococcic. Local mixed infection appeared less common than was ordinarily stated and was usually secondary to old ear disease, but mixed infections of the blood and general system were common. Post-mortem examination showed pia-arachnoid disease, but in middle-ear suppuration the subdural space was principally affected. Suppuration occurred most rapidly with pneumococci, rather less so with streptococci, and though fatal meningococcic cases proved purulent this was probably not the case in life and in those which recovered. Tuberculous effusion occurred principally at the base of the brain and in the Sylvian fissures but there was some variation. The pneumococcus and meningococcus produced effusion in the posterior basic region. All cases of acute meningitis were cerebro-spinal.

Professor W. Osler (Oxford), referring to epidemics of cerebro-spinal meningitis, said that the disease was limited to certain districts or cities; it never became pandemic. During the past six to eight months cases had occurred in some numbers in New York and in Silesia after an interval of 30 years. A few cases occurred also in Ireland. Sporadic cases followed on epidemic. Posterior basic or cerebro-spinal meningitis must be regarded as one of the most fatal diseases of early life, although from 30 to 50 per cent. of the sporadic cases recovered. Pneumococcic and meningococcic forms were easily mistaken for one another. The germs presented but slight vitality outside the body. They occurred in the buccal and pharyngeal secretion and had been isolated in 9 per cent. of healthy men in the nasal mucus. Entry was probably effected through the sphenoidal cells rather than by the ethmoidal foramina. Contagiousness was illustrated by the conveyance of the disease with fatal effect to medical attendants and nurses and resembled that of pneumonia; it was also shown by a series of rapidly fatal cases in a house epidemic. In one series of 93 cases of meningitis investigated 35 proved to be tuberculous and 32 meningococcic. Meningococcic meningitis was characterised by the occurrence of purpura and sometimes arthritis. The spinal sometimes overshadowed the cerebral symptoms and in all cases the specific coccus could be identified by lumbar puncture. Recovery was limited to this form of leptomeningitis, 17 of the above-quoted 32 cases getting completely well, though in one case sight was lost. On the other hand, the 21 pneumococcic cases, all the tuberculous and the mixed infections of tubercle and streptococci, as well as the pure streptococcic ones, died. Lumbar puncture should be repeated when the tension of the cerebro-spinal fluid was high (300 millimetres). As in pyæmia the meningococcus might invade the circulation, occurring in the joints. The exudate on the meninges cleared off, as had been observed in one case which had been exposed in operation and which died some months later from paraplegia.

Dr. H. Montague Murray (London), referring to the duration of cases, said that those in which the onset was definite lasted about one month, while others with indefinite onset were protracted to three months.

Dr. F. M. Pope (Leicester), the President of the Section, made some remarks on cases of pneumococcic cerebro-spinal meningitis. He also referred to a case of pachymeningitis hæmorrhagica in a child exhibiting signs of intracranial pressure whose cranium was opened, allowing escape of fluid from the subdural space, but who subsequently died.

Dr. C. N. B. Camack (Cornell University) spoke of the value of examination of the nasal secretion and of the various micro-organisms which had been identified, including the micrococcus catarrhalis and the influenza bacillus.

Dr. S. West (London) described the curious periodicity of respiration in meningitis: (1) Cheyne-Stokes form with intervals of 40 seconds of apnœa and then periods in which the respirations attained a maximum of 120 per minute, the general average being maintained; and (2) grouped respiration with pauses of ten seconds, slow and equal, so that the total only amounted to from eight to ten per minute. Recovery sometimes occurred in the latter form, never in the former.

Dr. StClair Thomson (London) said that suppuration occurred in the accessory cavities of the nose as frequently as in the middle ear of the child and called for the more systematic investigation of the nasal cavities in post-mortem examination. He referred to cases of cerebro-spinal rhinorrhœa and of sinusitis which proved fatal.

Dr. W. B. Warrington (Liverpool) described some points in staining the organisms and referred to a case in which the finding of pus by lumbar puncture had contra-indicated operation for abscess in connexion with the ear.

Dr. T. F. S. Caverhill referred to a recent outbreak of cerebro-spinal meningitis in which fatal cases had been returned as pneumonia, in one case a boy who had gone to bed well being found dead next morning.

Dr. Tooth, in reply, said that pneumococcic meningitis accounted for some very rapidly fatal cases. He also suggested that many epileptic cases might be the sequels of recovery from cerebro-spinal meningitis.

Dr. Nathan Raw (Liverpool) read an interesting paper entitled

Human and Bovine Tuberculosis, with Special Reference to Bovine Infection in Children,

in which, while confirming the German view of the difference between the two micro-organisms, he insisted upon the danger of bovine tuberculosis to human beings in that they were liable to contract tuberculosis in either form, though the distribution and course of the disease might be diverse. Bovine tuberculosis affected young people, was traceable to infected milk, and affected the tonsils, the alimentary tract, the glands, and, through the blood, the meninges, the bones, the joints, and other parts, while human tuberculosis was air-borne and affected adults by way of the lungs as pulmonary phthisis. In evidence of this Dr. Raw indicated the rarity of pulmonary phthisis in infants and children and, on the other hand, the comparative rarity of other than pulmonary lesions in adults, and suggested, further, that early tuberculous disease, presumably bovine, appeared to be protective against phthisis, as the development of pulmonary tubercle was relatively rare in those of a strumous diathesis who had suffered in infancy from bone and gland lesions. It might be, similarly, that cattle would be protected against bovine tuberculosis by the attenuated virus of the human form. Dr. Raw stated that it was not uncommon to find from 20 to 25 per cent. of cattle in various herds suffering from tubercle, though in only about 2 per cent. were the udders affected; but even then there would be a plentiful supply of bacilli in the mixed milk. This matter was of great importance in the inspection of cattle and dairies and also in connexion with imported milk products, as the disease was more prevalent in some countries, such as Denmark, than in England. In an investigation of 400 cases of tuberculosis in infants in only two cases could the possibility of infection be traced to the mothers, all the others having been fed on cow's milk.

Dr. R. Pratt (Leicester) said that the source of tuberculous infection was easily discoverable in cattle, as pus and blood were removed from the tuberculous udders with the milk. In an investigation into the dust of certain tenements it was found that the material obtained from the houses in which tuberculous persons lived contained the bacilli while that of the dwellings of healthy people did not. In the process of separating and sterilising milk the amount of dirt and foreign matters, including mucus and such things as had been already mentioned, was astounding.

Dr. F. H. Jacob (Nottingham) reported the discovery of tubercle bacilli in milk microscopically.

Sir William Broadbent (London) emphasised the importance of the statements made, which meant that they must accept two distinct varieties of tubercle.

Dr. West said that there were rare cases in which pulmonary tuberculosis resulted from direct extension from caseous glands. The stress of the disease evidently fell on different tissues at different ages. Whatever view was held they were driven back to the origin of tuberculosis in milk and their first duty was the rectification of the milk question.

Dr. F. J. Poynton (London) read a paper upon

The Employment of Citrate of Sodium in the Feeding of the Infant.

Two years' experience of the method had confirmed him in the opinion of its value which was indicated in a paper published in The Lancet of August 13th, 1904. The principle of the method consisted in adding citrate of sodium to cow's milk and thus altering the clot. The acid caseinogen combined with the sodium of the sodium citrate to form a casein curd which was of lower molecular weight than when calcium was the base, and hence the curd was finer and looser. The calcium, on the other hand, combined with citric acid to form calcium citrate which, much diluted by the stomach contents, was absorbed into the system and was not lost to the economy. The changes in the curd were illustrated by a series of tubes and Dr. Poynton insisted that this method was quite different in effect from the well-known device of adding sodium bicarbonate, which, as he demonstrated, hardly altered the consistence of the clot. This method was serviceable (1) in weaning the healthy infant; (2) for enabling the child to take cow's milk in a more concentrated form; and (3) for correcting milk dyspepsia. It was cheap and did not introduce the danger of scurvy. On the other hand, it was not a powerful remedy in the sense of being antibacterial or antitoxic, nor would it be effectual in dyspepsia from excess of fat. A very useful routine proportion was one grain of citrate of sodium to the ounce of milk. This could be increased if necessary to two or three grains to the ounce.

Dr. H. W. GARDNER (Shrewsbury) spoke in confirmation of the value of this method of treating milk both in adult invalids and in infants.

SURGERY.

THURSDAY, JULY 27TH.

The meeting of the section commenced with a discussion on

The Treatment of Malignant Disease of the Rectum,

which was opened by Sir CHARLES B. BALL (Dublin), the President of the section. He first showed a series of lantern slides which illustrated chiefly the anatomy of the rectum, but some showed the varieties of new growth. He pointed out that the published statistics of radical operations for the removal of malignant disease varied considerably, both as regards the immediate mortality of the operation and the question of recurrence. The subject had been previously discussed at an annual meeting of the Association but it was thought that the time had come when it might be useful to review the large amount of work already accomplished, to endeavour to estimate the real progress that had been made, and to define the scope of the various operations for extirpation of carcinoma of the rectum. No sensational innovations were to be looked for at present but they could study with a judicial mind which methods should be accepted as standards until the time came to which all looked forward with confidence when the cause of cancer should be discovered and they should learn how its cure might be effected, perhaps by a hypodermic injection or some rays. Of recent years the results had been more encouraging and this might be due to many causes, such as early diagnosis, the better selection of cases, greater attention to the preparation of the patient, and improved methods of operation. An early diagnosis was of the first importance, for only too often were cases seen in which slight diarrhœa had gone on for months or a considerable loss of blood at stool had been attributed to piles when a simple rectal examination would have revealed a cancerous mass which, left undetected, became incapable of removal. The importance of these slight symptoms was now more widely recognised and therefore many more cases were seen at an early stage of the disease. Digital examination was, as a rule, simple, as the ordinary form of adenocarcinoma generally lay within reach of the finger. The operation of radical extirpation of malignant disease of the rectum had been much discredited by operations on cases which were far too advanced, for in these the immediate risk was great and if the patient should survive the operation recurrence was almost certain to follow. Statistics, as in so many other cases, were most misleading in carcinoma of the rectum but it was certain that if the columnar-celled carcinoma of the rectum was operated on early, before the tissues surrounding the rectum were much involved, the results were admirable, both as to the immediate recovery and as to freedom from recurrence. In his own practice there had been several cases of undoubted columnar-celled carcinoma which had survived the operation for from 10 to 15 years without any recurrence. In selecting a case for operation attention should first of all be paid to any evidence suggesting the presence of secondary infection either in the liver or the deep lymphatic glands of the abdomen. Then the mobility of the malignant mass should be examined and if found to be freely moveable the case was suitable; but every increase in the degree of fixation increased the dangers and difficulties of the operation and the probability of recurrence. The preliminary preparation of the patient was of great importance. The patient should be fed with food likely to leave but little residue and the bowels should be freely opened with purgatives for four or five days before the operation, and on the day preceding the operation a copious enema should be given to empty the colon completely, while on the night before the operation an opiate would check the peristalsis. The rectum should again be washed out two hours before and immediately preceding the operation with a 2 per cent. solution of creolin. In this way it was possible to diminish largely the risk of infection of the wound. If it were not possible to effect this through evacuation of the colon on account of the tightness of the stricture a previous colotomy was clearly indicated but in most cases this would be unnecessary, and, indeed, objectionable, as it caused delay and subjected the patient to a double operation. As to the method of operation, the perineal route was probably still the best if the disease involved only the anal canal and especially if the whole circumference of the canal was not affected. In all other cases the choice lay between the sacral route and the abdominal. After the removal of a malignant growth of the rectum by the perineal route incontinence of fæces was very likely to occur if the growth involved the anal canal. Sepsis was very common after wounds which opened up the rectal wall above the pelvic diaphragm, because blood and serum were liable to become widely diffused and became suitable media for the growth of bacteria. It was therefore very necessary to close the deeper portions of the wound by deep sutures or to make due provision for drainage. Sometimes it was possible to prolapse the entire disease through the anus and in such a case excision could be easily carried out, and the wound having been sutured the bowel could be returned within the anus. For the sacral route Sir Charles Ball preferred the following modification of Kraske's operation. The skin having been cleansed an incision was made from the middle of the sacrum to within an inch of the anus; then with an American pruning shears the ligaments were separated from each side of the coccyx; a cut was then made through the fifth sacral vertebra and the triangle of bone was removed. The rectum being then exposed the peritoneum was opened early on both sides and a loop of bowel drawn out. The rectum was ligatured above the growth and then below, the malignant mass being removed. Sometimes it was necessary to make a sacral anus, as when it was impossible to free the upper segment sufficiently to bring it down. Exceptionally it might be possible to unite the cut edges after resection and if successful a very perfect result was obtained, but usually the stitches gave way under the strain of the passage of fæces. It was better to suture only the front and sides of the bowel, leaving the hinder portion open, a later plastic operation closing this opening. For most cases, however, Moulonguet's operation was best. He dissected out the lower portion of bowel to the upper surface of the pelvic diaphragm and the entire mucous membrane down to its junction with the anal canal, the sphincter being carefully preserved. The upper end of the bowel was then freed sufficiently to bring it out at the anus without tension, where it was then sutured. In three cases Sir Charles Ball had, in removing a carcinoma of the rectum, excised also a portion of the posterior wall of the vagina to which the growth was attached but rapid recurrence occurred in all. The abdominal route had probably not yet assumed the position in surgery to which it would ultimately attain. By the abdominal incision it was possible to estimate the extent of the disease and the amount of lymphatic involvement, so that if the disease were too extensive a colotomy might be performed. By the abdominal route also it was easier to control the hæmorrhage and there was also little risk of causing peritonitis. Many cases which had been treated by the trans-sacral route would have been better treated by the abdominal method. It was not necessary to terminate the abdominal method by a permanent colotomy but in many cases it was possible to bring down the divided colon to the anus and fix it there with perfect sphincteric control. It was well in this operation to have the patient in a very elevated Trendelenburg position so as to leave plenty of room in the pelvis. The abdomen was opened by an incision separating the fibres of the left rectus muscle. A loop of pelvic colon was drawn out and the point where the mesocolon was longest was determined; the colon was then ligatured and divided and the lower portion of the mesocolon was divided bit by bit and tied, and then by blunt dissection the bowel could be cleared down to the pelvic diaphragm and tied and divided. The upper portion was then brought out at the anus and fixed there.

Professor HARTMANN (Paris) said that since 1896 he had treated 64 cases of malignant disease of the rectum. In 43 palliative treatment only was possible and in these he had performed an inguinal colostomy and in this operation he brought up the peritoneum to the skin and fixed the colon but did not open it. Two days later he made a small opening into it with the actual cautery. Of these colostomy cases one died. In 21 cases he had found it possible to excise the growth of the rectum. When it was possible to remove the growth through the anus it was necessary to bring the bowel down and preserve the anus. If this was impossible the best method was to establish a sacral anus. He never performed a preliminary colotomy. In one case a patient was alive now, more than five years since the excision of the malignant growth, and there were many others which had survived for shorter periods without any signs of recurrence. Of the 21 cases only one died. The most important point in treatment was early diagnosis.

Mr. F. Swinford Edwards (London) considered excision of malignant disease of the rectum to be a satisfactory operation if the surgeon could be certain of removing the whole disease. The site of the affection made little difference but early diagnosis was essential. If by digital examination the growth could not be detected the proctoscope should be employed and Strauss's instrument was probably the best. The mobility of the growth could only satisfactorily be determined under an anæsthetic. His cases which were of long enough duration to be considered were 40 in number and of these three died, a mortality of 7·5 per cent. In one case ten years had elapsed without any sign of recurrence; but, on the other hand, in one case recurrence had occurred after eight years, if indeed it could be called a recurrence. According to his experience villous tumours often became carcinomatous. In Kraske's operation he was in favour of direct end-to-end suturing of the divided bowel and even though a temporary fistula formed the ultimate result was good. There were three points on which he laid stress: (1) If the peritoneal cavity had to be opened a preliminary colotomy was very advisable; (2) he endeavoured to avoid opening the peritoneal cavity when possible, as thus the risk of the operation was materially lessened; and (3) he doubted if it were ever advisable to remove only a portion of the circumference of the bowel even if only one part should be involved, because of the very great tendency possessed by malignant growths of the rectum to spread round the bowel.

Mr. F. C. Wallis (London) said that the advisability of attempting the removal of a carcinoma of the rectum depended on its situation, its fixation, and the general condition of the patient. When the trans-sacral route was advisable he employed a division of the bone in the shape of an inverted V in place of a transverse division as it gave more room. When necessary a temporary sacral anus might be established, a subsequent plastic operation closing it. Sepsis in rectal operations was avoided with great difficulty and therefore the utmost should be done to sterilise the contents of the bowel. Mr. Wallis showed some lantern slides illustrating his remarks.

Mr. Sinclair White (Sheffield) described and showed the specimen of a case of growth of the rectum in which a little tube looking like a vermiform appendix was present. In his opinion it was a persistence of the neurenteric canal. With regard to the operative treatment of malignant disease of the rectum his experience in the main confirmed the statements of previous speakers. He had had 26 cases of Kraske's operation with nine deaths and of the cases recovering from the operation only four had passed the three years' limit without recurrence, and of these two had strictures and one had a fistula. In his later cases of Kraske's operation he had been in the habit of splitting up the rectum from the anus into the sacral wound and dissecting out the disease. Except in very early cases he always performed a preliminary colotomy and amongst other advantages it enabled the surgeon to examine the disease from above.

Mr. A. B. Mitchell (Belfast) suggested that it might be advisable to begin the operation of excision of a malignant growth of the rectum by Kraske's method by dissecting up the mucous membrane and ligaturing it in order to avoid infecting the posterior wound. The value of the abdominal route was hardly proved but he had recently seen described an operation by a lady surgeon which seemed to promise well.

Mr. T. G. Atkins (Cork) expressed the hope that medical men would diagnose more early than hitherto cases of malignant disease of the rectum by paying attention to slight symptoms, such as mucous diarrhœa. A rectal examination should be made and the Trendelenburg position and deep anæsthesia were of the greatest value in diagnosis, as was also Strauss's aeroproctoscope. The possibility of removing a malignant growth of the rectum depended on its mobility, the absence of extensive disease of the lymphatic glands, a fair general condition, and the absence of metastases. The operation should be as aseptic as possible. When the sacral route was employed the bone should not be divided at too high a level, for the abdominal route was more suitable for any growths which were not easily accessible through the sacral incision.

Mr. J. Lynn Thomas (Cardiff) pointed out the very great discomfort and worry caused by the presence of an artificial anus. He showed a specimen of a large malignant growth of the rectum which he had excised by the abdomino-perineal route.

Mr. E. Stanmore Bishop (Manchester) had had 35 cases in which he had excised malignant growths of the rectum. He thought that it was necessary to consider together malignant growths of the rectum and the sigmoid flexure. In many cases he held that it was not possible at first to decide as to the malignancy of a rectal tumour. The symptoms were often untrustworthy, but in his opinion the symptom of most value was some definite alteration in defæcation. He was strongly in favour of a preliminary colotomy. He always employed Kraske's operation or the abdominal method. The preliminary colotomy was of great value in removing dilatation of the bowel and the muco-colitis which was generally present.

Mr. E. Deanesly (Wolverhampton) expressed the opinion that in any patient it was perfectly possible to remove the whole rectum. One important contra-indication was the involvement of the bladder or ureters. He did not share the dislike for a palliative colostomy expressed by a previous speaker, for if the fibres of the abdominal muscles were separated and not divided they would form a sphincter. Moreover, a large enema every morning would make the patient comfortable for the day. In inoperable cases curettage was very useful; it removed the discharge and pain and it might be repeated several times. He had discarded the perineal route. In the sacral operation he preferred the prone kneeling position. He had employed the abdomino-perineal route in one case which did well but he preferred the trans-sacral route.

Mr. C. Ryall (London) always examined these cases under an anæsthetic as it was otherwise impossible to estimate the suitability of the case for operation. If there was any doubt he always gave the patient the chance. He did not consider a preliminary colotomy necessary and it was undesirable, for the trans-sacral operation was serious and a preliminary colotomy undermined the patient's strength. He regarded all malignant growths as infective and therefore took the greatest care to prevent the growth being torn or cut, and he thought it of great importance to obtain early healing as thereby the chance of infection was lessened. The deeper parts of the wound should be firmly closed so as to leave no cavities. The sooner in the operation the peritoneal cavity was opened the better, as the surgeon knew where he was.

Mr. J. Jackson Clarke (London) pointed out that there were some cases of ulcerative colitis which simulated high rectal carcinoma. He was in favour of an exploratory incision near the middle line of the abdomen, by which much could be learned and, if necessary, a colostomy could be performed. He was inclined to think that in the future the sacral route would become rare.

The President of the section, in closing the discussion, congratulated Professor Hartmann on his very successful series of cases of extirpation of rectal carcinoma. In reference to Mr. Sinclair White's specimen he said that he was inclined to attribute the little tube-like body to a persistence of the post-anal gut. He agreed with several of the speakers that the abdominal route would become more common. He referred also to a case of his own where he performed inguinal colotomy for inoperable rectal carcinoma, but two years later there was no sign of any disease in the rectum and he was able to close the colotomy opening. He said he might mention that no serum of any kind or even violets had been employed in the case.

Mr. Sinclair White read a paper on

Gastro pyloro-duodenostomy.

This operation is that which was referred to at Wednesday's meeting as "Finney's operation" and Mr. White described the operation and illustrated it with some diagrams. He considered the operation to be of great value as the opening could not contract. He thought it worthy of a prolonged trial.

Mr. C. P. Childe (Southsea) read a paper entitled

An Unusual Condition of the Large Intestine associated with Carcinoma in Two Sisters, together with Carcinoma of the Rectum in a Third Sister.

The first patient was 35 years old and for nine years had had rectal symptoms, mucous discharge and tenesmus.

There was a large carcinomatous ulcer in the rectum with many polypoid growth [illegible] were removed by Kraske's [illegible] Numerous other polypi were present higher up the bowel. The second sister was 32 years of age and was admitted into the hospital at the same time. For four years she had had a rectal discharge of blood and mucus. Here also was a malignant ulcer of the rectum with multiple papillomata. This patient refused operation. The third sister was 34 years of age and had had no symptoms till she saw her sisters in the hospital. She then complained of pain in the back and when examined was found to have a large mass on the anterior wall of the rectum but no polypi. The father had died from some rectal trouble. The first two sisters had occupied the same bedroom, and often the same bed, for ten years but they had never used the same enema syringe. The third sister had often visited them for a week at a time and had slept with each of them, though she had lived in London. Harrison Cripps had mentioned three cases in one family with multiple papillomata of the rectum. Further, out of 14 cases of multiple papillomata of the rectum recorded three had ended in carcinoma. The cases he had described suggested an infection.

The PRESIDENT of the section said that he considered these multiple papillomata to be very similar to the ordinary warts on the hands which were well known to be infectious.

Mr. L. A. BIDWELL (London) read a paper on a case of

Cystic Tumour of the Omentum.

The patient was 62 years of age and grew steadily thin and weak. Ascites was present and he was tapped and four gallons of blood stained fluid were removed. A mass was felt below the liver and was thought to be malignant. He was tapped at intervals and at last it was thought advisable to explore the abdomen and the tumour was then removed. It was found to arise from the omentum and consisted of round and spindle cells. The patient was well eight months later.

STATE MEDICINE.

THURSDAY, JULY 27TH.

Dr. L. A. WEATHERLY (Bath) introduced a discussion on

Sanatoriums for the Poorer Consumptives.

He stated that he believed in the value of sanatoriums, for they had undoubtedly done good, even if high-flown expectations had not been fully realised. He would discuss the subject chiefly under the heading, Were such sanatoriums necessary and, if so, how were they best started and maintained? He believed they were necessary; no other treatment had been so efficacious in *arresting*, he would not say *curing*, the disease; no other means so effectually provided good air and a full diet and nothing was so useful for the purpose of teaching the tuberculous patient how to live. Tinkering of cases in backyards, with home worry and poor food, only brought discredit upon the treatment. He thought that sanatoriums for the poorer classes might be of three grades. First, those which should be provided by the boards of guardians for the poorest. These might either be special buildings erected for the purpose or special wards allocated at the Poor-law infirmary. The guardians had the power in their hands and should use it. It was proper and it was economical. Out of 769 boards he had found that only 18 per cent. were doing anything for their consumptives. The next class of poor were those who could not afford to pay the usual sanatorium fees and to provide for those help must be obtained from county and district councils, from the working classes themselves, from manufacturers, and from the philanthropic public. Thirdly, there should be sanatoriums for those who could pay from 25*s* to £2 weekly. He knew from actual experience that a sanatorium of 60 beds would pay its expenses at 25*s.* per week from each patient. Any profit which might arise from such sanatoriums should go to help Class No. 2. The difficulties at present in the way of effective treatment of the poorer consumptives were chiefly that the sanatoriums were hopelessly too few, that early diagnosis was neglected, and that patients were even now averse very often to take the advantage of sanatorium treatment.

Dr. PHILIP BOOBBYER (Nottingham), the President of the section, observed that there was no doubt necessity for sanatoriums for the poor of several grades. He believed that corporations could well set an example to other bodies by providing at a small cost, or even gratuitously, accommodation for their people. He would venture to condemn hasty conclusions on insufficient or improperly interpreted statistical data in reference to the benefits of sanatorium treatment. Such was, if nothing else, a most valuable education to all classes.

Dr. T. F. S. CAVERHILL (Edinburgh) gave the experience of that city and showed that in the artisan class, both among men and women, every fourth person died from tubercle. For these practically no sanatoriums were provided.

Dr. R. SHINGLETON SMITH (Bristol) was convinced that sanatorium treatment was vastly superior to any drug treatment. It was still necessary to preach the gospel of fresh air. Let fresh air come first and drugs second. Sanatorium treatment was greatly needed for the poorer classes for the arrest of the disease and the prevention of further infection. It was worth while to carry it out even for the poorest.

Dr. T. N. KELYNACK (London) believed that the original boom in sanatoriums was passing. He considered that the chronic tuberculous patient from amongst the working classes was often the best when considered from the economic point of view. He pointed out the question of the psychology of the poorer consumptive and that there was a danger of inducing a species of "consumptive casual" who went from institution to institution. The term "cure" was unjustifiable. The general health was much improved but the local state remained unaltered. A thorough inquiry into the whole subject was most desirable.

Dr. NATHAN RAW (Liverpool) pointed out what was being done in Liverpool with a very fair amount of success. [illegible] up the matter, boards of [illegible] ses in their provinces. Early diagnosis was greatly needed.

Dr. W. B. RANSOM (Nottingham) said that the whole matter turned on the questions of advantage and cost. He was certain that sanatorium treatment had come to stay. It enabled at least one quarter of those treated to have another four or five years' working life. He emphasised the necessity of after-care and the desirability that cases should be watched in a hospital for a month before being sent to a sanatorium.

Dr. C. E. REINHARDT (London) showed the magnitude of the subject and pointed out that it involved a huge financial question which was worth tackling and solving. He believed strongly in the chalet type of sanatorium as being cheaper and more effective than large buildings.

Dr. T. J. WHITESIDE HIME (Bradford) alluded to the decline in phthisis during the last 40 years and believed that much good came from preventive measures.

Dr. C. R. DRYSDALE (London), speaking from a long experience of the disease before the introduction of sanatoriums, was quite convinced of their value, but showed that with present accommodation it was quite out of the question to treat more than the fringe of the cases.

Dr. T. D. LISTER (London) referred to what was being actually done by one class of the poorer members of the community—the thrifty class. Dr. Weatherly had spoken of the German Industrial Assurance sanatoriums and their success. The nearest approach in this country to universal insurance was afforded by the great friendly societies and labour organisations. Some of the leaders of the great friendly societies in London inquired into the German system and visited the German industrial sanatoriums with Dr. A. P. Hillier. As a consequence a movement originated which resulted in the birth of the following scheme. It was proposed to erect a sanatorium for 200 patients suffering from early phthisis on a site of 250 acres which had already been acquired. About 60 patients will be allotted to a central sanatorium building in connexion with the administration departments, the remainder in "chalets," or rather "ward pavilions," of substantial but inexpensive construction, not of wood. The essential feature of the scheme was that before the building was opened every one of these 200 beds would be reserved, endowed, and maintained by levy on the members of the respective societies and organisations affiliated for this purpose in proportion to their respective needs. No cost for maintenance would fall upon the public. In the first expenses of erection and establishment of the institution help was being sought from the friends of the societies. The executive represented something like 2,000,000 workers. The Post Office had joined in the movement with about 25,000 of the employés in this department. To achieve success for the scheme three things appeared to be necessary. Firstly, early diagnosis, as all who had to treat phthisis knew only too well, was essential. Secondly, the coöperation of the patients was necessary and that would be obtained through their medical men and through their own trade journals and the magazines of the friendly societies by means of articles. The organisation of these societies and the superior intelligence of workers who think it worth while to join with their fellows should render this work fairly easy. Thirdly, there must be an attempt to prevent relapses. It was proposed to teach patients in whom the disease was arrested new occupations on the farms and otherwise on the estate and it was hoped that in this way selected cases might be fitted for a return to wage-earning under new conditions and arrest might be permanent.

Dr. J. E. MOLSON (Chelmsford) suggested that tuberculin treatment might be carried out in sanatoriums and showed how effectively Brighton was dealing with its cases.

Dr. KELYNACK read a paper on

Alcohol in Relation to National Vitality.

The public were deeply interested in the question and practical reformers were turning to the medical profession for direction and guidance. The conclusions of the recent Inter-departmental Committee on Physical Deterioration were dogmatic so far as alcohol was concerned. It was much to be desired that the recommendations should be carried out. The formulation by authoritative medical opinion of satisfactory and scientific teaching on the principles of temperance in the elementary schools was greatly needed. The Association had done much through its inebriates committee to secure many advantages for the inebriate and to advance national legislation and to secure the establishment of suitable institutions for both the curable and the irreclaimable classes of alcoholics.

The PRESIDENT of the section stated that from his student days he had been in accord with the dictum that alcohol was a poison and this was being conclusively re-proved by the many investigations of the present day. Alcohol did more harm to the community than any other agent.

Dr. DRYSDALE had always believed alcohol to be a poison and the whole of the profession was coming round to this conclusion. He believed that next to consumption alcohol claimed more victims than any other cause of disease.

Mr. W. MCADAM ECCLES (London), as one of those who presented evidence to the Committee on Physical Deterioration, pointed out that the conclusion in the report was decisive and one which deserved that the recommendations which were based upon it should receive prompt and emphatic attention.

Dr. ROBERT JONES (Claybury), as the other witness on the subject of alcohol before the Committee on Physical Deterioration, desired to emphasise the remarks of Mr. Eccles and to point out the convincing proof there was that alcohol was a terribly potent poison to growing tissues.

Dr. E. SYMES-THOMPSON (London) urged that action should be taken on the lines of the committee's report. The medical profession was a force in education which was of the greatest importance and if used in the right way must attain its object.

Dr. V. H. RUTHERFORD (London) said that it was interesting that no one appeared to be in favour of alcohol and that this attitude of the profession created a serious responsibility. He was sure it was necessary to reduce the temptation that existed on every hand towards alcoholism.

Dr. REINHARDT alluded to the fact that a few years ago he had difficulty in not giving alcoholic beverages to tuberculous patients in sanatoriums, but that now owing to the altered trend of public opinion it was quite easy to discard them and for the last two years none had been taken by any of his patients. In this and in other ways there was a distinct improvement.

Dr. J. WARD COUSINS (Portsmouth) said that in estimating the effects of alcohol on national vitality it was important to remember that only a very small proportion of the harm wrought was preserved in statistics, because the present method of death certification rendered it almost impossible that deaths due to alcohol could be fearlessly so recorded. The death certificate should be the confidential document of the State; then, and only then, would the true facts come to light.

Mr. W. SOLTAU ECCLES (London) felt that while instruction in temperance should be given in the elementary schools throughout the country the same should be available at the public schools. It was highly desirable that boys in the time-honoured public schools should not have alcoholic beverages placed before them.

It was then proposed by Dr. KELYNACK, seconded by Mr. MCADAM ECCLES, and carried unanimously, that the Council of the British Medical Association should be asked to appoint a committee to investigate the relationship of alcohol to national vitality.

Dr. H. R. KENWOOD (London) read a paper on

Hygienic Training and Teaching at School.

The ignorance among the poor of household management and of the principles of hygiene was responsible in no small measure for their high preventable mortality, their inferior physique, their intemperance, and their poverty. Education in these matters constituted an important measure in preventive medicine. What was wanted, as Sir John Simon said, was that education which by model and example would lead the poorer classes of society to know cleanliness from dirt, decency from grossness, which would teach them to feel the comfort and profit of sanitary observances, and would apply their instincts of self-preservation to the deliberate avoidance of disease. Healthy bodily development could be secured by physical exercises, combined with object lessons inculcating the recognised importance of fresh air, cleanliness, &c. A "sanitary conscience" should be created in the rising generation. Parents as well as the children would probably need instruction and to this end the employment of female health visitors was most desirable. There was a wide distinction between what was necessary for the teacher to know and what it was right for the children to be taught. One should impress simple hygienic rules upon the scholar, giving graphic reasons for the same, and he should be trained in hygienic habits while at school. What was adequate could probably be taught at the cost of one half hour per week during the last two years of compulsory school attendance, always providing that the scholar was receiving the object lessons of hygienic surroundings and practice during the whole of the school life. The aim, therefore, should be to instil elementary principles of hygiene which relate to the person and the home; as, for instance, the importance of, and the way to secure, fresh air, cleanliness of surroundings, person, habits, healthy bodily functions, suitable clothing, food, and temperance in alcohol. Female children should, in addition, be taught the principles of cooking, selection of food, and the feeding and management of infants. Few things more impress themselves upon the scholar than when one of their number is singled out for some special duty. It would therefore be a most telling thing if one scholar in each classroom were constituted the sanitary monitor for each week. It would be his duty to see that the ventilators were open, that the classroom was well flushed with fresh air upon every available opportunity, that cleanliness obtained, that dust did not accumulate, and that all sanitary requirements were observed in the use of the sanitary conveniences provided.

Dr. J. T. C. NASH (Southend-on-Sea) read a paper on

Shell-fish and Typhoid Fever

in which he made the statement that he was of opinion that a proper control of the production of shell-fish would secure a noticeable reduction of typhoid fever and a slight reduction of diarrhœa in the morbidity and mortality returns. Local evidence went to show that in Southend there was but little typhoid fever apart from contaminated shell-fish. The incidence of typhoid fever in London and Essex had diminished considerably during the last two years and this was coincidently with a lessened consumption of oysters and with improved methods of cooking cockles. At Southend much care was now taken with cockles which were collected at places remote from any recent sewage contamination. They were not relaid in polluted waters but were cleansed in pure water and steamed in galvanised iron coppers with lids for five minutes and all subsequent washings were carried out with pure water in clean metal receptacles. Consequently the reduction of typhoid fever in Southend during 1904 was about 90 per cent. as compared with the average incidence of many former years.

INDUSTRIAL HYGIENE.

THURSDAY, JULY 27TH.

Dr. J. H. BELL (Bradford) opened a discussion on

Anthrax.

He mentioned that the connexion of the British Medical

Association with the subject of anthrax dated from 1862, when Dr. William Budd of Bristol read a paper on the occurrence, hitherto unnoticed, of malignant pustule in England. In the following year Dr. Budd, at the request of the Association, drew up a memorandum "on the investigation of epidemic and epizootic diseases," in which he anticipated the discoveries of Lister, Pasteur, Koch, and others regarding the bacterial origin of diseases. At several later annual meetings of this Association papers on anthrax had been read, so that these meetings appeared to have been centres from which a knowledge of anthrax had been spread abroad. Dr. Bell then referred to the valuable researches of Dr. T. M. Legge on industrial anthrax in the Milroy lectures of this year. He drew special attention to the fact that a distinct and definite disease might repeatedly attack persons in a community and yet escape detection. Anthrax had come to them from the Far East and probably stalked abroad in this country for generations before it was recognised as a separate disease. In the year 1872, the year in which the maximum amount of dry hides was imported into this country, such an acute observer as Bryant of Guy's Hospital stated that he had no personal experience of the disease and yet surely many cases of both internal and external anthrax must have occurred among the workers in hides in that neighbourhood, which was close to the centre of the London anthrax district. In 1882, though the quantity of infectious dry hides imported had decreased, yet the number of fatal cases of anthrax increased, pointing to the fact that the disease was overlooked in the earlier period. In London anthrax districts workpeople had been educated to know the appearances of the cutaneous form of the disease and had been warned of the danger of slight injuries to the skin and of the importance of applying at once for medical treatment. Internal anthrax was very often not recognised until it was too late to avert a fatal result, the milder cases seeming so simple and like an ordinary cold. The diminished quantity of dry, dusty, infectious hides and the increased weight of wet hides imported had lessened the frequency of attacks and reduced the number of pulmonary cases. In Bradford the prevailing type of the disease had changed from the pulmonary to the cutaneous form, which was due, first to the greater care taken in foreign countries where the materials were packed to exclude "dead" fleeces, and secondly, to the precautionary regulations which had been enforced in factories where noxious materials were manipulated. Whether noxious wools and hairs could be disinfected by steam at 230° F. without injury to the material for manufacturing purposes was a question which remained to be tested scientifically. Dr. Bell predicted more than 25 years ago that pulmonary anthracæmia would be found at Kidderminster, Halifax, Norwich, Leicester, and other places, which prophecy had been fulfilled. He now ventured to predict that this form of anthrax would be found wherever persons inhale dust arising from infective materials, whether these be wools, hairs, hides, skins, rags, or anything else. The Factory and Workshops Act required the notification of all cases of industrial anthrax. It was very desirable that that notification should be extended and made to include all cases, industrial, agricultural, and others. This should be as complete and general as it was with regard to animals under the Diseases of Animals Acts. Dr. Bell suggested that in addition to the wool-sorting regulations, copies of which were placed in all wool-sorting rooms, a notice should be fixed on the wall of each room where possibly infective materials were manufactured advising workpeople of the symptoms of external anthrax and of the importance of seeking medical advice at once if there was any suspicion of infection. With regard to treatment, the remedy for all kinds of anthrax was at present Professor Sclavo's anti anthrax serum, introduced into this country by Dr. Legge and commented on in his Milroy lectures. Many cases of cutaneous anthrax recovered without medical or surgical treatment; a greater proportion recovered if the lesion had been excised, but the greatest number recovered when excision was combined with injection of serum. For internal anthrax serum was the only remedy. Unfortunately, the patients were generally dying before the diagnosis could be made, when it was too late to do any good. Dr. Bell therefore recommended that when persons who had been exposed to anthrax infection were taken ill the illness, no matter what its nature, should be reported to the manager of the department at once; that the patient should be seen by a medical man on behalf of the firm; and that in all cases, except where anthrax could be positively excluded, 40 cubic centimetres of serum should be injected at once and repeated if necessary to determine the diagnosis. By this treatment in the earliest stages of the disease before a correct diagnosis could otherwise be made some lives would be saved and so far employers would be relieved of the incubus of the Workmen's Compensation Act.

As Mr. J. L. STRETTON (Kidderminster) was unavoidably absent his remarks were read by the honorary secretary, Mr. C F. BRYAN. Mr. Stretton laid stress upon the difficulty of diagnosis of the disease and said that it would be an advantage if permission could be obtained to perform inoculation experiments in centres where anthrax was likely to occur. It appeared that cases of anthrax occurring in workers in factories must be reported to the Home Office, cases occurring in other human beings were not reportable at all, and cases occurring in cattle must be reported to the Board of Agriculture. Here they had three sets of cases, two of them governed by a dual authority, which was always unsatisfactory, and the third under no control whatever. Mr. Stretton referred to several cases in illustration of this point which had occurred in his private practice. One was that of a youth who worked in a garden and became infected with anthrax. It was ascertained that a brother who occupied the same bed was employed in a factory sorting Persian wool. This case was not notifiable, so the presence of anthrax in the factory would be unknown to the Home Office. Many cases in animals were due to the refuse from factories being used as manure; but as these were not reportable to the Home Office it might be unaware of the fact. The Home Office took no action with respect to the infected individual. The Board of Agriculture slaughtered animals affected with anthrax and cremated the bodies. This method of disposal of bodies should apply to human subjects also. All cases should be reported to the same authority and action ought to be taken with regard to the infected body, the domicile, and the fomites. The treatment of these cases should not be conducted in the wards of a general hospital. Special wards should be provided by the manufacturers and insurance companies who were the gainers by efficient treatment. Professor Sclavo's serum was a great advance and for cases of anthracæmia and malignant anthrax œdema was the only treatment which they could adopt. In malignant pustule it was their only hope where it was impossible to excise the pustule but when excision was possible it should be practised in addition to inoculation.

Dr. W. H. HORROCKS (Bradford) remarked that many cases of both external and internal anthrax were unnoticed, which fact must vitiate any statistics on the subject. As regards anthracæmia a peculiar state of well-being occurred which was very deceptive and generally preceded a fatal issue. He agreed that treatment should be a combination of serum and excision when possible.

Dr. DAVID GOYDER (Bradford) mentioned the results of the commission on wool-sorters' disease appointed by the Bradford Medico-Chirurgical Society and the necessity in treatment of some such serum as that advocated by Dr. Legge. The course of internal anthrax was so rapid and the insensibility of the patient to his dangerous condition was so complete that he was rarely seen by a medical man until he was in the jaws of death. There was no time for treatment in that case. All other kinds of treatment had been tried but nothing had answered until this serum was introduced and he advocated an extended trial of its efficacy.

Dr. H. W. LANGLEY BROWNE (West Bromwich), the President of the section, said that he had not had much experience of anthrax, as he did not live in a district where it was common. He found benefit in external cases from antiseptic treatment and was accustomed to apply strong iodine liniment with a brush to the part affected and over that gauze soaked in a 1 per 1000 solution of perchloride of mercury, then cotton-wool, and a firm bandage over all.

Dr. BELL, in reply, laid stress upon the early injection of serum and upon the importance at the same time of excising the affected part in external anthrax. He did not agree with Mr. Stretton that cases of anthrax should not be admitted into the wards of a general hospital.

GYNÆCOLOGY AND OBSTETRICS.

WEDNESDAY, JULY 26TH.

Dr. HERBERT R. SPENCER (London), the President of the section, opened the proceedings by welcoming their guests, Professor Howard Kelly Professor Wertheim (Vienna) and

(Baltimore). He alluded to the pathological museum in its gynæcological aspect and thanked Dr. Louisa Garrett Anderson for her efforts in that direction. He then called upon Professor WERTHEIM to read his paper on

The Diagnosis and Treatment of Cancer of the Uterus,

and thereby to open the discussion set down for the section. Professor Wertheim began by describing the steps of his operation by means of some excellent drawings as follows: (1) the vagina was disinfected and the growth on the cervix dealt with in a like manner; (2) the abdomen was then opened; (3) the rest of the peritoneal cavity was carefully packed off from the area of operation; (4) the posterior layer of the broad ligament was opened and the ureter carefully and gently isolated; (5) the peritoneum on the front of the cervix and bladder was reflected forward; (6) the peritoneum on the posterior aspect was treated in a like manner; (7) the tubo-ovarian and infundibulo-pelvic ligaments were then tied and divided and bleeding vessels were clamped; (8) the finger was passed under the broad ligament along the ureter and the uterine vessels were felt and secured; (9) the vagina below the cervix was clamped by his clamps and the uterus and vaginal reflexion removed; (10) the bleeding from the vaginal stump was arrested by sewing round the cut edge; (11) the glands around the iliac vessels were removed; (12) the wound area was packed with gauze brought out through the vagina; (13) the peritoneum of the pelvic floor was closed; and (14) the anterior abdominal wound was closed in the usual way. If the ureter was injured or sloughed as the result of interference it would be necessary to perform nephrectomy and those cases (three) in which he had to do nephrectomy had borne the subsequent operation satisfactorily. He showed tables of exhaustive and singularly searching statistics bearing on the operation on 179 cases and clearly demonstrated that in this series of what were considered hopeless inoperable cases by the vaginal operation that quite 30 per cent were free from recurrence after five years and if certain factors were taken into consideration some of the cures showed a rate of 70 per cent. of five years' cure-limit. In the matter of diagnosis the importance of early recognition if necessary by curetting and microscopic examination was insisted on. With regard to treatment: (1) it was established that the results to be obtained by his abdominal hysterectomy considerably surpassed the results of vaginal extirpation of the uterus; many cases operated on by the abdomen were inoperable by the vagina; (2) the cause of the greater result was chiefly to be attributed to the fact that in addition to clean operating the surrounding tissues were taken away by the abdominal operation; (3) the extirpation of the cancerous regional glands appeared to be of some relative value, most of the cases in which the glands were not taken away recurring and in those cases in which the glands were taken away few recurred; time would show the real or supposed value of removing the glands; and (4) with regard to the mortality of the abdominal operation simplicity of technique and shortened anæsthesia were important. In his hands the mortality had fallen from 15 to 7 per cent. lately. Vaginal hysterectomy was still of value in cases of early cancer of the cervix and in cancer of the body of the uterus, but in more advanced cases of the cervix the abdominal operation was needed as the cancer was more virulent than in the body of the uterus, and the parametric tissues should be removed.

Professor HOWARD KELLY complimented Professor Wertheim on his paper and said that he had, acting with Dr. John G. Clark, recommended the removal of the glands, just as in cancer of the breast. The ureter should not be separated from end to end, as it was supplied by adventitious vessels from the surrounding tissues, as shown by the collaboration with him of Dr. Sampson. He inserted ureteral catheters before operation in order to keep the ureter in touch. He tied the uterine vessels at their origin, always handling the ureter as gently as possible. He approved of the preliminary curettage and used the formalin tampon. He packed off most carefully the wound area from the peritoneal cavity owing to danger of infection from the septic cervix uteri. The mortality of the wide operation was very large and would be so in the hands of men who had not large experience. The public should be educated to come for surgical assistance early in the disease. Cancer was mainly a disease due to unsatisfactory surroundings, just as tuberculous and other diseases were due to insanitary surroundings.

Dr. LOUISA B. ALDRICH-BLAKE (London) complimented Professor Wertheim and Professor Kelly. She gave particulars of 16 cases of her own. After vaginal hysterectomy recurrence occurred in the scar or in its immediate neighbourhood. She had not systematically removed glands and was not yet satisfied of the real value of the proceeding. She had noted glands in the broad ligament and found them always infected with carcinomatous cells. The operation was mainly on the lines detailed in Howard Kelly's "Operative Gynæcology." She made the cervix and vagina as clean as she could and then regarded it as unclean and was very careful to prevent infection of the operation area. She did not curette all cases, but she disinfected the cervix as far as she could, always bearing in mind that the best means at hand were very deficient in results. She had wounded the bladder twice, once wilfully in order to remove growth in its wall and once accidentally.

Dr. SKENE KEITH (London) thought that the Trendelenburg position was undoubtedly the best for the abdominal operation. He did not believe in a very extensive operation as it was more difficult than appeared to a casual observer and should only be done by men of wide experience.

Dr. CUTHBERT LOCKYER (London) had operated on cases in which he had to leave cancerous material in the parametrium and recurrence, of course, took place. The uterus should always be removed when possible. He used drainage of the vaginal vault, which was not closed. He found that cutting instruments tended to cause recurrence and for that reason used the galvano cautery in removing the uterus.

Dr. MARY SCHARLIEB (London) complimented Professor Wertheim on his valuable paper and said that she had hitherto done mostly vaginal hysterectomy, but now she had taken to the abdominal operation on account of the facilities and advances which it clearly offered. At this section last year she was the only person, with the exception of Dr. Forbes-Ross, who advocated the abdominal operation, which she considered was a more complete, thorough, and workmanlike proceeding and for that reason alone deserved a fair and extended trial.

Dr. JOHN CAMPBELL (Belfast) said that what he had heard had led him to feel somewhat more hopeful. He regretted that many cases were too far gone for the vaginal operation. He trusted that these far-advanced cases would now be attempted by the abdominal route, as clearly Professor Wertheim had made out an excellent case in favour of the abdominal proceeding.

Professor HENRY BRIGGS (Liverpool) gave details of 161 cases. He said that under five years the mortality from recurrence was very high. He did not believe in the efficacy of styptics, douches, &c., but "specimen" gauze should be worn by the patient and thus bleeding would early come under notice. The significance of the fact that the glandular elements dipped down into the musculature of the uterus was such that diagnosis was made more difficult In this matter adenoma, endometritis, and cancer were very close to one another. He mainly performed the vaginal operation and did not do other than keep an open mind on the matter of the abdominal operation. He had operated on many far-advanced cases purely at the request of the patients and their friends as a last hope and chance.

Dr. F. J. MCCANN (London) did not approve of the idea of issuing pamphlets on cancer to educate the public as it would tend to create anxiety in women and perhaps lead to an increase of cancer by nervous agencies. Great attention to every discharge in a woman should be paid. Cases did come early for discharge but examination was not made by the medical attendant. He thought that a more extended application of the supra-vaginal operation was valuable, and it really had a place and could cause a period of immunity extending over five years. He advocated a free removal of the vagina by the vagina if the vaginal mucous membrane was infected.

Dr. HERBERT SNOW (London) agreed that pamphlets concerning cancer should not be issued to the public. Many cases of hysterectomy for cancer were often cases of tubercle, &c., and the microscope should be always used to confirm diagnosis. He thought that cancer was due to mental distress and worry. He did not believe in radium and high tension electricity in cancer.

Dr. J. INGLIS PARSONS (London) said that the mortality after operation for cancer had in spite of experts gone up and that 23,000 persons in the United Kingdom still died from cancer annually. He always used the cautery in removing carcinomatous tissue as the knife tended to cause spread of the disease. After extensive operations the growth of the recurrence was more rapid. He had used sodium salicylate in inoperable cases and had reason to think that it did some good based on the idea that the disease was parasitic. Microscopic examinations of the uterine mucosa should always be made before resorting to removal of the uterus

Dr. ROSENWASSER (Cleveland, Ohio) said that he had seen Professor Wertheim's work and had had his doubts concerning the abdominal operation removed. The secret of Professor Wertheim's success was that the patients were prepared for operation for some time before. Professor Wertheim removed the vaginal cervix by the actual cautery whilst yet the woman was conscious and without the aid of an anæsthetic. The abdominal operation only ought to take from one to one and a half hours. He was convinced that the abdominal operation had a great future.

Dr. F. W. FORBES-ROSS (London) said that at this section last year Professor Olshausen had advocated vaginal hysterectomy as being more desirable than abdominal hysterectomy and that Mrs. Scharlieb had entered a strong plea on behalf of the abdominal operation when he (the speaker) had pointed out the facility gained by the abdominal operation for the removal of glands and diseased tissues. Since then Jacobs had addressed the Gynæcological Society in London strongly advocating the abdominal route and now Professor Wertheim had given them a valuable paper embodying his work since 1898. Dr. Forbes-Ross could not agree with some of the speakers that glands need not be removed, they ought to be removed just as much as those (in the axilla and in the neck) enlarged after cancer in the mamma or tongue and lip. The fact that Professor Wertheim found some cases with the parametric tissue, distensible and not infiltrated with lymphocytes but with many cancer cells present and others with no cancer cells but many lymphocytes was most interesting, and although Professor Wertheim had not said so he felt sure that the lymphocytic infiltrated cases were those that did better than the first class.

Dr. MARY THORNE (London) said that she agreed with Professor Wertheim that prolonged anæsthesia was not good for the patient as it caused fatigue and tended to unfavourable results.

The PRESIDENT of the section thought that sufficient praise could not be given to Professor Wertheim for the finest work yet done in operation for cancer. Professor Wertheim had brought every case he had operated on to notice and 30 per cent. were free from cancer after five years. He (the speaker) had removed the uterus per vaginam by the galvano-cautery and preferred it. The facts of the abdominal operation could not be got away from and the paper was an epoch-making one, yet there were other operations which could be done as well as the abdominal operation. It was the greatest paper that had ever been written on cancer of the uterus, or, indeed, on cancer anywhere in the body.

Professor WERTHEIM replied, thanking the meeting for the kind reception given to his work and to his paper and said that when the remarks were published he would reply to them publicly after taking time to consider them.

THURSDAY, JULY 27TH.

The proceedings were opened by an instructive and interesting lantern demonstration by Dr. S. J. CAMERON (Glasgow) on

Some Complications and Degenerations of Fibro-myomata.

Primary carcinoma of the Fallopian tube complicating uterine fibroids.—The growth was situated in the ampullary region of a greatly elongated Fallopian tube, while the uterus contained many fibro myomata. The growth arose from the anterior wall, having the posterior and superior wall stretched over the tumour but not infiltrated by it. Four inches of unimplicated tube intervened between the tumour and the uterus. The microscopical examination showed the growth to be a carcinoma and the tube wall in the neighbourhood of the tumour showed changes similar to those seen in cases of hydrosalpinx, and these changes, combined with the shape of the tube and the position of an uninvolved ovary situated in its concavity, lead Dr. Cameron to believe that the carcinoma was secondary to a hydrosalpinx. *Sarcoma.*—This tumour was removed by Dr. Cameron from a patient, aged 62 years, who had known of the presence of a uterine tumour for a period of 29 years. The growth was soft and cheese-like, mucilaginous material escaping from a part of the tumour surface when incised. Portions of the growth had a vermilion tint and the blood-vessels in the broad ligament and underlying the peritoneum were of large size. The histological examination showed the growth to be highly cellular, most of the elements having a fusiform shape. A lantern slide from the central portion of the tumour showed fibromyomatous débris infiltrated by these cells. Numerous giant cells were noted. *Carcinoma of the body of the uterus.*—Dr. Cameron had to extend his series to Case 104 before meeting with this complication, although he noted from the reports of other gynæcologists the undoubted tendency that carcinoma of the body had to form in fibromyomatous uteri. In most of the pathological specimens seen by him the growth had been diffuse, but this he considered was due to the fact that such patients had sought relief when the disease had been present for a considerable time. He referred to the difficulty of distinguishing adenocarcinoma of the cervix from these cases. Pain he considered to be a fairly early symptom in carcinoma of the body, although there were cases in which the disease had advanced considerably before any marked discomfort occurred. *Change in the uterine and ovarian arteries.*—Frequently great increase in size of those vessels occurred. Endarteritis as a rule was not very severe, while the circular and longitudinal muscular coats were much thickened. The souffle present in cases of fibro-myoma he considered to be situated most commonly in the uterine and ovarian arteries and less frequently in the vessels underlying the peritoneal covering of the tumour. In support of this statement (1) he had in two cases felt pulsation in the large vessels of the broad ligament through the abdominal wall and here the murmur was situated. At operation the broad ligaments were found to be elevated by the tumour growth. (2) With a very moveable tumour the pitch of the note might be altered by changing the position of the growth. (3) It was often best marked in cases where the tumour had undergone cystic change, so that it could not be due to circulation in the tumour. (4) He had noted its presence in a case of ovarian cyst where the pedicle at operation was found to be thick and vascular. *Cystic degeneration.*—He did not consider that this was due to thrombosis of the vessels and pointed out that confusion might arise in designating a fibroid as necrobiotic when the change present might be one of œdema and diffusion of blood pigment. He showed photographs of a fibroid where cystic degeneration had occurred in the capsule proper, and from photographs of museum specimens he showed that probably peripheral calcification of the growth would take place in some instances, and he demonstrated that perforation of the uterine wall might result. The histogenesis and the occurrence of mast and other cells were demonstrated in fibroids undergoing cystic and myxomatous change. *Torsion of the pedicle of a subserous myoma with rotation of the uterus.*—The tumour was removed by Dr. Cameron on the sixth day of illness. It weighed four and a half pounds and the pedicle had been twisted three times, the uterus rotating from right to left so that the right appendage lay to the left of the middle line. A few recent adhesions and a small amount of free fluid were found on opening the abdomen. The tumour was deeply injected but whorling was distinct. Great venous engorgement existed and on microscopical examination the smallest capillaries were found to be dilated, while at parts the vitality of the muscular tissue had been affected. The nuclei in the less affected portions stained deeply but in the parts which had suffered most the nuclei had disappeared. *Chronic torsion of the pedicle with omental adhesion to a calcified tumour.*—The pedicle in this case was long and peripheral calcification with central liquefaction had taken place in the fibroid. The omental adhesion was broad and the tendency to enlargement of the vessels with atrophy of the omental tissues was demonstrated. Such cases might prove dangerous through (1) direct injury to the viscera; (2) strangulation of a portion of the intestine; and (3) rupture of the vessels during the different positions occupied by the uterus during labour. *Fibro-myomatous polyp complicating a three months' pregnancy.*—The patient complained of bleeding of three months' duration. There was no history of amenorrhœa. A fibro-myomatous polyp three inches long occupied the vagina and the day after its removal the patient aborted. Stratified squamous epithelium covered the most dependent portion but along the pedicle the covering was represented by decidual tissue. Between the muscle fibres here and there a group of decidual cells was found. From the examination of this specimen Dr. Cameron concluded that in cases of fibro-myomatous polypi complicating pregnancy the so-called mucous membrane of the polypi might undergo changes analogous to that in the uterine cavity. *Localised telangiectasis with tuberculous disease of the ovaries and tubes.*—Some parts of this tumour had the structure of an ordinary fibro-myoma but by far the greatest part of it showed a telangiectatic change. Besides this pathological condition well-marked tuberculous lesions were shown to exist in the tubes and ovaries. *Adeno-myoma of the uterus.*—A number of slides were shown to illustrate the pathological peculiarities of this variety of tumour. In one the origin of the tumour from the endometrium was demonstrated and a cervical adenomyoma with marked gastric distension of the spaces was also exhibited. One tumour showed an adenomyomatous structure at one part and an adeno-carcinomatous form at another portion. These tumours give rise to excessive hæmorrhage and in the experience of others the removal of the ovaries produced no abatement. Most of them could be recognised easily by naked-eye examination as they differed from ordinary fibroids in having no whorling or capsule proper. Uterine fibrosis resembled it, however, but in fibrosis the uterus was smaller and its microscopical characters were entirely different.

Mr. E. HASTINGS TWEEDY (Master of the Rotunda Hospital, Dublin) next read a paper entitled

The High Range of Normal Temperature and Pulse throughout the Puerperium.

In the course of this paper he pointed out that success in obstetrical practice as it existed in the large maternity hospital or in the district of the private practitioner was more accurately gauged by a low percentage of morbid cases than by any septic mortality table In pre-antiseptic times men practised midwifery for long periods with an entire freedom from septic mortality and these periods of immunity extended also to the maternity institutions. Thus, in 1766, 611 women were delivered within the walls of the Rotunda Hospital with a maternal mortality from all causes of three and statistics based on a death-rate alone would make many years in the eighteenth century compare favourably with present-day figures. This in spite of the fact that maternity patients were often placed two in each bed and that contaminated water and a foul cesspool supplied the wants of the hospital. It was certain, however, that these ancient statistics gave us no indication of the true state of affairs in respect to sepsis as indicated by a morbid pulse and temperature. Some temperature charts of the year 1880 were still in existence and a reference to the ward books of this period proved conclusively that the hospital was in a more than usually healthy condition at the time. Carbolic acid and Condy's fluid were in general use and the hygienic condition of the institution had markedly improved. On analysing these charts it was found that just one-half showed morbidity (48 out of a total of 99), the temperature in nine of these 48 cases reached up to or above 105° F. and 18 more up to or above 103°, whilst amongst those cases which were recorded as normal such notes as the following frequently occurred:—Chill, erysipelatous patch over buttocks. Succession of chills, headache. Chills, lochia fœtid and scanty. Series of chills, face flushed, lochia very fœtid and scanty, &c. In spite of these indications of unhealthiness the period was singularly free from maternal mortality and if figures prove anything these prove that the majority of women will pass through the child-bearing ordeal notwithstanding their septic condition, although their constitutions would inevitably bear unmistakable indications of the ravages of this dread disease. He contrasted these figures with his present-day statistics which showed for the six months ending April 20th, 1905, that amongst 918 women delivered in the hospital there were 58 cases recorded as morbid. An analysis, moreover, of these 58 cases showed his results to be still more favourable than the bald statement of these figures would lead them to believe. In 43 instances the temperature and pulse did not remain above the normal for longer than four days; in five more for longer than five days; none of the cases proved fatal or gave rise to any anxiety; and the longest recorded rise of temperature, due to acute Bright's disease, lasted but 21 days. Considering, then, the importance of this subject, Mr. Hastings Tweedy urged that a common basis for determining morbidity should be arrived at by the heads of the maternity hospitals throughout the British Empire as well as by private practitioners. His present method for determining this last worked with smoothness and absolute accuracy throughout the year. It was based on an estimation of the pulse and temperature for 24 hours counting from the beginning of the second day of the puerperium. A temperature above 99° accompanied by a pulse above 90 indicated a morbid state if recorded on three successive occasions. His charts were arranged so as to make these two records apparent at a passing glance and it was certain that a serious condition of septic ill-health would be detected with absolute certainty by these records. He concluded by expressing a hope that others would adopt these limits and thus enable the statistics of the British Empire to harmonise.

Professor J. W. BYERS (Belfast) thought that there should be a standard to guide them as to puerperal sepsis—that is, when they should apprehend its onset—the standard being a temperature of 99° F. and a pulse of 90. In operative midwifery, if extreme care was not taken, evidences of sepsis would arise.

Dr. HENRY CORBY (Cork) said that the pulse and the temperature should be taken and read together, and that the pulse was the more important of the two, especially in peritonitis, puerperal or otherwise. They were, perhaps, too strict in keeping patients lying down too long; of course, the liability to pulmonary embolism and prolapsus uteri, &c., should be borne in mind. Of great value was the getting up of a woman as soon as possible after it was safe, thus facilitating drainage, &c.

Dr. R C. BUIST (Dundee) said that a standard should be fixed and used as a guide in lying-in hospitals and elsewhere.

Dr. R. BOXALL (London) also agreed that some standard should be adopted.

The following motion was proposed by Dr. BUIST and seconded by Professor BYERS:—

> That it is desirable that a standard of puerperal morbidity be arranged for lying-in hospitals and that the Council be requested to appoint a subcommittee to consider the matter.

Dr. THOMAS WILSON (Birmingham) did not think that the Association was the body to set up a standard but that the obstetrical societies of England, Scotland, and Ireland should be the bodies to do this.

Dr. FORBES-ROSS (London) agreed with Dr. Wilson in his remarks.

Dr H. C. TAYLOR YOUNG (Sydney, New South Wales) did not agree and did not see why the Association should not carry out the terms of the proposition submitted.

The PRESIDENT of the section then put the proposition to the section which was carried *nemine contradicente*.

Dr. WILSON then read a paper entitled

Two Cases of Vaginal Cæsarean Section in the last Two Months of Pregnancy, with Especial Reference to Vaginal Cæsarean Section.

He stated that in the last two months the uterus with its contents was so large that until recently it had been considered impossible to remove it through the vagina, but Dührssen's method had cleared away this difficulty and it was now possible to operate through the vagina even at the full term of pregnancy. In the last months of pregnancy in association with operable cancer of the cervix there was now, therefore, a choice of three methods of hysterectomy—abdominal, vaginal, and combined. The relative advantages of these methods were discussed and reasons were given for preferring the vaginal route. Two cases were related in which operation at the eighth month was performed successfully as regards both mothers and children. In conclusion, Dr. Wilson pointed out that the choice of operation in pregnancy would depend upon the method generally adopted by the operator in cases of cervical cancer. Even in the last months the operation of vaginal Cæsarean section was not a difficult one in suitable cases. The ultimate choice of operation in these cases would depend upon the remote results as regarded recurrence of cancer and until time had enabled these to be estimated and compared the question of the best method of operating, abdominal or vaginal, must remain an open one.

Professor WERTHEIM said that he had operated on six cases. In each case the ordinary abdominal Cæsarean section was performed and then the uterus and parametric tissues were removed. All the cases did well and recovered, which was really satisfactory as cancer complicating pregnancy was particularly virulent.

The PRESIDENT of the section said that Dr. Wilson's paper was one of very great value. There did not appear to be any very considerable difficulty in doing the operation. If, however, the patients died from recurrence soon after it, and lived longer if delivered naturally without removal of the uterus, Professor Wertheim's cases showed that perhaps the abdominal operation would in the future turn out to be the proper operation. He thought that, if possible, the uterus should be allowed to dilate. There were disadvantages of this, however, such as rupture of the uterus. After the puerperium, in which he had seen a cancer become much smaller, perhaps Professor Wertheim's operation could then be more safely and more radically done.

Dr. WILSON replied and said that the cancer might advance during the puerperium.

The PRESIDENT of the section said that his experience was that the cancer retrogressed during the puerperium.

Dr. CAMPBELL then read a paper entitled—

The Influence of the Presence of Pus in the Female Urethra on the Progress of Gynæcological and Obstetrical Cases.

He said that the general practitioner should realize how prevalent pus in the urethra was, both among gynæcological and parturient patients; how frequently that pus contained virulent septic micro-organisms; and how readily it might be the cause of chronic gynæcological ailments and of puerperal septic conditions. In 544 consecutive cases examined in private practice 135 had pus in the urethra or in Skene's glands—i.e., 24·7 per cent. In 372 consecutively examined in hospital practice 135, or 36·2 per cent., had pus in the urethra or Skene's glands. The result of this examination was that in the total 916 cases 29·4 per cent. had pus in the urethra or Skene's glands. In 120 labour cases examined specially for him by Dr. John McLiesh, 18 of them, or 15 per cent, had pus in the urethra and Skene's glands. In 100 cases of pus in the urethra or Skene's glands Dr. T. Carnwath had found staphylococcus pyogenes albus in 96 per cent., streptococci in 6 per cent., and gonococci in 2 per cent. Many of the cases showed mixed infections—a patient with pus in her urethra was practically in the position of a woman with a septic sinus discharging into her vagina and required special precautions during her confinement.

Dr. WILSON said that he had for years attended to, and thought very deeply on, the question of the clinical significance of the presence of pus in the female urethra. He considered that the clinical explanation was the same as that in the case of the male gleet. He was of opinion that experts should be more often on the look-out for pus in this connexion.

Dr. BOXALL said that at the General Lying-in Hospital, York-road, London, these cases did not occur, but at the Queen's Charlotte's Hospital in London, where every case was not treated as possibly septic and mercurial douches were not used before delivery, perhaps that was the reason why septic gonorrhœal cases sometimes arose. This was the explanation which he gave when asked by the staff of Queen Charlotte's Hospital to explain the absence at York-road of septic cases which occasionally arose at the Queen Charlotte's Hospital. Those cases were perhaps cases with pus in the female urethra.

Dr. CORBY read the account of a case entitled,

Case of Fibroid of the Ovary from a Hermaphrodite,

with photographs, which was very interesting and instructive.

OPHTHALMOLOGY.

WEDNESDAY, JULY 26TH.

Mr. GEORGE A. BERRY (Edinburgh), the President of the section, after welcoming the members, said: Fifty years ago such rapid strides were made in the science of ophthalmology and in ocular therapeutics that every year brought its record of important discoveries in diagnosis, of new methods of examination, of far-reaching generalisations, often of real advances in ophthalmic surgery. At that time, indeed, a few years sufficed to revolutionise the whole science of this department of medicine until ophthalmology attained to a degree of perfection which led von Helmholtz to say of it that it was "the most strictly scientific department of medicine, the one which most nearly approached to the exact sciences." That ophthalmology can hardly with the same justice be said to occupy so prominent a position at the present day is due to the rapid advances which have been made more recently in other departments of surgery. Some few advances in our special science are, no doubt, of comparatively recent date—e.g., the introduction of antiseptic and aseptic measures in connexion with injuries and operations; the use of cocaine as a local anæsthetic; the appreciation of the rôle played by microbes and the toxins which they engender in connexion with various inflammations of the eye; some few points in pathology, notably with reference to tuberculous manifestations; the use of the electro-magnet for the removal of particles of iron and steel, and the application of the Roentgen rays for their detection and localisation. From the therapeutic point of view, however, there has been but little advance to record; whilst our knowledge of the connexion between diseases of the eye and diseases of other parts of the body is hardly less crude than it was 50 years ago, except perhaps as regards ocular manifestations in certain nerve disorders. Latterly, indeed, instead of leading the way the ophthalmic surgeon has mostly had to follow and to adapt to the requirements of his own specialty the advances, so far as they are at all applicable, which have extended the sphere of general surgery. This comparatively slow advance of recent years is not due to there being nothing left to find out. It is not due to the interest in the special subject of ophthalmology being, for the time, diverted to branches which seem to offer more scope for research. There is at least no dearth of writings on special ophthalmological topics. It is not due to the absence of experimentation with new therapeutic agents; new drugs are constantly appearing which, if they do not succeed in doing a tithe of what is claimed for them, at least raise hopes for the time being. Not a few books devoted exclusively to the consideration of new remedies have appeared quite recently. Even in connexion with diseases of the eye, however, for which it should be possible to estimate the results of treatment, in many cases at least, more fully than for other less accessible organs, there is so often shown the same absence of critical insight into the difficulties of such investigation which seems to characterise the majority of writers on therapeutics. Notwithstanding discoveries in pathology, we make, it must be admitted, but slow progress in treatment. The problems which for us await solution are in point of fact numerous enough but they are for the most part such as seem only likely to be solved when our knowledge of general pathology and medicine has reached a stage or two further than it has at present. We do not even know yet what it is that determines the selection of certain organs and tissues for the manifestation of certain definite pathological processes. We are consequently and necessarily empirics as regards the manner in which we may try to supplement purely local by more general means of treatment. But if we cannot to-day check the progress of an optic atrophy or treat on anything but empirical lines a choroiditis, if we cannot prevent the development of a detached retina, if we cannot even cure a conjunctivitis, we may surely hope that some day it will be possible to do all these things and more. If our progress is slow it is none the less real. We need to be critical, even sceptical, in view of the flood of literature from which we must separate the chaff from the wheat. But we can afford to be, we have reason to be, optimistic as to the future. My own predilections have always been for surgery. There is so much pleasurable interest to be got from watching the effect of surgical interference of any kind, so little satisfaction in cases which reliance has to be placed on medical treatment alone, that we are prone to forget that the laborious, patient investigations of recent times may, in the perhaps not distant future, turn the tables on surgery. We may some day have to admit that many conditions, for which surgical measures seem the only suitable ones at present, will allow of rational successful treatment on medical lines alone. Much of our treatment at the present time may even in the light of future knowledge be of a nature which, if it were then adopted, would be little less than criminal. The present discussions might not perhaps lead to much, yet they sometimes help to lift us out of the groove of self-satisfaction and to correct a tendency inherent in man to think that the only "sensible" men are those who hold the same views as ourselves.

Dr. ADOLPH BRONNER (Bradford) read notes of

A Case of Slight Myopia

in which distressing local and general symptoms were relieved by the use of glasses which were much too strong. He said that recently much attention had been drawn to the use of correcting glasses for the relief of obscure nervous symptoms. In America "heterophoria" and in this country "errors of refraction" were the presumed causes of the trouble. The case he detailed illustrated well the dangers of accepting some of the marvels published without proper investigation. A young man suffered from headache on reading, his position at work was bad, and he stooped greatly. He obtained glasses which compelled him to sit upright and his symptoms disappeared and his general health was improved. Examination of the eyes showed that he was emmetropic. The glasses worn were concave sphero-cylinders which appreciably diminished his vision both near and far, but by reason of the former effect they compelled him to sit up when reading. Original examination of the case by a competent observer would have shown the true nature of the disability and the cure would have been natural and easy.

Mr. E. E. HENDERSON (London) read a paper on

The Influence of the Size of the Pupil as Produced by Atropine or Eserine on the Circulation of Intraocular Fluids.

After describing the apparatus which he and Professor Starling used in this research he said that their experiments showed that the raising of the pressure of the living eye artificially increased the rate of filtration. This depended upon several factors: one that had not previously been taken into account was the condition of the pupil as affected by atropine or eserine. The rate of filtration was always greater at artificially raised pressures when eserine was used than when atropine was instilled. These effects, he thought, were not merely mechanical since they differed from the results obtained by similar experimentation with dead eyes.

Mr. N. BISHOP HARMAN (London) read a paper detailing his experiences with various forms of

Electrical Treatment of Trachoma at the Middlesex Hospital.

They had there an unrivalled equipment and no pains had been spared by Mr. C. R. C. Lyster, the surgeon in charge, and his staff. Seven cases had been treated by the high-frequency current by direct contact of the electrode to the affected mucosa; in some cases the applications had numbered over 80. By the x rays four cases had been treated; in each case a current of such quality was used as would give the maximum of the x rays without the dangerous burn rays; up to 50 sittings of ten minutes each had been given. With radium two cases had been treated by direct contact of the glass capsule containing the salt; the applications in one case numbered 139. Despite all this labour and care no beneficial results had been obtained; in every case in which the particular treatment was persevered with steady deterioration was noted, and in two cases of an original unilateral affection the second eye of each case became seriously affected whilst the x rays were being exhibited. His conclusion was expressed by his return to the use of silver solutions, the use of the bluestone crayon, expression, and scraping.

Mr. C. DEVEREUX MARSHALL (London) had used both the x rays and radium; in each case treated he had used the bluestone crayon on the other eye by way of control. He was not convinced that the new forms of procedure were of any use; they were certainly not so effective or so rapid as was bluestone.

Mr. CYRIL H. WALKER (Bristol) asked whether relief of the pain of trachoma could be obtained by the x rays and what use could be made of the low tension tube.

The PRESIDENT of the section had seen radium in use for the treatment of lupus in Paris; it was strapped on to the affected part for four hours and not for five or ten minutes as practised by Mr. Harman.

Colonel E. F. DRAKE-BROCKMAN (London) referred to his Indian experiences of the treatment of the disease. He thought the use of bluestone severe and preferred silver solutions, particularly the new colloidal preparations.

Mr. BISHOP HARMAN, in reply, said he did not find that the use of the x rays relieved the pain of trachoma; he would not use low tension tubes on account of the serious risks which they entailed of burns. As regards the length of time of the application of radium that depended on the quantity used and the sensibility of the part to which it was applied. He agreed that the use of bluestone might be cruelly rough but because it was sometimes badly used that did not diminish its value in careful hands. He did not place much value upon the new colloidal preparations.

Mr. BISHOP HARMAN also read a paper on

False Hay Fever.

He said it was not often that cases of hay fever came the way of the ophthalmic surgeon, they were almost wholly the monopoly of the surgeon who specialised on the respiratory tract and not a few were gold-mines to the quack. He did not propose any new and infallible panacea for the hardy annual of hay fever—the title of his paper clearly told that. He had observed several cases which had been diagnosed and treated as hay fever and which he had been able to relieve by a very simple procedure, just the relief of the exaggeration of an ordinary physiological reflex. Notes of one case would suffice. A woman, aged 30 years, born and bred in the Midlands, of high intelligence and engaged in responsible work, moved to a southern seaside resort well known for its pine woods. Until this time she had enjoyed excellent health and suffered no other than occasional simple "colds." The spring following her removal she had violent and recurrent attacks of coryza lasting ten days; next spring the attacks lasted a month and on the third year they increased in severity and lasted two months. Her physician diagnosed "hay" or "pine fever" but treatment, even the use of adrenalin, did no more than temporarily allay the severity of the attacks. The patient allowed that nearness to hay or pines did not annoy her but that bright sunlight was distressing, especially to the right eye; relief was best obtained by shutting herself in a room with the windows shut and darkened. Mr. Bishop Harman had the advantage of having seen most of the members of her family; all had astigmatic eyes. The suggestion that her eyes might be at fault was flouted. Later Mr. Bishop Harman examined her. The nose and the throat were healthy but the vision was defective. R.V. = $\frac{6}{18}$, with + 3 D. sphere and − 2 D. cyl. ax. 15 ϕ = $\frac{6}{6}$. L.V. = $\frac{6}{9}$ nearly, with + 0 75 D. sphere and 1 D. cyl. ax. θ = $\frac{6}{5}$. It was now three years since these glasses were ordered and there had been no renewal of the attacks during this period, yet no other treatment than the wearing of the glasses had been attempted. The rationale of these cases of "false hay fever" was perfectly easy of comprehension. Reflex irritation of the fifth cranial nerve area from irregular stimulation of the optic nerve formed one of the stock illustrations of "reflexes" in every text-book of physiology. Sneezing was readily excited by sudden exposure to bright sunlight. In these cases the irritating effects of brilliant light were exaggerated by an error of refraction, particularly by an anisometropia. Experimentally Mr. Bishop Harman was able to produce attacks not unlike those described by the wearing of incorrect spectacle lenses. "Cures" for "hay fever" had gained such an ill reputation, chiefly though an ill-regulated empiricism, and the cure of all ills by "spectacles" had recently been so vigorously exploited, that he almost hesitated to join these two—hay fever and spectacles—in matrimony. But the association of retinal reflexes with fifth cranial nerve irritation was so certain that he thought he might be pardoned if he asserted that the physician who failed to submit the eyes of a sufferer from "hay fever" to expert examination had not only not exhausted all the possibilities of treatment but failed to exclude one of the first causes of trigeminal irritation.

Mr. DEVEREUX MARSHALL asked, If such cases occurred in the spring from light reflexes, why did they not also occur in August and September when the sunshine was as bright?

Dr. BRONNER suggested that the cases which Mr. Bishop Harman had described were what was known as "vaso-motor rhinitis," chiefly found in neurotic women, and which best reacted to general treatment.

The PRESIDENT of the section said that he did not believe in the reflex from the retina, so that unless evidence could be brought to prove that the case was weak.

Mr. BISHOP HARMAN, in reply, said that the cases were most frequent in the spring, for then by contrast the sunlight was most irritating; later, usage and the greater protection of trees reduced the stimulus. The cases were very aptly described "vaso-motor" by Dr. Bronner, that was just what he meant by a reflex effect. As to the President's objection to his use of a retinal reflex to explain the sneezing he thought that all physiologists were agreed on that point and the existence of retinal reflexes was demonstrated by the mobility of the pupil.

Professor HESS (Würzburg) demonstrated by a series of beautiful drawings the

Pigmentary Migration in the Retinæ of Cephalopods under the Influence of Light.

He had found in these eyes the presence of visual purple, a fact not admitted until now of any invertebrate. He proved longer if delivered naturally without removal of the uterus, Professor Wertheim's cases showed that perhaps the abdominal operation would in the future turn out to be the proper operation. He thought that, if possible, the uterus should be allowed to dilate. There were disadvantages of this, however, such as rupture of the uterus. After the puerperium, in which he had seen a cancer become much smaller, perhaps Professor Wertheim's operation could then be more safely and more radically done.

Dr. Wilson replied and said that the cancer might advance during the puerperium.

The President of the section said that his experience was that the cancer retrogressed during the puerperium.

Dr. Campbell then read a paper entitled—

The Influence of the Presence of Pus in the Female Urethra on the Progress of Gynæcological and Obstetrical Cases.

He said that the general practitioner should realize how prevalent pus in the urethra was, both among gynæcological and parturient patients; how frequently that pus contained virulent septic micro-organisms; and how readily it might be the cause of chronic gynæcological ailments and of puerperal septic conditions. In 544 consecutive cases examined in private practice 135 had pus in the urethra or in Skene's glands—i.e., 24·7 per cent. In 372 consecutively examined in hospital practice 135, or 36·2 per cent., had pus in the urethra or Skene's glands. The result of this examination was that in the total 916 cases 29·4 per cent. had pus in the urethra or Skene's glands. In 120 labour cases examined specially for him by Dr. John McLiesh, 18 of them, or 15 per cent, had pus in the urethra and Skene's glands. In 100 cases of pus in the urethra or Skene's glands Dr. T. Carnwath had found staphylococcus pyogenes albus in 96 per cent., streptococci in 6 per cent., and gonococci in 2 per cent. Many of the cases showed mixed infections—a patient with pus in her urethra was practically in the position of a woman with a septic sinus discharging into her vagina and required special precautions during her confinement.

Dr. Wilson said that he had for years attended to, and thought very deeply on, the question of the clinical significance of the presence of pus in the female urethra. He considered that the clinical explanation was the same as that in the case of the male gleet. He was of opinion that experts should be more often on the look-out for pus in this connexion.

Dr. Boxall said that at the General Lying-in Hospital, York-road, London, these cases did not occur, but at the Queen's Charlotte's Hospital in London, where every case was not treated as possibly septic and mercurial douches were not used before delivery, perhaps that was the reason why septic gonorrhœal cases sometimes arose. This was the explanation which he gave when asked by the staff of Queen Charlotte's Hospital to explain the absence at York-road of septic cases which occasionally arose at the Queen Charlotte's Hospital. Those cases were perhaps cases with pus in the female urethra.

Dr. Corby read the account of a case entitled,

Case of Fibroid of the Ovary from a Hermaphrodite,

with photographs, which was very interesting and instructive.

OPHTHALMOLOGY.

Wednesday, July 26th.

Mr. George A. Berry (Edinburgh), the President of the section, after welcoming the members, said: Fifty years ago such rapid strides were made in the science of ophthalmology and in ocular therapeutics that every year brought its record of important discoveries in diagnosis, of new methods of examination, of far-reaching generalisations, often of real advances in ophthalmic surgery. At that time, indeed, a few years sufficed to revolutionise the whole science of this department of medicine until ophthalmology attained to a degree of perfection which led von Helmholtz to say of it that it was "the most strictly scientific department of medicine, the one which most nearly approached to the exact sciences." That ophthalmology can hardly with the same justice be said to occupy so prominent a position at the present day is due to the rapid advances which have been made more recently in other departments of surgery. Some few advances in our special science are, no doubt, of comparatively recent date—e.g., the introduction of antiseptic and aseptic measures in connexion with injuries and operations; the use of cocaine as a local anæsthetic; the appreciation of the rôle played by microbes and the toxins which they engender in connexion with various inflammations of the eye; some few points in pathology, notably with reference to tuberculous manifestations; the use of the electro-magnet for the removal of particles of iron and steel, and the application of the Roentgen rays for their detection and localisation. From the therapeutic point of view, however, there has been but little advance to record; whilst our knowledge of the connexion between diseases of the eye and diseases of other parts of the body is hardly less crude than it was 50 years ago, except perhaps as regards ocular manifestations in certain nerve disorders. Latterly, indeed, instead of leading the way the ophthalmic surgeon has mostly had to follow and to adapt to the requirements of his own specialty the advances, so far as they are at all applicable, which have extended the sphere of general surgery. This comparatively slow advance of recent years is not due to there being nothing left to find out. It is not due to the interest in the special subject of ophthalmology being, for the time, diverted to branches which seem to offer more scope for research. There is at least no dearth of writings on special ophthalmological topics. It is not due to the absence of experimentation with new therapeutic agents; new drugs are constantly appearing which, if they do not succeed in doing a tithe of what is claimed for them, at least raise hopes for the time being. Not a few books devoted exclusively to the consideration of new remedies have appeared quite recently. Even in connexion with diseases of the eye, however, for which it should be possible to estimate the results of treatment, in many cases at least, more fully than for other less accessible organs, there is so often shown the same absence of critical insight into the difficulties of such investigation which seems to characterise the majority of writers on therapeutics. Notwithstanding discoveries in pathology, we make, it must be admitted, but slow progress in treatment. The problems which for us await solution are in point of fact numerous enough but they are for the most part such as seem only likely to be solved when our knowledge of general pathology and medicine has reached a stage or two further than it has at present. We do not even know yet what it is that determines the selection of certain organs and tissues for the manifestation of certain definite pathological processes. We are consequently and necessarily empirics as regards the manner in which we may try to supplement purely local by more general means of treatment. But if we cannot to-day check the progress of an optic atrophy or treat on anything but empirical lines a choroiditis, if we cannot prevent the development of a detached retina, if we cannot even cure a conjunctivitis, we may surely hope that some day it will be possible to do all these things and more. If our progress is slow it is none the less real. We need to be critical, even sceptical, in view of the flood of literature from which we must separate the chaff from the wheat. But we can afford to be, we have reason to be, optimistic as to the future. My own predilections have always been for surgery. There is so much pleasurable interest to be got from watching the effect of surgical interference of any kind, so little satisfaction in cases which reliance has to be placed on medical treatment alone, that we are prone to forget that the laborious, patient investigations of recent times may, in the perhaps not distant future, turn the tables on surgery. We may some day have to admit that many conditions, for which surgical measures seem the only suitable ones at present, will allow of rational successful treatment on medical lines alone. Much of our treatment at the present time may even in the light of future knowledge be of a nature which, if it were then adopted, would be little less than criminal. The present discussions might not perhaps lead to much, yet they sometimes help to lift us out of the groove of self-satisfaction and to correct a tendency inherent in man to think that the only "sensible" men are those who hold the same views as ourselves.

Dr. Adolph Bronner (Bradford) read notes of

A Case of Slight Myopia

in which distressing local and general symptoms were relieved by the use of glasses which were much too strong. He said that recently much attention had been drawn to the use of correcting glasses for the relief of obscure nervous symptoms. In America "heterophoria" and in this country only ones he had to go on in which tuberculous inoculation experiments made the diagnosis of the cases certain, and in these after the lapse of four years the so-called "obsolescent" changes could be seen. The changes were not in the macular region but started near the disc, as most of the 20 cases detailed also did. The absence of much scarring and absence of pigmentation seemed to distinguish the cases from the syphilitic type.

On the utility of tuberculin injections, either for diagnosis or with a view to treatment, Professor Hess said he had injected the old preparations 18 times and the new "T.R." eight times, for diagnostic purposes only. In half the cases he obtained a general reaction but in only two—cases of iritis—was there a local reaction. He only considered a local reaction exact proof of the nature of the inflammation, yet the fact that the general reactions in these two cases were similar to the reaction obtained in the other cases lent an air of probability to there being ocular tuberculosis in these also.

Dr. J. Hern (Darlington) had used the injection in six cases, using only the new "T.R." He thought it a valuable aid to diagnosis but not for treatment. A good reaction certified the presence of tubercle in the body, but its absence was not a sure contra-indication.

On the danger of excising tuberculous eyes Dr. J. Tatham Thompson (Cardiff) said he excised such an eye once for the relief of severe pain but death from meningitis ensued in a few weeks.

Mr. Jessop had operated on two cases and in each fatal meningitis followed in three weeks.

Professor Hess thought it well to wait as long as possible, not only because of the risk of general infection but because, as Mr. Jessop had shown, even very severe cases made fair recoveries in time.

Dr. Shaw said he had seen one case of apparently primary tubercle of the eye in a boy, aged nine years. The growth appeared on the iris of the left eye and increased so rapidly that the eye was excised. Before enucleation some retinitis was seen in the right eye. A month after the operation signs of meningitis appeared but subsided. During the next two years the boy suffered from tuberculous abscesses and bone affections on the left side of the arm and the leg. Pathological examination of the enucleated eye showed typical tuberculous growth.

Mr. J. Herbert Parsons (London) said that the trend of opinion amongst many continental observers was that a real primary onset of the disease did occur in the eye.

Mr. W. M. Beaumont (Bath) cited the case of a girl, aged ten years, under his care where an apparently simple phlyctenular affection of the cornea relapsed, became chronic, was succeeded by iritis in one eye and retinitis in the other, and last of all by a typically tuberculous affection of the cervical glands. It appeared very likely that this was a case of true primary disease of the eye.

On the point raised by Mr. Jessop—the frequency of choroidal infection in chronic surgical and medical tuberculous disease—Sir Victor Horsley (London) said it was a point of considerable importance if chronic tubercle could be determined by examination of the fundus. Was it possible that the appearances of the fundus in tuberculous disease could be distinguished from the appearances presented in cerebral tumour?

Professor Hess said that such a differentiation was not possible by the aid of inspection alone but with the aid of tuberculin it might be. In a case of the kind the injection of tuberculin was followed by a local reaction and by the exaggeration of inflammatory changes about the original disease, and this was considered evidence of the tuberculous character of the original process.

Mr. Herbert Parsons raised the question as to the greater liability to permanent pigmentary changes in tuberculous affections as compared with the effects of congenital syphilis. Mr. Jessop had expressed his opinion that pigmentation was rare after tuberculous disease.

Mr. Bishop Harman said that from his experience of the blind and partially blind children in London County Council schools, he was distinctly inclined to think that pigmentation was much more associated with choroiditis the result of congenital syphilis than with any other disease of children. He based this opinion on the case with which a series could be found from the least degree of pigmentation to the grossest, and associated in many cases with the typical stigmata of congenital syphilis.

Mr. Jessop replied, agreeing as to the dangers of setting up general tuberculosis by excising an affected eye and emphasising the danger to the body generally when the sclera was affected.

Dr. Hern read a paper entitled

Some Observations on the Effect of the Presence of Adenoids in the Naso-pharynx on some Affections of the Eyes.

Soon after Meyer of Copenhagen read his paper before the International Medical Congress in London in 1881 and the facial and other indications of adenoids became familiar, he noticed that cases of phlyctenular, eczematous, or scrofulous conjunctivitis or ophthalmia frequently presented the adenoid facies; and that unless the throat condition was treated satisfactorily the treatment of the eye conditions was most unsatisfactory. These observations referred in the main to children but similar eye affections were found in adults associated with rhinitis and hypertrophied turbinal bones. He did not think that the association pointed to a common strumous or tuberculous origin for these conditions; many cases showed no such family taint. Some, it is true, did ultimately succumb to tubercle, but he thought the conditions he had mentioned favoured this ending only in so far as they induced debility by continued irritation and by preventing respiration. And similarly he thought that the eye conditions were indications of the onset of this debility arising from these same causes.

Mr. A. H. Benson (Dublin) read a paper on

The Evolution of the Operation of Blepharoplasty.

The operation was for the relief of entropion consequent on neglect of trachoma. Very many operations had been devised, a few were satisfactory, and more were injurious. He did not intend to introduce any new operation but to trace the stages whereby they had arrived at a procedure which in their hands in Dublin had been satisfactorily followed for 20 years. The first attempt at remedying the hurt of entropion was both drastic and disastrous; the surgeon removed with scissors the lid margin with all its accessories, permanent shortening of the lid with exposure of the eye followed, and xerophthalmia was grievously common. Next the follicles of the offending cilia were removed and the other marginal structures spared: this was a step in the right direction. Later efforts were directed to saving the cilia either by cutting into the deformed tarsus, straightening the lid and allowing the gap to granulate up, or else by the removal of part of the skin of the lid so as to drag up the displaced cilia; these procedures both involved loss of substance and so were defective. Next succeeded transplantation of the hairs and replacement by a strip of skin, with the resulting disadvantage that the downy hair of the skin was brought into apposition with the cornea and produced a new and no less chronic irritation. Their present method was to incise the whole length of the margin of the lid behind the line of cilia to the depth of a quarter of an inch and to place in the gap formed between the front and back layer of the lid a strip of mucous membrane excised from the lip The procedure was at once simple and rapid of execution and the most trustworthy in its final effects—in fact, it cured the entropion.

Professor Hess, Dr. R. W. W. Henry (Leicester), and Dr. Tatham Thompson agreed that the method advocated so eloquently by Mr. Benson was all that he claimed for it; they had used it for long periods.

The President of the section remarked that the only true test of such operations was that of time; they must strive for the most permanent relief possible.

Mr. Benson considered that experience proved that if the method he advocated showed a good result a fortnight after its performance the good result would be permanent.

Dr. Shaw said that he had often seen his predecessor, the late Dr. W. A. McKeown, transplant skin from behind the ear with much success.

Mr. J. B. Lawford (London) agreed in the excellence of the operation but considered that there were some gross cases of malformation which could not be met by it.

The President of the section showed a

New Vision Test,

with which he had been experimenting for some time, for the detection of fine differences in visual acuity. On a large disc were mounted a series of smaller discs; these were printed in chequers of black and white squares. The squares were in such gradations of sizes that they subtended the same angles as the different sized letters in Snellen's types.

that all cephalopods studied by him showed this pigmentary migration within the retina, but the rapidity of the migration differed in various species, and it was different in different parts of the same retina, especially in the small horizontal stripe which contained very long and small rods, and corresponded evidently to a stripe of best vision. He also related some experiments on the same subject performed on monkeys' eyes.

Dr. F. W. EDRIDGE-GREEN (London) expressed his pleasure at the findings of Professor Hess's work. He had added to the list of those creatures possessing visual purple another group which at one time were confidently asserted to be devoid of it; the same had been recently proved for the common bat.

Dr. KARL A. GROSSMANN (Liverpool) read notes of a case of

Congenital Absence of the Dilatator Muscle of the Pupil.

A girl, five years of age, of normal general physique, was noted to present markedly eccentric pupils. They were placed upwards and inwards, were of oval shape, and were slightly ragged in the margin. The surface of the iris showed a number of coarse parallel folds. The whole iris was tremulous on quick movements of the globe and the lens was found to be absent or represented only by an opaque mass in the vitreous. Instillation of eserine demonstrated the presence of a sphincter muscle by contraction but atropine affected the pupil little if at all. The condition, he thought, illustrated the interdependence of the development of lens and dilator muscle.

Dr. GROSSMANN showed a small form of

Hollander's Modification of Paquelin's Cautery

which he used in conical cornea. Through the platinum end of the instrument there was fitted a fine platinum worm-like tube; through this was pumped air which was raised to so high a temperature that it formed a most efficient and delicate drying application to these thin and bulged corneæ.

Dr. GROSSMANN further showed numerous and very fine lantern colour photography transparencies of cases of Lepra Ophthalmica which he had examined in Iceland.

Dr. CECIL E. SHAW (Belfast) read notes on a case of

Toxic Amblyopia following Influenza.

A man, aged 20 years, of good history, suffered from a mild attack of influenza in February last. A week later the vision was affected and when seen fingers could only be counted with the right eye at one foot, and there was no perception of light in the left eye. The pupils were dilated but the fundus was normal in each eye. The sense of smell was temporarily lost. By the second week vision was further diminished and there was numbness in the right arm, leg, and side, and walking was difficult. Paresis also appeared in the left internal rectus with a divergent squint. In March there was a slight improvement which increased until in June he was healthy again in body but the vision remained defective—right vision being only $\frac{1}{24}$ and left vision [illegible]. There were no changes in the fundus.

Mr. BISHOP HARMAN said that he had two cases under observation of somewhat similar nature. Both were schoolboys of healthy physique and family. One recovered from an attack of influenza with permanent loss of central vision which necessitated his being trained in a blind school. The other was seen and put to bed at the very outset of the attack; there was a marked degree of choke-disc and vision was lost but in the course of a month vision recovered to $\frac{6}{6}$ in one eye and $\frac{6}{9}$ partly in the other.

THURSDAY, JULY 27TH.

Mr. W. H. H. JESSOP (London) opened a discussion on

Intra-ocular Tuberculosis.

He limited the subject to disease of the interior of the eyeball and therefore included cases affecting the choroid, iris, ciliary body, and retina; the chief part was devoted to the choroid—including miliary tubercle of the choroid and solitary choroidal tubercle. Of solitary choroidal tubercle an analytical table of 20 cases was given collected from various authors. Statistics were collected as to patients' sex, age, previous history, family history, clinical tuberculous signs in other organs, operation, results, and macroscopic and microscopic examination. A solitary tubercle was found generally as a rounded spherical body of grey, white, yellowish and different coloured greys starting from near the optic disc and was subretinal, seldom tending to infiltrate the retina, the retinal vessels lying clearly over it. There were generally nodules to be seen on it and often it seemed made up of nodules. The retina around might be flecked with spots like diabetic retinitis but not pigmented; the tumour was subretinal for a very long time. Yellowish spots might be seen on the surface of the tumour like lichen and were caseation changes. Hæmorrhages might occur but were not often recorded. In miliary tuberculous choroiditis tuberculous meningitis was nearly always present. At St. Bartholomew's Hospital, in 15 cases of tubercle of the choroid found in the post-mortem room 14 had tuberculous meningitis and only one had not. This case had miliary tubercle of the lungs, the peritoneum, the kidneys, the spleen, &c. He was sure that the two very frequently coexisted and it was not a fact, as stated by Horner, that the presence of tubercles in the pia mater contra-indicated their presence in the choroid. Tubercle of the iris and ciliary body were next treated of and also the rare condition of tubercle of the retina. As to diagnosis in tuberculous cases the greatest test was certainly inoculation experiments. In many cases, especially when caseation had taken place, the bacillus was not to be found. Giant cells, tuberculous stroma, endothelial cells, and caseation were all of minor importance in diagnosis. Other signs of tubercle in the body helped the diagnosis. In order to limit the discussion the following questions to be answered were suggested as the basis of discussion: 1. The relative frequency of primary intra-ocular tuberculosis. 2. How often was choroiditis met with in acute miliary tuberculosis? 3. What was the value of tuberculin—(*a*) as an aid to diagnosis; and (*b*) as treatment? 4. What was the danger of dissemination as a result of excision in intra-ocular tuberculosis? 5. In tuberculous affection limited to the choroid was there little tendency to pigmentation or scarring of the retina or choroid and were vitreous opacities seldom present? 6. How often in chronic tuberculosis, especially pulmonary, were there choroidal lesions? 7. In chronic choroidal tubercle what were the signs of "obsolescent tubercle"? On these points his own opinion was as follows: 1. He had never come across a case which he could prove to be primary intra-ocular tuberculosis and doubted whether such a condition ever existed. 2. From statistics the percentages varied greatly but probably it was to be found in about 50 per cent. post mortem and in from 30 to 35 per cent. by the ophthalmoscope before death. 3. In his own practice he had personally had little experience but was certain that the old tuberculin was not trustworthy and often did much harm. From the excellent results of von Hippel and Schieck in tuberculin T.R. he should certainly try it on every doubtful case as a means of diagnosis and in every case as to treatment. It was necessary to watch very carefully the temperature of the patient, which should be taken night and morning. The largest dose at start ought not to be greater than $\frac{1}{500}$th milligramme, gradually increased to one milligramme dose. 4. Excision in intra-orbital tuberculous condition of the eye should, in his opinion, be seldom done unless there was a great deal of pain or the condition was actually telling on the patient's health. As the condition was not primary it only removed one focus of the disease and the experiences set forth by Rogman seemed conclusive as to the danger. This was apparently much increased if the sclerotic was involved. Out of 11 cases of death after excising a tuberculous eye no less than eight died within two months from tuberculous meningitis, a great contrast to Schieck's 13 cases treated with tuberculin in which all were cured and no eye was lost. 5. In miliary tubercle of the choroid he had never seen vitreous opacities, neither were they present in his two cases of chronic choroidal tubercle. In these two cases also, which were the only ones he knew certainly cured, after severe tuberculous choroidal trouble the chief characteristic was the little apparent change in the part of the fundus in which the tubercle existed; in another case the absence of any pathological pigmentation and in a further case the slight amount of pigmentation even in the neighbourhood of the greatest lesion were striking 6 In cases at St. Bartholomew's Hospital of chronic pulmonary tuberculosis he could find no note of chronic choroidal change. Dr. George Carpenter and Mrs. Stephenson found in 119 cases of chronic tuberculosis in children choroidal changes in 11, or 9·24 per cent. These authors arranged them into four groups; (1) solitary; (2) multiple; (3) disseminated; and (4) diffused. 7. As to this point his own two cases were the transmitted as intrinsic pathogenic variations of the embryonic brain and nervous system; such was the variety of delusional insanity founded upon definitely evolved hallucinations, also certain affective deep-seated insanities of the depressive and suicidal type. Some insanities owed little to heredity and much to stress (anxiety, shock, and great calamities). The cure of pulmonary tuberculosis would go a long way to diminish the lower forms of insanity—especially idiocy, imbecility, and feeble-mindedness.

Mr. EVAN POWELL (Nottingham) expressed gratitude for the splendid collection of valuable statistical material by the President of the section and hoped that other members would engage in similar investigation and "go and do likewise."

Dr. SCHOFIELD read a paper on

The Extension of Psychology in Medicine,

not, he said, as synonymous merely with the psychology of insanity but as embracing the field of psychological conditions observed in other diseases and in normal life. He spoke of the educational value of training in psychology, not the metaphysical speculative theories of armchair philosophers but the scientific structure of knowledge built up by observation, experiment, and induction in both normal and pathological human subjects. He also laid down certain statements as to the nature and relations of conscious, subconscious, and unconscious mind, using the last term in a wide sense to cover various phenomena of the life of the nervous system, not necessarily psychical but dependent on so low a level as the bulbo-spinal system.

The PRESIDENT of the section made some observations on the value of a knowledge of psychological medicine and urged that it should enter into the curriculum of the medical student, for every general practitioner and physician had occasionally to meet and to treat, at least temporarily, such cases on emergency and until a specialist could be consulted.

Mr. JAMES STEWART (Clifton) referred to the psychic action of drugs which was, he believed, generally neglected by those who prescribed them.

The discussion then terminated with a proposition drawn up by the PRESIDENT of the section, moved by Dr. HYSLOP and duly seconded, and unanimously passed, to the effect that the central council of the British Medical Association should be asked to appoint a committee for the investigation of hereditary forms of disease and to place at the disposal of the committee such funds as would enable it to report on the whole subject.

THURSDAY, JULY 27TH.

Mr. R. C. STEWART (Leicester) read a paper entitled

Short Notes on Lunacy in Leicester, showing Plans of the New County Asylum.

He dealt with the historical development of lunacy in Leicester, the erection of the asylum, and its administration under succeeding superintendents. Various improvements were made in the internal arrangements of the buildings as regards ventilation, flooring, and general hygienic condition until in the last decade the Leicester County Asylum was universally recognised as one of the best equipped and administered public institutions for the care and treatment of the insane in the Midlands. Referring to the problem of increasing admissions, Mr. Stewart said that the asylum was now very slightly overcrowded and consequently that only patients belonging to the county of Leicester could be admitted. The increased pressure on accommodation in recent years led to the adoption by the Leicester asylums committee of a plan of building a new asylum. The complete plans have already been prepared and the building is now in process of erection. Mr. Stewart showed on a large scale plan a number of interesting features in the disposition and arrangements of the wards and dormitories to secure for the patients free and ready access to the gardens and walks and described the addition of two houses to accommodate private patients paying one guinea weekly, detached from the main buildings and having almost the home-like appearance of villa residences which, he thought, would be appreciated by the patients.

Dr. JONES and Dr. BOWER made appreciative comments on some of the technical particulars of construction of the new asylum.

Mr. STEWART, in reply, said that the flooring adopted was a hard and almost imperishable structure of teak wood specially prepared for the purpose.

Dr. HYSLOP opened a discussion on

Occupation and Environment as Causative Factors of Insanity.

In dealing with the causation of the insanities, he said, "we must always take into account and allow for factors which are internal—*i.e.*, either due to inheritance or the existence of some fundamental capacity which cannot be explained as the result of ancestral inheritance." It was also necessary to form clear conceptions as to the operation of sociological factors or, in other words, to the social environment and those which had their origin in physical causes either affecting the physical organism or having their seat in the physical mechanism itself. Regarding the British race they saw a remarkable transformation which had taken place. The race had passed from a natural state to an artificial one of enforced brain activity with all its attendant evils. The effects of rural and urban life had never been accurately determined. The transformation from rural to urban life was accompanied by influences which proved deleterious to mental health and stability. Migration from country to town not only brought about a condition of nervous strain for those who migrated but also left its stamp upon the depopulated rural districts in the form of degeneracy owing to intermarriage among relatives and the residuum of the less fit. Education and agricultural depression have favoured this tendency to migrate and they have also largely aided in changing the social conditions of those who by habit and heritage were ill-adapted for the expenditure of nervous energy. Whereas education and the requirements of this brain-age necessitated a constant increase in the output of nervous and mental energy so as to enable the greater number to reach the highest possible standard, the output of physical energy was undergoing a constant diminution owing to the "standardisation" of labour at a very low quantity, be it skilled or otherwise. They were confronted, therefore, with the problem of over-education and the possibility of a faulty expenditure of nerve energy, the problem of diminution of hours, and the various restraints imposed by trade unionism, not to mention other agencies which as a whole aided the tendency to standardise at the level of the least efficient and thereby to diminish the vitality of the British unit. Education wisely directed was not in itself an evil, but ever since the Education Act of 1870 they had been striving with faulty methods after the unattainable. With the increase in the imposition of every grade of education from the Board school to the highest university curriculum, the brain tax on the people had become more and more irksome and the amount of pauperism, overcrowding, and mental failure had increased by leaps and bounds far beyond anything before known in the history of the empire. The public mind was at present much agitated by the alleged prevalence of physical deterioration, by the diminishing birth-rate of the last few years, and by the increase in infantile mortality. The Bishop of Ripon, speaking in the House of Lords a week ago, gave it as his opinion that the facts revealed in the inter-departmental Commission on Physical Deterioration were pregnant with danger to the empire. He contended that unless some steps were taken the British race would no longer be able to maintain its position as a colonising and a ruling power. While the tendency to degeneracy of mind and physique arose from the modes of life and the unphysiological habits and surroundings of the male population now well understood, the occurrence of a similar downward tendency had been recently recognised in women. The causes of this were interesting. Alcoholic intemperance had, like secret drinking, been increasing among women partly owing to increased facilities of obtaining alcoholic liquors. Pregnancy, parturition, the puerperal state, and other conditions incidental to the female sex became greater sources of danger in the new modes of life and women were less fitted than men to withstand the strains upon their nervous systems. In a word, the removal of woman from her natural sphere of domesticity to that of mental struggle and fierce competition in the strenuous life had not only rendered her a physically feebler mother less fit to sustain the virility of the race but it had induced in her a tendency prone to issue in the increasing degeneracy of her progeny. Woman's rôle in this world was that of wife and mother. They granted to woman the right of being a great civilising and refining agent as well as being an ornament, but in intending her to be a mother nature gradually fashioned her destiny for woman in the æons of the past. And although much had been, and was being, done to improve the fitness

In practice it was his habit to ascertain the smallest disc of chequers which could be distinguished as such at a given distance. By way of control grey discs were intermingled with the chequered discs. By altering the positions of the lines of the chequers it was possible to ascertain the axis of an astigmatism very readily and he found that children would more readily respond to this mode of subjective test of visual acuity than when Snellen's "E" test was employed.

Mr. **BEAUMONT** said that the test seemed to meet some of the difficulties found in using the ordinary test types.

PSYCHOLOGICAL MEDICINE.

WEDNESDAY, JULY 26TH.

The Presidential Address was delivered by Dr. **ALEXANDER R. URQUHART**, medical superintendent of Murray's Royal Asylum, Scotland, on

The Clinical Study of the Heredity of Insanity.

The proper adjustment of organism to environment was, he remarked, a necessity whereby only life could be lived and progress made possible. Statistical facts and data were, when carefully collected, the foundation of nearly all their knowledge of heredity. This was the Galtonian method, now developed in the special direction of "biometric" study by various investigators. The breeding of animals, the culture of plants, and man's own experience of health and disease in families constituted a body of knowledge extending for centuries into the past and at present classified and collated by various workers, so that it had added largely to the scientific knowledge of heredity. The special heredity of mental disease had been paid attention to in the classical work of Morel of Belgium (1858) and Thurnam of York about the same period. Since then memoirs had been published by Dr. Grainger Stewart (1876), Dr. G. H. Savage (1877), Dr. W. F. Farquharson of the Westmorland Asylum (1893), and by many French and German alienists. The figures given by various authorities as to the prevalence of heredity as a factor in insanity were in fair accord, the observations made showing that from 45 to 50 per cent. of all cases of insanity were of predominantly hereditary origin. This was a conservative estimate, for some authors had traced a hereditary origin in 60 per cent. or more of cases admitted to the asylums of large cities. Various psychoses, apart from, and not amounting to, insanity, were met with in abundance in the families of the patients, whether among the parents, uncles and aunts, or among the brothers and sisters. Dr. Urquhart showed a large number of coloured diagrams in which, in the form of genealogical tables, these facts relating to insanity on the one hand and the various family neuroses and psychoses on the other were graphically demonstrated. A tuberculous ancestry was, he said, fairly common in insanity, especially in cases of idiocy, imbecility, and the feeble-minded forms of the "degenerative" insanities. The heredity of syphilis was hard to discover and difficult to trace. A drug-craving heredity, as, for example, morphinism or cocainism of the parents, was rarely found. A cancerous heredity, in the absence of neuroses and psychoses, was definitely traced in a moderately small number of cases. As the result of 25 years' observation on 1104 cases admitted to the asylum it was found that hereditary predisposition in the line of ancestry was very marked in nearly 50 per cent and that a large proportion—about 70 per cent.—had insane relatives not in the direct line of the patient but collaterally related to him closely (brothers and sisters, or uncles and aunts paternal or maternal), while the patient's own parents manifested no insanity themselves. If neurotic ancestors and near relatives were counted in the etiology as contributory proof of hereditary taint the total heredity of insanity in round numbers would mount to about 75 per cent. Studying the families of 623 certified patients it was found that insane parents or near relatives existed to the total of 702 in the 623 families; it was further ascertained that the neurotics numbered 240, the paralytics 191, the alcoholics 169, the tuberculous 259, and the cancerous 70 in the total number of the families. A large series of over 100 tables of data was exhibited and the whole body of facts was expounded with their aid. Dr. Urquhart urged, in conclusion, that in the study of the ancestral heredity of the insanities particular attention should be paid to the occurrence in the ancestory or close collaterals of the presence of psychoses, neuroses, alcoholic and drug habits, apoplexy, senile dementia, congenital mal-development with great eccentricity of mind, suicidal impulses, and the presence of the two great constitutional degeneracies, tuberculosis and cancer. The statistics of general hospitals constituted only a part, a small part, of the data required for a due investigation and study of heredity. Science, the high aim of which it was to search, to investigate, and to understand nature and thus to obtain the mastery of nature, should start with the belief that nature was intelligible, comprehensible, and to some extent conquerable. The time was approaching when, with the coöperation of pathology, clinical medicine, and comparative biology in the widest sense, a fuller light would be achieved regarding many of the mysteries of heredity.

Dr. T. B. **HYSLOP** (Bethlem Royal Hospital) said that the mental and physical health of the community was of the utmost importance, and judging from the trend of enlightened public opinion there was immediate need for legislation in matters pertaining to insanity. The large annual increase of insanity and the alleged prevalence of physical deterioration showed that there was retrogression in a large section of our race. There was need for a competent commission to inquire into the matter; the Commissioners in Lunacy were too much overburdened with work to be of any service in this respect. A thorough and systematic inquiry, of which the presidential address embodied the best features, was necessary. Dr. Hyslop also spoke on the subordinate rôle which toxins played in insanity, not as primary causes but frequently as "terminal infection" of the damaged body.

Dr. W. **LLOYD ANDRIEZEN** (London) referred to the biological aspects of heredity and variation, and stated that the higher animals and man showed more stability than the lower forms (protozoa and lower metazoa). Mutation, as described by Darwin, De Vries, and others, played a very important rôle in modifying heredity, and he spoke of recent researches in biology and mental pathology which showed that pathogenic mutations might occur in families of the human race and lead to three or four generations of cerebral and mental degeneration ending in extinction of the stock in question. Regression, as defined by Galton, affected only normal and small variations and kept them within conservative limits but pathogenic mutations ended in extinction of the stock in a few generations by its prepotency. So it was in many prepotent cases of tuberculosis, the insane diathesis, and cancer. He referred to the classical work of "The Jukes," by Dugdale, and to the continued production of demi-cretinism and sterile cretinism in parts of the world as classical instances of pathogenic mutation. Imbeciles, feeble-minded and defective children, anergic tramps, vagrants, and prostitutes were products of degeneracy brought about in various ways by the coöperation of bad parentage and evil environment, a grievous burden to the State, whose serious attention should be awakened from its long slumbers.

Dr. **FLETCHER BEACH** (London) referred to the tuberculous factor in the parentage which entered largely into the etiology of idiocy and imbecility as shown by the constant experience at Darenth Asylum, the Bicêtre, and other special institutions for idiots and imbeciles. As regarded the heredity of insanity proper—viz., the higher degenerative and the more purely psychic alienations—his experience agreed with that of Dr. Urquhart. He strongly hoped that the Government would take up the investigation of the matter.

Dr. A. M. **JACKSON** (Nottingham) spoke of the importance of studying the character, not only of the brain as such, but of its vascular condition in cases of hereditary insanity.

Dr. A. T. **SCHOFIELD** (London) said that there was much ignorance of the public as to insanity and its transmission, while some people exhibited callous indifference when they wished to marry and seldom or never followed the medical advice which they sought "for conscience sake." Disorders of excretion and digestion had an important etiological rôle in the development of insanity.

Dr. T. **JOHNSTONE** (Leeds) remarked that paranoia, a slowly progressive incurable insanity, might develop from eccentricity and that unsuitable marriages might induce hopeless hereditary insanity in the offspring of a tainted father or mother.

Dr. **DAVID BOWER** (Bedford) agreed generally with the facts and conclusions of Dr. Urquhart and spoke of the increase in alcoholic insanity.

Dr. **ROBERT JONES** (Claybury) said that heredity and environment were both important. Some insanities were considered it an undoubted fact that the majority of children born of syphilitic parents possessed a marked immunity to the disease, for when exposed to the specific poison in later life either they acquired the disease in a very mild form or exhibited complete immunity, so that there was a striking tendency for the disease to be self-eliminating in its effects, and he mentioned the fact that he had only once seen a typical secondary rash in a man with the well-marked stigmata of congenital syphilis. Syphilis may therefore act as an eliminator of the unfit but if his premisses were correct it also acted as a causative factor in the production of degenerate stock, as owing to its long duration it tended to devitalise the reproductive elements as well as the body cells. Evidence was available, too, as to the devitalising influence of lead, for not only was chronic plumbism capable of producing abortion and miscarriage in the female but male subjects of the disease mated to normal females were sterile or gave rise to devitalised offspring which either died in utero or shortly after birth. Discussing next the influence of alcohol Dr. Mott referred to the generally accepted view that the poison was a potent factor in the production of mental and physical degeneracy of the offspring and pointed out that no certain data were available to combat the equally valid assumption that the mental defect of control, or what not, that led to the drunkenness in the parent was alone transmitted—increased perhaps owing to the influence of the poison and made permanent by imitation, and stated his opinion that alcohol was an active poison to all neuropathic stocks and so acted as an eliminator as well as a producer of the unfit, and in this connexion he differentiated between fermented alcoholic beverages and distilled liquors. The belief that tuberculosis was particularly prevalent, although preventable, in asylums was combated by evidence obtained by him in two of the London county asylums, which showed that between 40 and 50 per cent. of patients dying therein exhibited obsolescent or active tubercle, in the case of the majority dating back to a period prior to admission. Tubercle must be regarded as an expression of low vital resistance of an enfeebled and degenerate stock rather than a cause of insanity and although the germs of the disease were destructive to the individual they were, on the other hand, conservative to the race by removing the mentally unfit at an early period of adolescence; the probable explanation of the association of tubercle and insanity was to be found in the congenial soil provided by a stock with a neuropathic taint, especially when aggravated by alcohol and sexual excess. Another point relating to the elimination of the unfit was touched upon by Dr. Mott when he stated that the ranks of urban prostitutes were largely recruited from the morally defective and feeble-minded who, generally early in their career infected with the gonococcus, suffered from adhesive inflammation of the oviducts and were thus rendered sterile. He next dwelt upon the comparative value of statistics in relation to the hereditary transmission of nervous and mental diseases as illustrated by figures dealing with the London county asylums admissions for the last ten years. These, he pointed out, were untrustworthy, heredity as an assigned cause of insanity at one of the asylums being recorded as 11·7 per cent. in one year and 27·8 per cent. the next year, and he briefly discussed the factors that tended to make them so, expressing the opinion that the average in which heredity was the assigned cause of insanity is much below the real percentage and that insanity itself is certainly not decreasing but is probably increasing. In conclusion the President of the section queried whether the slow increase of constitutional immunity and the securing of a better social environment for the masses were the only available means for the prevention of social degeneracy, or should some other means be adopted, such as the encouragement of the reproduction of the fit, the more effectual limitation of the reproduction of the unfit, or preventive measures against the spread of alcoholism, syphilis, and tuberculosis?

The results of the work of Dr. GEORGE A. WATSON (London) upon

Inherited Immunity: Experiments with Ricin and Abrin,

were then given by the President of the section in the absence of the author in some detail, from which it appeared that the effect of prolonged immunisation of rabbits and guinea-pigs against abrin and ricin was to diminish reproductive activity in both sexes, without, however, interfering with the sexual appetite; that when offspring resulted, especially when the female was the immunised parent, they were puny, born dead, or died shortly after birth: whilst the reproductive organs showed no changes to account for these facts. No immunity could be shown to be transmitted through the male parent alone but in one experiment the offspring of immunised parents showed considerable immunity, probably gained through the maternal blood and milk.

Dr ARCHDALL REID (Southsea) pointed out that in discussing questions of heredity it was necessary to distinguish between variations and acquirements. When a toxin circulating in parental blood injures the germ cell and so leads to the production of degenerate offspring it does not follow that the injury constitutes a variation—a new character transmitted to the offspring. It may be a mere acquirement and therefore not transmissible. In fact, it is almost certainly an acquirement, otherwise it would be impossible to explain why races which have long been subjected to the influence of such a virulent poison as that of malaria have not become extinct by accumulation of injury. The obvious conclusion to be drawn from this fact of the survival of races long exposed to particular diseases is that the toxins of disease, even when they act directly on the protoplasm, cause not transmitted variations but non-transmissible acquirements.

Mr. CHARLES J BOND (Leicester) continued the discussion by contributing his study

On the Correlation of Sex and Disease.

Instancing first hæmophilia, the best-known example of a disease usually associated in its manifestations with one (the male) sex, although the abnormality was transmitted almost exclusively by the opposite (the female) sex, Mr. Bond pointed out another and equally important form of sex and disease association in which, whilst both sexes were equally liable to a given disease, in some particular family the males were attacked and the females escaped and in another family exactly the opposite took place, and illustrated his remarks by means of a family tree showing the incidence of ichthyosis on the male side and running through three generations. Passing then to deaf-mutism Mr. Bond stated that he had been able to investigate the family history in 12 instances and the important point brought out by his observations was that the abnormality, though affecting both males and females, was mainly limited to one sex in each family. The last family in his series was particularly striking in that the parents being healthy the first three children born of the union were females and healthy: the next six were deaf-mute males; then followed four healthy females: and finally a healthy male. Following this series of families Mr. Bond related a further series of five families in which both sexes were affected, explaining the apparently conflicting evidence by stating that the affected males and females were either twin or successive births or in one family the only two children born. Mr. Bond summarised his results by pointing out the absence of direct transmission of the disease from parents to the children; the marked fertility of the families in which deaf-mutism occurs, Leicester and Derby statistics giving an average of seven children as against an average of five; the affection of only one sex—and not always all the members of that sex—in a family; and in the exceptional cases where both sexes were affected in one family, the deaf-mute children were either twins or successive births. Mr. Bond remarked on the paucity of their knowledge of the factors which controlled the determination of sex and suggested that in the case of deaf-mutism the female or male sex character, as the case might be, in each family had become linked up with another character, in this particular instance an abnormality or disease—namely, deaf-mutism; and from the data he had placed before the section it would appear as though the gametes produced at one period of the life of the parents more nearly resembled each other than those produced at another period, either earlier or later, an assumption strictly in accordance with the results obtained in experimental breeding in animals. Mr Bond concluded by expressing the belief that sufficiently wide investigation would demonstrate the sex correlation of even the infective diseases, such as tuberculosis.

Mr. E. SCHUSTER (Oxford), the Galton Scholar in Eugenics, then read a paper entitled

On the Data required by a Statistician for the Study of Inheritance of Disease,

in which he suggested that the subject of the inheritance of disease was one which required ultimately to be dealt with by the statistician; and although statistical methods were of the female population to become wives and mothers he thought there was a tendency on their part at the present day to depart from their rôle in nature and that the obligations of womanhood and motherhood were becoming through all classes of society more and more neglected. The forcing education and exhausting overstudy of girls in the period of puberty and adolescence rendered them neurotic and was incompatible with perfection of sexual development and vigour, their capacity for child-bearing and child-rearing was stunted, and the artificial conditions of society which demanded that woman should participate in the keen, arduous, and trying intellectual struggles and competitions, hitherto the lot of man alone, had done much to bring about the physical deterioration, the infantile mortality, and the diminished vitality of the progeny—the penalty exacted by nature for the violation of her laws. Modern conditions of life and society failed to recognise, indeed, looked with almost aversion on, the idea hitherto universally recognised that woman did more than half to fashion the destiny of the race, that her obligations began with childhood, culminated in the production and upbringing of children, and only ended when she had nourished her young and imparted to them a vigour and fulness of life which could not be obtained by any artificial modes of feeding so much in vogue at the present day. Men would be better able to support their wives and families if not handicapped by female competition; and by giving up many of the so-called claims of society, excessive personal adornment, or restless desire for amusement, in other words, by being content with a simpler life, woman would make the task of man much easier of accomplishment. It was a miserable travesty of the scheme of evolution that the brains of babies should be State-fed by mental arithmetic while their little bodies were nurtured by artificial foodstuffs derived from every available source other than their own mothers. Dr. Hyslop concluded with observations on the influence of the religious and moral environment on women. Religion and moral obligation overlapped each other considerably and both were the outcome in nature of a deeper lying fundamental law of wisdom and righteousness which revealed itself in the highest evolution of sentient beings, of whom man was the type on this earth of ours. To voice these problems of vital importance and interest to the welfare of the race he thought that the medical faculty should be more strongly (numerically) represented in Parliament.

In the discussion which followed Dr. ROBERT JONES referred to the influence of mental over-pressure in the production of insanity as given in the statistics of insanity in the profession of governesses who showed a higher per centage of insanity than did the class of licensed victuallers and barmaids. This was borne out by the reports of the Commissioners in Lunacy a few years ago published shortly after the last census. He dwelt upon the degeneration occurring in the residual element left by extensive migrations from urban or country districts. He agreed with Dr. Hyslop as to the influence of religion, as he thought everybody would admit the influence of high ideals in enabling persons to preserve mental and physical health. Some of Dr. Hyslop's conclusions he thought indicated a pessimistic view in regard to womankind which he could not share.

Dr. ANDRIEZEN said that failures were inevitable in the progress of evolution of life and of races. A comforting assurance in regard to the hereditary transmission of evil traits was that the "tendency to regression" expounded by Galton showed that full inheritance was the exception and not the rule. Women had by long æons of evolution reached the exalted position of motherhood, revered and honoured by man, and she should never relinquish it.

Dr. SCHOFIELD defended woman ardently against some of Dr. Hyslop's "strictures," as he thought they were. He considered it quite right that women should, if they wished it, enter into the competition of professional life. He would not debar them in such legitimate and praiseworthy aspirations. Religion was an important factor in influencing for good the baser and lower passions of man.

Dr. JOHNSTONE dwelt on the importance of the environment. In this connexion he quoted examples from Virgil, Tennyson, Byron, and others, and said that in the professions of divinity, law, and medicine the advantage lay with the last.

Dr. C. S. MORRISON (Hereford) spoke at some length on the evils of emigration resulting in the degeneration of the residuum left behind unless it was reinforced by fresh blood. Sometimes marked deterioration occurred in such depleted communities.

Dr. FLETCHER BEACH spoke of the great numerical excess of women over men which made the social problem hard and complex in regard to earning a living, for the "superfluous women" could never expect to find husbands. He looked upon teaching as an excellent occupation for women. He believed governesses were prone to insanity owing to the anxious and precarious nature of their profession.

Mr. JAMES STEWART said that women so long as they retained the freshness and attractiveness of youth would not experience difficulty in finding husbands.

Dr. HYSLOP replied.

Dr. W. A. POTTS (Birmingham) read a brief paper on

The Causation of Mental Defects in Children,

dividing the latter into the three classes of idiots, imbeciles, and the feeble-minded. These could again be divided into a "deviational" and a "degenerative" group. "Except the small number classified as deviations from the normal I ascribe practically all cases to physical degeneration at an earlier stage," concluded Dr. Potts.

Brief remarks followed the paper and after Dr. POTTS's reply the meeting terminated.

PATHOLOGY.

WEDNESDAY, JULY 26TH.

Dr. F. W. MOTT, F.R.S. (London), the President of the section, opened the discussion previously arranged for the day with an address entitled

The Relationship of Heredity to Disease.

First promising that the importance of heredity in relation to disease could only be estimated by carefully collected comparative statistics based upon a family history that included grandparents, uncles and aunts, and even first cousins, Dr. Mott referred to the commonplace observation "Like begets like" (which he contended was more correctly rendered by the formula, "Like tends to beget like") as being first met with in the writings of Lucretius, and to the confirmation of this aphorism afforded by the independent observations of Galton and Weismann that each parent contributed one-fourth, each grandparent one-sixteenth, and so on, to the individual offspring. Instances of hereditary transmission of defective durability of special tissues—e.g., hereditary ataxy, or of inherited morphological defects of blastogenic origin—e.g., hæmophilia, polydactylism—afforded excellent examples for the study of hereditary transmission owing to the almost complete elimination of the personal equation of the observer and were illustrated by a series of lantern slides and their chief points of interest were enlarged upon. Inherited tendencies to defective metabolic processes and inherent deficiency of durability of the vessel walls was next discussed in its relation to presenility and arterio-sclerosis and contrasted with specific instances of inherited vitality and durability of the tissues. Diseases could be classified as inherited (i.e., directly derived from the reproductive cells before conjugation), congenital (acquired during intra-uterine development), and post natal. Thus the subject under discussion was at once limited to effects produced on the germ cells before conjugation and whilst still in the bodies of the respective parents, and the President of the section proceeded to discuss whether the profound biochemical changes in the lymph and blood resulting from the action of poisons elaborated within the body (e.g., those of tuberculosis and syphilis) or introduced from outside (e.g., chronic alcoholism and plumbism) could so modify the male germ cell that the fertilising spermatozoa conveyed specific morbid characters and after conjugation with the healthy ovum led to the transmission of disease to the resulting offspring, and expressed the opinion that the causative agents of tuberculosis and syphilis were unable to pass into the head of the sperm cell without destroying it and so rendering conjugation impossible. Experience showed that syphilis, for example, had but little appreciable effect on the sperm cell and when transmitted to the succeeding generation was almost always associated with maternal infection. Dr. Mott here referred in some detail to his observations on parasyphilitic affections in general and the juvenile form of general paralysis in particular, which led him to agree with Koenig that general paralysis is an acquired disease due to syphilis and that one effect of syphilis upon the germ plasm in highly civilised races was to produce a neuropathic tendency. At the same time he dental irritation some few of the cases of otitis media, especially in young children, not as the direct cause but as a contributory one in depressing the vitality of the affected ear. Such a supposition might account for the difficulty in treating cases of otitis media in children during teething. Arthritis of the temporo-maxillary articulation was another fruitful cause of neuralgia of the ear. Occasionally swelling and œdema of the tissues over the mastoid process were directly due to extension of inflammation from dento-alveolar abscess and might be confused with mastoid disease. Of the effect of removal of the teeth upon the acuteness of hearing he was inclined to be sceptical and although a history indicating such a circumstance was given by some patients it was to be regarded rather as *post hoc* reasoning. Chronic antral suppuration was also a cause of aural neuralgia.

The contribution of Dr. LEONARD G. GUTHRIE (London) to the discussion was read by the honorary secretary in the author's absence. Dr. Guthrie considered that although at one time "teething" and "breeding of the teeth" were so largely held accountable for most infantile diseases, and although the public even now persisted in ascribing all complaints of infancy to teething, perhaps they paid less attention to the subject than its merits deserved. At the very start they were handicapped by not possessing a proper explanation of tooth eruption of a sound physiological nature. In dentition increased salivation might be the only sign, but when pain existed the child often rubbed his ear or the back of his head showing that the pain was referred elsewhere. Convulsions were more common in children below the teething age than during it. Where an unrecognised pneumonic crisis corresponded with the eruption of a tooth it was possible that the one was referred to the other. The reflex theory would not explain all the complaints associated with painful dentition, neither would the pyrexial theory, while the supposition of especial susceptibility at the period of tooth eruption seemed opposed to the fact that dentition was a normal process. Painful dentition was invariably associated with gastro-intestinal disturbance and it appeared that painful dentition depended on a general disturbance with associated sore gums due to gastro-intestinal irritation of unsuitable or sour and fermented food.

Some remarks by Dr. E. CAUTLEY (London) were also read by the honorary secretary. Dr. Cautley considered the relation of the teeth to diseases in early life and in the course of his notes suggested that two main points required consideration—the teeth during eruption and during decay. Teething with "bronchitis," "gum rashes," and so forth were not infrequent expressions, and the diarrhœa frequently existing with teething was often neglected from its supposed origin in the mouth, and Dr. Cautley considered that a diagnosis of teething covered numerous sins of omission in the investigation of infantile ailments. Febrile attacks associated with sore gums might result in decrease of digestive juices and overfeeding to allay the fretfulness wrongly ascribed to hunger. The association of rickets with delayed and defective dentition was important. Pure reflex disturbances from diseased teeth were rare; in a few cases retraction of the head, common in meningitis or pneumonia, might be produced dentally. Fits were very doubtful reflex phenomena and were rarely ended by the eruption of the supposed offending tooth. Much more stress was to be laid upon the importance of decay of the teeth as a cause of ill health in early life than upon the process of eruption.

Dr. ROBERT HUTCHISON (London) considered it very doubtful whether the many disorders commonly and popularly ascribed to reflex nervous effects of dental origin had any relation to the process of dentition. The hypothesis of a "reflex exciting cause" was too often dragged in to explain something for which no adequate cause could be obtained. Convulsions were a particularly good example of this condition now generally recognised as of rachitic origin, while the unstable condition of the whole nervous system associated with this disease allowed the action of many exciting causes of which the cutting of teeth might be one although very far from the commonest cause of convulsions. A much more prominent rôle was to be ascribed to colic. A few remote disorders were aggravated by dentition, such as bronchitis and diarrhœa. A reflex congestion of the bronchial tubes might be associated with swollen and painful gums, thus predisposing to bronchitis, and the aggravation of eczema of the face appeared to be associated with reflex dental origin. The whole subject, however, was one upon which it was impossible to speak dogmatically.

The PRESIDENT of the section congratulated the section on the excellence of the discussion which on his motion was adjourned until the next day.

THURSDAY, JULY 27TH.

Sir VICTOR HORSLEY (London) continued the adjourned discussion. He said he was greatly pleased at the establishment of a section of dental surgery and that it was an excellent thing from both the general as well as the dental surgeons' point of view; moreover, the dental surgeon almost invariably saw the earlier manifestations of pathological changes involving the fifth nerve while the general surgeon usually did not see the cases until the later stages. The earlier changes might be termed congestive and the later cicatricial in neuralgias of the trigeminal nerve to which he would confine his observations. The cause of the neuralgia might be either central or peripheral and after reading the extract of Mr. Mummery's paper and the remarks of Dr. Risien Russell and other contributors to the discussion he thought that it was possible to diagnose between neuralgias of central and peripheral origin; it was difficult to classify but it was becoming increasingly easier. The cases of peripheral origin were those especially seen by the dental surgeon and in some of these peripheral cases, such as chronic osteitis of the alveolus and tooth sockets, an ascending neuritis had been traced. Bilaterality involved a serious question for the patient. The diagnosis between functional and organic disease, although difficult, was possible. Hypersecretion, such as increased lacrymal or salivary secretion, when associated with the irritation of the neuralgic attack, was a diagnostic sign of the organic origin of the neuralgia. Sir Victor Horsley, in continuing, proceeded to give the details of two cases in which the Gasserian ganglion was removed upon both sides. Loss of muscular movement of the jaws would follow removal of both ganglia but in these two cases the motor root on one side was left. Slight obliquity of articulation occurred but was not very noticeable and the neuralgia was cured. Neuralgias of central origin were due to primary neuritis of the ganglion or a neuritis spreading to it, acute inflammation of unknown cause, inflammatory changes due to the "micrococcus of herpes" and sclerotic and cicatricial inflammation. In most cases the ganglion was flattened by cicatricial tissue, sometimes congested and swollen. In these cases resection of the Gasserian ganglion was the only permanent cure. Other treatment was generally of a temporary nature, nerve section usually being followed by union in two years' time. The risk of the operation, although a serious one, was not very great. More than 100 cases had been operated upon, so that it was possible to talk in percentages. The accidental death-rate was 7 per cent., including hæmorrhage and septic infection. Up to 55 years of age the rate was very small and practically only due to sepsis; above 55 hæmorrhage associated with arterio-sclerosis, to which these patients were liable, caused 5 of the 7 per cent. of deaths. Eye risks were still smaller, but though the eye was not so often lost now there was still some unknown factor which caused keratitis.

Mr. F. J. BONNET (London) regretted the absence of Mr. W. Lang who was to have taken part in the discussion and who would have given a valuable contribution from the standpoint of the ophthalmic surgeon. Affections of the eye associated with, or due to, dental lesions had been recorded by Mr. Henry Power and Sir W. J. Collins amongst others, while not a few cases had from time to time been recorded by dental practitioners, and the speaker would confine his remarks to the dental surgeon's point of view. The vagaries of tooth disease were well known to dental surgeons and the dental practitioner was therefore able to form a clear idea of the class of case likely to be responsible for changes in the eye. By far the largest number of cases of eye disease associated with dental lesions were due to direct spread of disease from the jaws rather than to reflex disturbance. Thus, in a case described by Mr. Henry Power as a typical example of reflex amaurosis of dental irritation there was swelling of the face with discharge of pus in the neighbourhood of the lower eyelid. In looking over the reports of cases he found constant record of dead teeth and Sir W. J. Collins especially called attention to the undoubted evidence of the spread of oral inflammations in abused as leading to fallacious conclusions, such fallacies as they give rise to were due not to the methods themselves but to faulty methods of application. The problem set the statistician for solution in the present instance might be stated as "given a certain disease in some or all of a man's parents, grandparents, collaterals, &c., what was in each case the probability of the disease occurring in the man himself?" and provided the requisite data were forthcoming the problem could be solved with mathematical accuracy and precision. The requisite data were, first, the definition of a more or less homogeneous class—that was to say, a class of people belonging to more or less the same race and living under similar conditions as regards climate, housing, nutrition, &c.; secondly, the percentage incidence of the particular disease, as distinct from the mortality, in the class already defined; and thirdly, having defined the class and divided it into those who suffer from the disease and those who do not it was necessary to determine for each of those divisions what number possess ancestors or collaterals suffering from the disease. In other words, if it was desired to estimate the exact amount of force exercised by heredity in the production of a disease it was not sufficient to know the family histories of the people suffering from it; the family histories of people of the same class who did not suffer from it were also needed. Whilst it was impracticable to investigate every member of the defined class great care was needed in the selection of truly representative samples, for if genuine random samples were taken the error would be certain and determinable and would vary inversely with the extent of the sample taken.

Mr. C. C. Hurst, F.L.S. (Burbage, Leicestershire) appealed to the medical profession to help in the good work of obtaining facts on the heredity of disease and suggested that such facts should be carefully obtained by a study of individual histories and pedigrees. He pointed out that Mendel's law of heredity which had only recently become generally known, although very simple, was undoubtedly of the highest importance. This law had been clearly shown to hold good for nearly all simple characters in plants and animals and it seemed possible that the more complicated inborn or inherited characters, such as those of disease, would also follow the same law.

Dr. A. W. Gilchrist (Nice) suggested that the discussion had the utility of demonstrating that the aspect and claims of philosophic medicine were not neglected. He propounded the questions, what was heredity? and what was disease? and beyond the conventional definition that heredity was a virtually passive link in the succession of individual existences confessed his inability to furnish adequate answers.

The President of the section briefly summed up the chief points in the discussion and Dr. Wright (Federated Malay States), in reply to a question from the President of the section, observed that the adults of certain aboriginal races exposed to infection by the quartan malarial parasite developed a marked immunity, whilst their offspring remained readily susceptible to the same infection.

DENTAL SURGERY.

Wednesday, July 26th.

This section met under the presidency of Mr. Morton Smale, when Dr. J. S. Risien Russell (London) introduced a discussion on

Toothache, Neuralgia, and Remote Affections of Dental Origin.

He said that he left to Mr. J. H. Mummery the task of dealing with morbid affections of the teeth and their effects, and devoted his attention chiefly to the class of case in which the teeth were not at fault but other morbid conditions caused pain referred to them or to regions well recognised as the seats of pain of dental origin. He pointed out that many such patients consulted dental surgeons in the first instance, so that it was in their power to direct them into the proper channels where the real nature of their disease could be recognised and treated. The affections of the nose and ear were left for others to deal with, as were the affections of childhood incidental to the discussion. He passed in review general conditions, such as anæmia, malaria, diabetes, and the debilitating effects of diseases like influenza, and made brief reference to certain rare affections such as facial hemiatrophy. He warned his audience to be on their guard against hysteria and in dealing with neurasthenia he emphasised the importance of never ceasing to examine for indications of obscure organic disease. He laid special stress on cases of epileptiform neuralgia (tic douloureux), in which affection the extraction of teeth was worse than useless and in which the extirpation of the Gasserian ganglion offered the only possibility of certain cure, a procedure which he had no hesitation in recommending owing to the highly satisfactory results that were to be obtained by the operation as devised by Krause. Another class of case in which he regarded it as of the utmost importance that the dental surgeon should recognise that something other than the affection of the teeth was responsible for the pain for which he might be consulted was disease of the accessory sinuses, and he emphasised the extreme importance of the early recognition of cases where malignant disease was responsible for the pain. A third group of cases in which the dental surgeon might have opportunities of assisting to a correct diagnosis in early stages of the affections was that in which intracranial disease occasioned pain in the distribution of the fifth nerve, in which affection he would refer especially to the effects of intracranial syphilis and to tumours at the base of the brain which involved the nerve. In conclusion, he invited discussion, especially on the last three groups of cases to which he had directed attention.

Mr. Mummery (London) said that in following Dr. Risien Russell it only remained for him to confine his remarks to the more particularly dental surgery aspects of neuralgias. The full discussion on oral sepsis which took place at the last meeting of the Association at Oxford rendered it unnecessary to deal with that question in the present instance. The subject would be considered under certain headings related: first, to diseased conditions of the tooth pulp; secondly, to affections of the dental periosteum; and thirdly, to difficult eruption and malposition of the teeth. Pain in the course or distribution of a nerve was, like toothache, not a disease *per se*, but a manifestation of irritation at some one or other point of the nerve and its branches. The areas mapped out by Head showed that the several teeth exhibited certain pain localisations, the area affected including the special tooth involved. Neuralgia occurred in edentulous jaws and also in the wasted alveoli of teeth that had been lost. All diseased conditions of the teeth might give rise to neuralgias and, most importantly, morbid affections of the tooth pulps. After referring to the work of Dr. W. H. Gaskell and Dr. D. Ferrier and the important developmental relation of motor and sensory roots as shown by their work, he dealt with the two divisions of neuralgic pain of neuralgia minor—viz., true neuralgia minor and visceral referred pain—the chief differences being that in visceral referred neuralgia the areas of pain were not coincident with the distribution of the branches of the fifth nerve, whereas in true neuralgia minor this was the case. Neuralgia minor closely resembled neuralgia major or neuralgia quinti-major (tic douloureux) at first but it was impossible to find any connexion between the pain and any diseased organ to which the pain was referred. Neuralgia minor caused typical darting pains, but the pain followed the distribution of the peripheral nerves and was not associated with hyperæsthetic areas as was visceral referred neuralgia. There were maximum spots in these tender areas. Mr. Mummery then discussed the various pain areas and tenderness areas associated with the special teeth, to which scarcely sufficient attention was generally paid by the dental surgeon. He then proceeded to detail some cases of neuralgic pain and the evidence obtainable of its origin from a consideration of the pain distribution. He referred to various other examples of reflex disturbance, including vomiting, eye and ear affections, trophic changes, and emphasised the extreme importance of excluding dental causes in all cases of obscure neuralgia, which was rendered still more essential from the fact that apparently quite minor dental affections were associated with very considerable neuralgic pain.

Dr. Urban Pritchard (London) continued the discussion and dealt with various affections of the ear, nose, and throat associated with dental origin. Such cases were, however, by no means so common as was generally supposed, "earache," especially in childhood, being considered by otologists as due to local inflammatory causes rather than to reflex irritation connected with dentition. In adults true neuralgia was more common and true neuralgia of the ear was more frequently due to dental reflex pain than to any other cause. Occasionally he was inclined to attribute to reflex individuals so treated and at the same time the blood condition improved and the local affection began to clear up. In a number of the cases so treated the local discharge of pus from the alveolar sockets ceased and the teeth became firm again. The acneform eruption on the face improved and in one instance a deep acne with much pustule formation associated with Rigg's disease entirely disappeared. Two cases of chronic nasal suppuration had been treated. One, a chronic antral empyema, which had been operated upon four times and at the time of injection was still discharging and was also causing neuralgic pain, entirely cleared up in three months. Details of other cases were given. In estimating the opsonic index he had observed that the most important factor was the time during which the serum was allowed to act. In a series of experiments the number of bacteria taken up by the corpuscles was proportionate to the time in every case, while no alteration was observed in the ratios by using one or three volumes of serum or corpuscles. The lassitude so frequent in the class of oral suppuration described was rapidly lost under the effect of the injections. The method of treatment promised to be very advantageous in treating alveolar pyorrhœa (a notoriously difficult disease to eradicate), by increasing the resistance to the bacteria causing the suppuration. The local treatment was, however, by no means to be neglected. A table illustrating the various alterations of opsonic index in relation to injection was also given. The negative phase of Wright was well marked and in some cases showed a marked prolongation; in two such cases nuclein had been administered and apparently produced a diminution in the length of the negative phase. Some of the cases showed a secondary negative phase after the positive one. Staphylococcal injections were contraindicated in cases of kidney disease owing to the selective action of the bacteria for those organs, as shown by the pyonephrosis and cortical abscesses produced in the rabbits inoculated with the cocci obtained from the pus in the cases described.

TROPICAL MEDICINE.

Wednesday, July 26th.

Professor **Rubert W. Boyce** (Liverpool), the President of the section, delivered an introductory address entitled

The Year's Progress in Tropical Medicine.

He stated that the record of the progress of tropical medical science, if perhaps not rich in discoveries as last year, showed both an increase in the amount of careful scientific observation and the practical good of the application of scientific knowledge to the prevention of disease over an ever-widening area of the world. Among many subjects of interest none perhaps was more worthy of note than the fact that some of the natives of the Gambia in whose blood Dutton originally detected the trypanosoma had since developed and died from sleeping sickness. During the past year Thomas had conducted an exhaustive experimental inquiry on the treatment of sleeping sickness and found that arsenic compounds in the various trypanosoma diseases of the lower animals had afforded encouraging curative results. In connexion with the Leishman body excellent work had been done by Rogers, Leishman, Donovan, Christophers, Balfour, and others. Bentley had contributed to our knowledge of protozoology, James and Patton had described leucocytozoa in certain animals, and Balfour and Christophers had found hæmogregarines in the red cells of certain animals. Ross and Milne had communicated the interesting discovery that spirochætæ were present in the blood of cases of tick fever and Todd and Dutton had succeeded in infecting the monkey and rat by means of ticks infected by feeding upon the blood of cases of tick fever in man. They concluded that tick fever was clinically identical with relapsing fever and that the transmission of the tick was not merely mechanical. Greig and Gray had been working on sleeping sickness in Uganda, and Dutton and Todd had followed sleeping sickness and tick fever along the waterways of the Congo. Thomas and Breine were engaged in the investigation of yellow fever on the Amazon, and Bruce had succeeded in elucidating the manner of infection in Malta fever. Surely no other department of medical science could show such activity as this nor did there exist one that deserved more strongly to be supported.

Dr. **John L. Todd** contributed a paper by himself and the late Dr. **J. Everett Dutton** entitled

The Nature of Human Tick Fever in the Eastern Part of the Congo Free State, with Notes on the Distribution and Bionomics of the Tick.

On Nov. 26th, 1904, Dr. Dutton and Dr. Todd published the statement that a spirillum was the pathogenic agent of the human tick fever that occurred in the oriental province of the Congo Free State and that they had succeeded in infecting monkeys with the spirilla through the bites of ticks. Tick fever, according to the observations of Dr. Dutton and Dr. Todd, was a relapsing fever produced by a spirillum probably identical with spirochætæ Obermeieri and this organism was transmitted by the bite of a tick subsequently proved to be the ornithodorus moubata. The history of human tick fever in the oriental province of the Congo Free State dated back to the time of Livingstone. Hinde, in 1892–94, stated that the natives of the Congo attributed some of their illnesses to the bites of the ornithodorus. The symptoms were liable to be mistaken for other diseases and by the microscope alone was it possible to clear up the diagnosis. The incubation period of tick fever was about one week. The chief symptoms were headache, browache, backache, distaste for food, vomiting, slight diarrhœa, with decided increase of temperature. The attack usually lasted three or four days, ending in free perspiration. There were usually three or four attacks with an intervening period between each of from five to ten days. Splenic enlargement, herpes, epistaxis, and hiccough were frequent accompaniments. Experiments indicated that the ordinary laboratory animals were not killed by the disease. In the blood the spirillum could easily be found when plentiful as a rapidly moving spiral thread; when scanty it was necessary to stain dehæmoglobinised blood stained by a modification of Romanowsky's method or a weak solution of carbol-fuchsin. The distribution of the human tick in the Congo Free State and its bionomics were also entered into in detail in the paper and the writers concluded that: (1) tick fever was clinically identical with relapsing fever and had for pathogenic agent a spirillum; (2) the spirillum was probably spirochætæ Obermeieri; (3) the tick ornithodorus moubata could transmit the spirillum from animal to animal; (4) the transmission was probably not merely mechanical but some developmental process was carried on in the tick; and (5) a considerable degree of immunity or tolerance to the spirillum could probably be acquired.

Mr. **R. Newstead**, of the Liverpool School of Tropical Medicine read a paper

On the Pathogenic Ticks concerned in the Distribution of Disease in Man, with Special Reference to the Differential Characters in Ornithodorus Moubata.

He said that ticks (ixodoidea) belonged to the class arachnoidea (spiders, mites, &c.), order acarina. This super family (ixodoidea) consisted of two sub-families—the argasinæ and the ixodinæ. The former was composed of two genera, argas and ornithodorus; the latter comprised nine genera. Mr. Newstead had found that in many respects the habits of the ornithodorus moubata were not unlike those of argas persicus, but the inert character of the larva of ornithodorus moubata was unique among the ixodinæ, in that it passes the whole of its life within the egg. The female ornithodorus moubata laid eggs which were hatched not as larvæ but as nymphæ, although on the ninth day the larva was fully formed and the egg shell split but the young tick remained until the fifteenth day when as a nymph it escaped simultaneously from its larva covering and egg shell.

Dr. **L. W. Sambon** (London) said that if the spirillar disease was carried by the ornithodorus moubata in Africa then probably the disease miana in Persia carried by argas persicus was also a spirillar disease—possibly identical with relapsing fever. The question was whether the relapsing fever in India was also carried by a tick. Recent facts prove the correctness of the statement that bugs were the carriers of relapsing fevers in southern Russia and other parts of Europe. Dr. Sambon referred also to the extraordinary changes which take place in the stomach of the tick after feeding on blood: the cells take up part of the blood and empty it directly into the body cavity.

The **President** of the section referred to Christie's observations in Uganda that the tick carried the filaria perstans.

several of so-called reflex amaurosis of dental origin. In one case recently blepharospasm was associated with septic infiltration and chronic periostitis of a lower wisdom tooth. Pressure on the tooth stopped the spasm. Several other cases of orbicular spasm were recorded. Finally, Sir W. J. Collins, in searching the records of the Ophthalmological Society, found no record of glaucoma, reflex amaurosis, phlyctenular ophthalmia, opthalmoplegia, or failure of accommodation attributed with any assurance or proof to dental lesions.

Mr. P. SIDNEY SPOKES (London) thought that the three papers of Dr. Guthrie, Dr. Cautley, and Dr. Hutchison were a valuable contribution to the question of dental origin of some diseases occurring in children, but the last paper appealed to him the most, inasmuch as Dr. Hutchison admitted that painful dentition might be one cause of infantile disturbance and that at any rate some such condition as eczema might be exaggerated during the period of teething. That reflex irritation of dental origin might be caused by dentition was proved by the occurrence of cough regularly present in some cases during the eruption of successive teeth. Mr. Spokes had seen cases in which there was no stomatitis and no oral inflammation with the exception of a small area over the erupting tooth, and in several of these cases incision of the gum was followed by a cessation of the associated convulsions. There was no suspicion of rachitis or intestinal disease. Mr. Spokes mentioned a case of frontal neuralgia in which the teeth were entirely eliminated as a cause and in which the antrum was opened and found to be normal; the neuralgia entirely disappeared on the discovery and removal of a stone from the bladder by Mr. Rickman J. Godlee.

Mr. H. BALDWIN (London) thought that the previous speakers were inclined to overlook the fact that living irritated rather than dead septic pulps were the cause of dental neuralgia. He mentioned two cases, one in which acute occipital neuralgia at the point of insertion of the trapezius was cured by the treatment of a second upper molar, and the other where mammary neuralgia was associated with a small cavity in a lower second molar.

Dr. E. A. BOGUE (New York) said that he could not adequately discuss the papers contributed to the discussion as that particular line of work had largely passed out of the practice of himself and his *confrères* in New York. One case, however, which came under his own observation was perhaps instructive. A second right lower molar was treated for an exposed pulp and, as the after-history showed, only a portion of the tissue was removed. Pain occurred and was attributed by the patient to the first lower molar. The pulp of this tooth was destroyed. The pain, however, recurred in the antrum, which was opened from the nose, but no diminution of the pain took place. A bicuspid tooth was therefore removed and the antrum explored through the socket with no effect. Subsequently section of the inferior maxillary nerve was performed, together with an incision for the ligature of the external carotid if necessary. Finally, one of the kidneys was removed. At the end of five months the original tooth was removed and the pain ceased.

Mr. FRANK E. HUXLEY (Birmingham) said that the sensitive and painful areas indicated by Dr. Head were valuable as aids to diagnosis but it must be remembered that notable exceptions occurred. He instanced cases of supra-orbital pain associated with a third lower molar; pain in the upper bicuspid region associated with a nasal polypus, the teeth being tender to percussion. Cocaine spray in the nose caused temporary relief of the pain. A third case quoted by Mr. Huxley had all the characters of epileptiform neuralgia associated with increased salivation and lacrymation. There was no dental cause discoverable. A change of residence to another part of the country was followed by diminution in the severity and, finally, entire cessation of the attack.

Mr. J. LEWIN PAYNE (London) described a case of Pure Reflex Pain in a lower second molar which was entirely relieved by treatment of the upper third molar on the same side. He had also seen a case where antral suppuration was associated with hyperæsthesia of the scalp. In determining the cause of so many cases of reflex pain being associated with dental lesions the probable explanation was to be found in the delicate nature of the tooth pulps, their confined position, and their irregular reparative efforts when undergoing chronic inflammation.

Mr. H. A. T. FAIRBANK (London) said that very few of the cases described in the discussion came under observation at he surgical out-patients' department of a children's hospital. Dentition had practically no direct effect upon the ears and he was unable to call to mind a single case in which dental irritation was the cause of pain about the ears. Convulsions were probably intestinal toxæmic manifestations and although stomatitis was common among out patients at children's hospitals yet convulsions, except of a very severe type and associated with much septic absorption, did not occur. Infantile scurvy was also a cause of soreness of the gums. Two cases of pain in the mastoid region in two girls of about seven years of age had been seen by the speaker which were essentially of dental origin and due to carious temporary teeth.

Mr. A. S. UNDERWOOD (London) cited two cases of peripheral neuralgia of dental origin and a case of alopecia associated with marked oral sepsis. He would like to ask Mr. Mummery if there was any chance of direct influence of the dental cause upon the alopecia.

Mr. J. F. RYMER (Brighton) thought the electric currents set up in the mouth by various metals should not be lost sight of in elementary causes of neuralgia.

Mr. K. W. GOADBY (London) called attention to the presence of minute and even microscopic defects or cavities in the enamel of teeth, which were found to be connected firstly with infection of the dentine and secondly with direct pulp infection by capillarity along the dentinal tubes. He cited a case in which rheumatoid arthritis of the temporo-maxillary joint produced reflex pain in the ear and first upper molar tooth.

Mr. J. G. TURNER (London) said the utility of Head's areas could hardly be sufficiently insisted upon and the suggestions of Sir Victor Horsley that organic diseases could be differentiated from functional was of the utmost importance in the diagnosis of trigeminal neuralgia from cases of dental origin, while the ascending neuritis by exostosis and sclerosis of the bone involving the terminal filaments of the fifth nerve was worthy of much attention. Mr. Turner then considered the neurasthenic type of neuralgia which was at times associated with the dental neuralgia and detailed a case where the cause was directly referable to the involvement of the nerve endings in the spicules of bone left after difficult extraction. In some neurasthenic cases suggestion appeared to be of some value and he had removed a tooth from a neurasthenic patient, without an anæsthetic and with no pain, by suggestion. Mr. Turner cited other causes of reflex neuralgia and further discussed the relationship of Head's areas to the individual teeth.

Dr. J. O. BROOKHOUSE (Nottingham) detailed a case of neuralgia of the fifth nerve in which the pain was limited to the angle of the mouth. There was no hypersecretion. Operation upon, and section of, the infraorbital branch was performed but the pain recurred. The inferior dental nerve was stretched but in 18 months the pain recurred. In the speaker's own practice for over 40 years great attention had been always given to the hygiene of the mouth and not a few cases of pain of dental origin referred to other organs had been seen. Rheumatism, or something almost indistinguishable from rheumatism, was frequently associated with oral sepsis.

Mr. W. ARMSTON VICE (Leicester), who described a case of neuralgia of obscure dental origin, and Mr. J. S. SLOAN (Leicester) also joined in the discussion.

The PRESIDENT of the Section thanked the various contributors for their assistance in an extremely important and interesting discussion and invited Mr Mummery as one of the openers to reply.

Mr. MUMMERY briefly replied.

Mr. GOADBY read a paper on

The Method of Vaccine Treatment in Chronic Alveolar Osteitis.

The affections known as Rigg's disease, he said, were of several varieties. Among these one class of case, although not showing signs of acute infection or toxæmia, had many general symptoms referable to the mouth lesions. The blood examination in such cases showed a distinct though slight anæmia, which anæmia did not clear up under the usual general treatment adopted. There was often an acneform eruption on the cheeks and also of the nose. In the alveolar sockets and pus of the cases he had found staphylococci which, however, showed some differences from the ordinary staphylococcus aureus. He had tested the opsonic reaction of the patients and found it below normal for the staphylococcus obtained from the mouth. Vaccines were therefore prepared and the cases were inoculated. A marked improvement in the opsonic index was observed in when it is desired to rouse the fire into activity. The Bostel patent hydraulic drain jointer and cleaner was also exhibited. This is an ingenious apparatus designed for the repairing of sewers or drains without "grubbing up" the pipes or the soil in which they are laid. A cylinder of freshly made cement passes along the pipe under pressure and cement escapes into any opening or defect which it effectually seals. Messrs. Young (72, Mark-lane, London, E.C.), showed their patent hygienic bins made of galvanised steel without internal corners or crevices, so that no lodgment or retention of the contents can take place when the bin is in use or emptied. Messrs. J. Defries and Sons, Limited (146 and 147, Houndsditch, London, E.C.), showed a model of the Equifex steam disinfector besides various types of Pasteur filters and disinfectant compounds, including cyllin, formaldehyde, and paraform tablets. The Jeyes' Sanitary Compounds Company, Limited (64, Cannon-street, London, E.C.), also exhibited a number of preparations of "cyllin," a disinfectant fluid which is said combines the maximum of efficiency as a bactericide with the minimum of causticity and toxicity to the higher forms of life. Messrs. Newton, Chambers and Co., Limited (Thorncliffe, near Sheffield), exhibited izal and its preparations. Izal itself is a powerful germicide though non corrosive and non-poisonous. Compared with previous years it will thus be seen from this notice that the exhibits of the sanitary section were by no means very diverse in character.

ASYLUM REPORTS.

Inverness District Asylum (*Report for the Year ending May, 1904*).—The report of the medical superintendent of this asylum, Dr. R. B. Campbell, states that 178 patients were admitted during the year, which is a large number for an asylum of this size. The average for the past ten years is 160. Of the 178 patients admitted 140 were first admissions. The discharges amounted to 108, of whom 78 had recovered. The deaths numbered 41, giving a death-rate of 6·4 per cent. on the average number resident, as compared with 9·7 per cent. in the Royal and district asylums of Scotland for 1903. Pulmonary tuberculosis accounted for 29·2 per cent. of the deaths—a high proportion. The average number resident during the year was 637. The recovery-rate, calculated on the admissions, was 43 8 per cent.—a high rate decidedly and comparing well with the 39 per cent. of the Royal and district asylums of Scotland. The number of readmissions has been large during the past few years, which is ascribed to the discharge of quiet and manageable patients; in many cases these break down outside asylum care. Nevertheless, it is stated that the system of boarding out harmless cases in private dwellings proves successful in the majority of cases. During the past four years no fewer than 160 patients have been discharged unrecovered and sent to their friends or boarded out with great relief to the institution. Homes are easily found, it is stated, for industrious patients but not for idle ones. No less than 13 of the admissions were over 70 years of age. 80 of the 178 were regarded as curable. Heredity of insanity was traced in 52 of the admissions; alcoholic excess in 19. During the spring there was "an epidemic of rheumatism, evidently of an influenzal nature"; the type was mild; both inmates and staff were attacked. One fatal accident occurred, a patient breaking away from his attendant whilst on his way to the bath and thrusting his head into the hot water running from the tap of the latter, which resulted in severe scalding and death from shock. The District Board of Lunacy, recognising the value of agricultural labour as a curative agent in the treatment of certain phases of mental disorder, has purchased a further 200 acres of land. The benefits anticipated from such labour and from a plentiful supply of home milk (the allowance of breakfast milk has been doubled) as distinct from contract milk are likely to be realised. From the two reports of the Commissioners in Lunacy the asylum is evidently fulfilling its purpose with efficiency. From the list of the asylum officials it appears that there is only one assistant medical officer, which is a small allowance for an institution of this size.

Looking Back.

FROM

THE LANCET, *SATURDAY*, August 4, 1827.

SMALL POX.

To the Editor of THE LANCET.

SIR,—My attention has been excited to a leading article[1] in your Journal, No. 202, for the last month, headed, "Iniquity of inoculating for the small pox," and although I am perfectly prepared to subscribe, in the full extent, to the correctness and propriety of the observations you have made in exposing and denouncing a practice that cannot be defended upon the principles of justice, of morals, or of humanity, yet I cannot forbear expressing my surprise that you, who upon almost every other occasion appear to be possessed of the eyes of Argus, should have found it necessary to travel into one of our Western Counties to show up the character of one who openly manifests his disregard and contempt of public opinion, in opposition to nine-tenths of the more enlightened and disinterested members of his profession. I say, Sir, I am rather surprised that you should have so done, because I regret to say there are some practitioners, in the environs of this great metropolis, who are daily doing, *under coverture*, what this person has the greater manliness and honesty to do *openly*, and probably under the persuasion that he is acting right; whilst the individuals to whom I now allude profess to be the *disinterested friends of vaccination*, and yet are formed of such accommodating materials that they will consent to scatter the poison of small pox, by *inoculation*, at the invitation of the most illiterate and prejudiced members of the community. This, Sir, is no overcharged statement, the truth of which can be substantiated by irrefragable testimony. Nearly twenty years ago, I made a proposition to two of the most influential practitioners in my own neighbourhood, to enter into a covenant with each other to decline small pox inoculation altogether, but I am sorry to say with no success; and notwithstanding I expostulated, and argued upon the imperative propriety of the measure, in reference to the interests of science, of the public health, and morals, all my efforts were vain. The practice was then, and still is, defended upon one ground, *self interest*, and I was silenced with the *dignified* and *disinterested* reply, Mr. ——, though he approves of cow pox, inoculates for the small pox, and if I do not I shall *lose* my patient! This temporising and disgraceful policy continues still to be pursued by the parties to whom I have alluded, and, to my shame I confess, I have, in some instances, been compelled to follow the influence of bad example, rather than suffer my prejudiced and obstinate applicant to pass over to my competitors.

It is to be lamented that there has been, perhaps in every man's practice, a few cases of *variolous disease* subsequent to vaccination; those which have fallen under my own observation have been of the modified kind, distinct and mild in their character, and accompanied with slight constitutional disorder. It is to be deprecated that so much popular hostility should still exist against the adoption of this great national antidote to one of the most loathsome and destructive contagious diseases that ever desolated the world. But the longer I reflect upon the subject the more I am convinced that nothing short of a legislative enactment will ever render its introduction universal in our native island. Hoping that your able and unwearied exertions will hasten the consummation of so desirable an object,

I remain Sir,
Yours, very respectfully,
VERITAS.

London, July 26, 1827.

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[1] See "Looking Back" in THE LANCET, July 15th, 1905, p. 176.

WEST CORNWALL INFIRMARY.—The Local Government Board has sanctioned the contribution of £100 by the Penzance board of guardians towards the new West Cornwall Infirmary at Penzance.

Major R. Ross (Liverpool) mentioned the presence of a small tick which attacked Europeans in India.

Dr. J. C. GRAHAM (London) stated that he had seen a small green tick which attacked man in Sumatra.

Dr. A. J. CHALMERS (Colombo) referred also to a virulent tick in Ceylon.

Mr. JAMES CANTLIE (London) described the case of an officer engaged in the Thibet campaign who was suffering from a form of sore ascribed to the bite of a tick.

Fleet-Surgeon P. W. BASSETT-SMITH, R.N., contributed a paper on

Bruhl's Disease, with Special Reference to the Blood Changes found, and Connexion with the Leishman-Donovan Bodies.

Acting upon a suggestion made by Dr. J. C. Low, of the London School of Tropical Medicine, he examined the blood of two patients at Haslar suffering from splenic anæmia or Bruhl's disease as to the presence of the Leishman-Donovan body. In neither case did he find the parasite and concluded that this class of cases came under the category of primitive splenomegaly in contra-distinction to the true tropical splenomegaly in which the Leishman-Donovan bodies played so important a rôle

Sir PATRICK MANSON (London) communicated

Notes on Two Cases of Febrile Tropical Splenomegaly (kala-azar) and a Suggestion.

The cases were typical cases of kala-azar in which Leishman-Donovan bodies were demonstrated. The life-history of the Leishman-Donovan body had not yet been satisfactorily worked out. The question of the identity of the Leishman-Donovan body and that found in oriental sore was an interesting one. In tropical splenomegaly the Leishman-Donovan body was found in the spleen, liver, bone marrow, glands, intestinal ulcers, and elsewhere but in oriental sore it occurred only in the sore; the former was accompanied by marked constitutional disturbance but the latter by apparently local changes only. Oriental sore was a disease of countries in which the camel was a prominent domestic animal and some held that the disease was conveyed by the camel. In this way oriental sore might bear the same relation to kala-azar that vaccinia did to small-pox; the virulence of the kala-azar germ (seeing that the germs in kala-azar and oriental sore were identical) might be got rid of whilst passing through the camel as the small-pox germ was deprived of its virulence by passage through the cow. Did these suggestions prove to be correct a means of preventing kala-azar would seem ready to hand.

Major Ross stated that mule drivers as well as camel drivers were liable to oriental sore.

Dr. W. M. GRAHAM (Sierra Leone) contributed a paper on

The Guinea-worm and its Hosts.

Dr. Graham's observations were made on the Gold Coast where he was struck by the importance of Guinea-worm disease and the number of native troops yearly incapacitated by it. He found that the infection of man by the worm took place during a few months of the year and that it did not occur during the other months. In Salaga the month of greatest incidence was May, but in Gambia it was June; this would appear to show periodicity. The fact that the cyclops (the presumed intermediate host) showed its maximum manifestation during the period corresponding to the maximum infection in man also contributed towards the belief in periodicity.

In the discussion upon Dr. Graham's paper on Guinea-worm the following took part: Dr. W. C. BROWN (Penang), Dr. CHALMERS, Dr. F. M. SANDWITH (London), Dr. SAMBON, Dr. W. T. PROUT (Gold Coast), Mr. J. T. CLARKE (Perak), Dr. C. F. HARFORD (London), Mr. NEWSTEAD, and Dr. CLAUS SCHILLING (Berlin).

THE ANNUAL EXHIBITION.

III.—FOODS AND FOOD PRODUCTS.

THE exhibits coming under this division were not a strong feature of the exhibition this year and they included many well-known preparations which have been shown on previous occasions. Mention may be made of the specialities of Bovril, Limited (152–166, Old-street, City-road, London, E.C.), including virol which has now had the trial of experience with excellent results, rations, and essence of beef; the milk preparations of the Aylesbury Dairy Company, Limited (St. Petersburg-place, Bayswater, London, W.), comprising humanised milk, a concentrated preparation which on dilution gives a fluid of the composite of human milk, pollyta, a solid milk food, and humanised sterilised milk; Horlick's malted milk (Horlick's Malted Food Company, 34, Farringdon-road, London, E.C.); shredded wheat (The Shredded Wheat Company, 6 and 8, Eastcheap, London, E.C.), containing the entire constituents of the wheat berry steamed, cleaned, and shredded; a series of digestive ferments and meat foods by Armour and Co., Limited, of 46A, Holborn Viaduct, London, E.C., including pepsin, pancreatin, bone marrow, and the active principle of adrenal substance; Mellin's dietetic preparations (Mellin's Food Works, Peckham, S.E.), comprising food biscuits, infants' food, and "lacto," prepared from the infants' food and fresh cow's milk (the exhibit included a specially designed feeding bottle); milk foods by Henri Nestlé (48, Cannon-street, London, E.C.), including full-cream condensed milk, milo food, and chocolate; starchless foods by Messrs. Callard and Co. (74, Regent-street, London, W.), including bread, biscuits, cakes, as well as sugarless marmalade, jam, jellies, and beverages; albene, a pure, refined vegetable fat, a substitute for cooking purposes for butter, by Messrs. Broomfield and Co. (83, Upper Thames-street, London, E.C.); a fluid malt extract by M. Hoff (29, New Bridge-street, London, E.C.) (the exhibit included also ironol, an organic iron compound said to be easily assimilated); gluten bread, biscuits, and flour by Messrs. G. Van Abbott and Sons (Baden-place, Crosby-row, Borough, London, S.E.), and almond bread, &c.; an excellent series of digestive and other products by Messrs. Fairchild Brothers and Foster (Snow-hill Buildings, London, E.C.), including peptogenic milk powder, panopepton, lecithin, pepsin, and zymine or pancreatic extract, and zymine peptonising tubes for peptonising milk; patent barley and groats by Messrs. Kent, Robinson and Co., Limited (Denmark-street, St. George's-in-the-East, London, E.); diabetic foods of the Manhu Food Company (23, Mount Pleasant, London, W.C.), of which it is stated that the carbohydrates are changed and made so easily digestible as not to aggravate the symptoms of the disease; specialities for invalids, comprising essences of beef, mutton, veal and chicken, and jellies by Messrs. Brand and Co., Limited (11, Little Stanhope-street, Mayfair, London, W.); diabetic foods, bread, and biscuits, and invalids' and infants' foods by the Cheltine Foods and Chocolate Co., Limited (Cheltine Works, Cheltenham); and maltine plain and with pepsine and pancreatine, with hypophosphites, iron, or cod-liver oil, by the Maltine Manufacturing Company, Limited (24 and 25, Hart-street, Bloomsbury, London, W.C.) (the exhibit included the liquid peptonoids and beef peptonoids of Messrs. Carnrick and Co. of the same address as the Maltine Company.

Less well-known than the foregoing owing to their comparatively recent introduction was the pioneer milk sugar of the Pioneer Milk Sugar Company (24, Minories, London, E.C.). As our analysis has shown this preparation is practically pure milk sugar and therefore is suitable for use in the preparation of humanised milk; "Veda" bread and oat foods of the "Veda" Food Company (34, North Bridge, Edinburgh), which are produced by a new method of treating wheat and oats so that the carbohydrates are largely reduced to a soluble condition—the bread is excellent and, judging from it analysis, should be considerably more nutritious than ordinary bread; Moseleys food, prepared from wheat an dextrinised and containing therefore a large percentage o soluble carbohydrates besides proteid (Foods, Limited Stockport); and wheat-meal brown bread by Messrs. J Reynolds and Co., Limited (the Albert Flour Mills Gloucester), said to be made from selected wheat, and i certainly has an excellent flavour, which is one indication a any rate that such is the case.

IV.—SANITARY APPLIANCES.

This section was not very representative, the exhibits consisting chiefly of disinfectant preparations and disinfecting appliances. An exception appeared in the case of the exhibit of Messrs. D. T. Bostel and Sons (71 and 73, Ebury-street, London, S.W.). This firm showed the Bostel patent natural seat and water-closet which was recently noticed in THE LANCET. The closet and seat aim at securing the natural squatting position during defæcation and the model exhibited met with the approval of many of the visitors. Besides was shown the "Bostel fire," which is correctly described as an appliance for heating the room and not the chimney. The grate lifts up so that a draught of air is compelled to go through the bottom and the bars of the grate chloroform having been taken through the mouth. The exact means employed by DEVEREUX to administer the poison was not proved. Probably it was introduced into the milk consumed at tea-time if we can accept his statement that he went out after tea and returned to find his wife and children dead at about 8.30 P.M. As regards DEVEREUX'S criminal responsibility there can be no shadow of doubt. He is a cold, cruel, calculating murderer. His intellectual capacity is of no mean order. He did not even instance the "method of madness." The main features of his mental character are cunning, designing and remorseless villainy. The most that may be said in his favour is that he is a moral degenerate.

The Educative Factor in Hospital Life.

A PERFUNCTORY knowledge of the recruiting grounds from which the majority of hospital patients are drawn is sufficient to place the hospital in the front ranks of philanthropic endeavour and it is long since this view has been recognised. The great company of hand-to-mouth workers, the still larger army of regular hands with big families dependent upon their efforts, and above them the stratum of small tradesmen who can afford no higher fee than that which will tide them over the minor ills of life are all to be numbered among the natural inmates of every hospital. The physical benefits conferred upon these classes by the presence of these institutions are so obvious that such agencies as sermons, pamphlets, and bazaars have now become rather reminders than instructors of the public conscience. The hospital is the outpost of our national defence against degeneracy and the boon which is conferred by hospital ministrations upon every modern community is practically immeasurable if hospitals be rightly used.

While the supreme mission of every hospital is the alleviation of physical disability it is well to recognise certain secondary benefits. These may be difficult to appraise with any degree of accuracy but they are nevertheless perfectly real both in their existence and their influence, and the extent of that influence can be judged from many instances which come under direct observation. There is excellent evidence to justify the conclusion that as a social and humanising influence the hospital must rank very high and this aspect of its mission should be more considered than it is to-day. It is perhaps given to the lay observer, less engrossed in the physical if not more responsive to the moral and social welfare of the masses, to realise how beneficently the hospital may fulfil ends that are only indirectly comprised in the healing of the sick. To the layman every whit as much as to the physician or the surgeon the hospital should reveal itself as a school of morals no less than as a temple of healing, a dispensary of manners no less than of remedies, and infinitely more effective in these respects than any number of university extension lectures. For a sojourn in the ward of a hospital is in a very large proportion of cases the first real contact, in any true sense of the word, that many of its patients have had with a culture and refinement which they have hitherto regarded with indifference or even resentment. For a few days or weeks they are lifted, whether they will or not, into an atmosphere to which they have heretofore been aliens and regard themselves, their fellow sufferers, and the day's routine from a point of view that is wholly foreign to their experience. Too ill very often to be at first more than passively conscious of the change, with convalescence and returning strength their minds become tuned to this novel and more cultured environment. Their meals are served according to the principles of simple refinement: not according to the impossible dictates of luxury but after a fashion that might perfectly well be copied in their own little *ménages* at home. They see about them not an ostentatious pride in tidiness and cleanliness but a tacit admission of the necessity of these qualities and the sense of inferiority that accompanies their absence. Here the prized domestic virtues are no fruits of a weekly or yearly effort, but their exhibition forms the undisputed condition of every day and shows the patient that the primary elements of decency and comfort are within the reach of all. When once all this is perceived by the patient there comes a sense of the responsibility of each member of this little society towards the whole, a sense of personal obligation to conform to the general standard. And while this may at first be an effort, yet the satisfactory result is too obvious to escape even the bluntest perception. As a consequence of this it is not hard to see how in a very little while the whole hospital *régime*, which at first may have seemed so strange, will gradually resolve itself before the patient's eyes into a series of perfectly practicable details that with a very little trouble might be practised elsewhere. Again, the prevailing spirit of courtesy and self-restraint, of *bonhomie* under admittedly disagreeable conditions, and above all of an altruism that is not merely sentimental but perfectly healthy and largely unconscious, cannot fail to have a profound moral effect. That a few weeks of hospital life can overcome the crusted habits of years is, of course, too much to expect and experience proves the contrary. But that it may go further to undermine prejudice than many years of extraneous social endeavour is beyond doubt.

In the case of children especially the educative aspect of hospital life is very evident and many curious instances of a double code of morals, manners, and conversation existing side by side in the same child's mind may be observed in any large hospital. The more desirable one may not prevail—this, alas, is too often the case—but its presence, however fleeting, will not have been entirely wasted. The conditions of hospital life are largely artificial but at the same time it is not too optimistic to believe that some of them are applicable to many of the homes to which the patients return. And while the contrast must necessarily be extreme between the well-ordered routine of a large institution, with its rules and regulations and enlightened organisation, and the haphazard everyday domestic life of the patients, yet it is impossible to suppose that some relic of its message does not remain influential. Admitting this, it is only necessary to ponder for a little upon the vast society that a large hospital touches in order to realise the magnitude of its educative influence. Where in-patients are numbered by

THE LANCET.

LONDON: SATURDAY, AUGUST 5, 1905.

Rex v. Devereux.

Nearly six months after committing one of the most revolting murders in the annals of crime, Arthur Devereux was convicted and sentenced to death at the Central Criminal Court on July 29th. In this case Nemesis was slow but sure and relentless. On Jan. 31st the victims of the tragedy—mother and twin children—met their fate. On April 13th their bodies were discovered in a tin trunk stored away in a warehouse at Kensal Rise. Shortly after the latter date Devereux was arrested at Coventry and charged with the capital offence, but it was not until more than three months had elapsed that he took his stand in the dock at the Old Bailey to answer the indictment against him. On two occasions the trial was postponed at the instance of counsel for the prisoner on the ground that important evidence was being sought in his interest. How valueless was that testimony is now matter of history, for all the witness could allege was that some six years ago Mrs. Devereux stated that rather than lead a life of immorality she would kill herself. Considering some of the circumstances of the interview this could not possibly be distorted into a threat of suicide by a dutiful child and chaste wife as Mrs. Devereux was. The other threads, equally flimsy, upon which it was sought to hang the theory of self-murder were: firstly, that 30 years ago Mrs. Devereux's mother suffered "mental disturbance"—probably the delirium of fever—after a premature confinement; and secondly, that her brother mysteriously disappeared two years since. His clothes were found on the shore at Plymouth Hoe but his body was never discovered. That he passed into oblivion is certain; that he destroyed his life is conjectural. No doubt Mrs. Devereux's married life was full of trouble and miseries but she was sustained by the love of a devoted mother and by the ties of motherhood

It was not suggested by the defence that if a murder had been committed another hand than the accused's had executed it. In reply to the usual plea—absence of motive—Mr. Matthews for the Crown said "there never was an adequate motive in any case of murder, and from the point of view of right-minded people there never could be one." We will recite a few of the facts that pointed so strongly to Devereux's guilt: 1. On Dec. 31st, 1904, he took a flat at Milton-avenue and requested the agent not to let the lower flat. The result of this was that he and his family had sole possession of the house. 2. On Jan. 28th he was making preparations for his boy Stanley to go to a school. This was the last date upon which Mrs. Gregory saw her daughter whom she had been accustomed to visit daily. Devereux, whose animosity against his wife's mother was avowedly marked, knew that she was going to the country for some weeks. 3. To more than one individual he had spoken of the twin children as a burden to him. 4. On Jan. 13th, 1905, he sent a telegram in reply to an advertisement for an assistant druggist in these terms: "Would widower, aged 34, do? qualified; one child, six.—Devereux, 209, Shirland-road, N.W." On that date he was married and had three children. To counsel's question "And by March 22nd you were a widower with one surviving child, aged six?" he answered Yes. 5. After the death of his wife and twin children he sold their clothes, left London to live in the country, and placed his boy, aged six years, in a boarding school. In what way did Devereux meet this damning testimony? He said the reason why he did not call in someone when he found his wife and children dead was: "I was frightened because I remembered the argument I had with my wife and because of the ill-feeling which my mother-in-law always bore me." Some circumstances associated with the "Trunk Tragedy" stand out in bold relief and signalise the event as one of the most remarkable of its kind ever chronicled. The fiendish callousness and measured way in which Devereux by his own confession and testimony proceeded with his ghoulish task to place the bodies of his wife and children in the trunk and to secure them from detection by prolonged labours aided by the scientific knowledge which he possessed surpass all ordinary human understanding. The memory of the Crossman case, he said, suggested the means of disposal of the remains but he determined not to bungle his work as Crossman did Having failed to effect his purpose by using zinc sheeting and soldering he covered the bodies with cloths and coated the latter with glue mixed with boric acid. Over all he placed a cover made of pieces of wood firmly fixed by screws and this again he coated with glue. In order to prevent any possible escape of effluvia he filled the keyhole of the lock with sealing wax. This hideous occupation extended over five or six days.

Counsel for the defence avowed that they were not prepared to argue that Devereux was insane at the time of the tragedy nor that he was unfit to plead at the trial but they endeavoured to prove that from hereditary taint he might be expected to act in the extraordinary manner he did when, as he alleged, he found his wife and children dead. Except in a case of such extreme gravity the evidence tendered to the above end would not have been allowed by the Court, for technically it was inadmissible as germane to the issue. Although Mr. Justice Ridley indulgently yielded to counsel's appeal he nullified the effect in his summing up by asking the jury to dismiss the evidence as worthless since it was inapplicable. Briefly we may note that owing to the methods used by Devereux it was possible to identify the features of the deceased ten weeks after death. Sir Thomas Stevenson succeeded in detecting, isolating, and weighing the morphine found in Mrs. Devereux's body, recalling the Hickman case. It was calculated that at the time of death there were four grains in her system and that the liver contained *nearly four times* as much as the stomach, showing the extent to which absorption had occurred. There was no indication of used to carry away the dejecta of the consumer. And matters are not likely to grow better, for the population is increasing, which means that while more water will be wanted the output of sewage will be greatly increased. The introduction of bacteriological processes for the disposal and complete destruction of sewage, it is true, promised results compatible with hygienic requirements; but, remarkably efficient in breaking down putrescible matters as the bacterial agencies appear to be, we have it on the greatest authority that there is no decisive evidence that these agencies will destroy pathogenic entities. It is admitted that London water drinkers are at the mercy of the filter-beds. If these should fail the chances of the outbreak of disease are great and a water-borne disease in London would be too terrible to contemplate, threatening the lives not of thousands but of millions. The evidence, however, that the water-supply of London has been accountable for disease is not convincing and we are not aware that any difference has been shown to exist as regards the prevalence of disease between those who drink water derived from the Thames and those who drink, say, the deep well waters of the Kent division supply. It may be that some day it will be possible to draw a sharp line of demarcation between the two sets of water drinkers by the fact of water-borne disease breaking out in one or the other, but it is devoutly to be hoped not. At all events there can be little doubt that the abandonment of a supply derived from a river which is admittedly used for the carriage of sewage in favour of the adoption of a supply from the pure and abundant watershed of Wales would inspire a feeling of considerable confidence amongst London water drinkers and would confer indisputable advantages also in many other directions. It should not be forgotten, moreover, that the acquirement of a fresh source of water-supply for the metropolis would mean not only a purer water for drinking purposes but a supplementary supply for ultimate discharge into the river which would augment the volume flowing to the sea and necessarily tend to keep it in a less contaminated condition. The subject has been approached recently by Dr. W. Scott Tebb, the public analyst of the metropolitan borough of Southwark, who, in a paper that has reached us, concludes:—

> 1. That five out of the seven commissions or committees of inquiry which have investigated the quality of the Thames water have condemned the river as a source of domestic supply to the metropolis.
> 2. That the quality of the water as indicated by the analyses has shown no substantial improvement during the last 30 years.
> 3. That the river and its tributaries are at the present time extensively polluted by sewage, sewage effluents, foul house refuse, and other obnoxious matters.
> 4. That it is doubtful if this excessive pollution can ever be prevented, especially in times of flood, from gaining access to the river.
> 5. That there is no reason to suppose that the poison of cholera or typhoid can be eliminated from drinking-water by any practicable process of purification such as filtration.

Serious as are these conclusions they are made all the more serious by the contemplation that the water areas of England and Wales are likely to be acquired by local provincial towns and that therefore year by year the prospect of gaining a new and adequate source of water-supply for London becomes less certain.

HOLIDAYS AND THE INFLUENCE OF SEASON.

WHEN the question of holidays is being discussed and where to spend them concern is commonly expressed as to whether the prospective place is bracing or relaxing. Other questions, as, for example, water-supply, drainage, and so forth, are apparently regarded as minor points compared with climatological considerations. It will be found as a rule that it is seldom that a consensus of opinion is gained as to what really is the climatological characteristic of a given place. Some will say that X—— is bracing and others that it is relaxing. One man goes to the west of England because he finds it bracing and another avoids it because he is sure it is relaxing and not the place for a "run-down" constitution; "the east coast is the only place for him." The fact is that the question of whether a place is relaxing or bracing depends largely upon the meteorological conditions which exist at the time when the holiday is taken. There are certain meteorological conditions which are more or less constant, as, for example, those arising from the nature of the subsoil, the trend of the country, or the level of the place. Such conditions, it may be presumed, exert a practically unchanging influence on the health, although these conditions may be profoundly modified by excessive rainfall or by the prevalence of wind. Rainfall is a fairly constant quantity in different health resorts; thus on the east coast it is relatively dry and on the west relatively wet. But we cannot reckon upon the wind in a similar way, for it is an ever variable factor: it may blow "great guns," it may hardly be present at all, and it may set in from any point of the compass. The direction of the wind has probably the greatest disturbing influence on the regular climate of a place and this accounts for the differences of opinion that are often expressed as to whether a health resort is bracing or relaxing. The fact is that it may be both. A warm westerly wind may easily prove relaxing even on the proverbially bracing east coast and conversely a stiff easterly or northerly wind on the west coast will soon wipe away any reproach as to its soft or relaxing character. When the force of the wind is tempered by a local barrier, such as mountains, its exhilarating character is, of course, diminished. The question, therefore, whether a health station is bracing or relaxing is largely decided by the direction and the prevalence of the wind, the climatological conditions varying as the wind blows from south, east, north, or west. It is chiefly when wind is absent altogether that local conditions exert their influence. The man who seeks invigoration and health will do well to avoid those places in which there is a tendency of the air to stagnate. He should be in a constant stream of pure air. Hippocrates in his 24 aphorisms gives evidence of his knowledge of the influence of season and amongst other things attributes to the various winds the following qualities. The south wind, he says, dulls the sense of hearing and sight, and causes headache, heaviness, and faintness; the north wind affects the chest and the throat, and causes constipation and dysuria. The south wind relaxes and the north wind contracts the tissues of the body. Again, "continued northerly winds brace and strengthen the body, make it agile, fresh-coloured, and quick of hearing. This wind restrains the bowels, increases pains in the chest, and offends the eyes. Southerly winds relax and moisten the body, dull the senses of hearing and sight, and cause heaviness, vertigo, laziness, and diarrhœa." To the question, then: Is a place relaxing or bracing? the logical answer would appear to be: It depends largely upon the direction and the prevalence of the wind, for the local influences of level, subsoil, and topographical surroundings may be much affected by this factor.

FAMILY DEGENERATION OF THE CORNEA.

IN the *Ophthalmoscope* for May Mr. Robert W. Doyne and Mr. Sydney Stephenson have described a remarkable series of cases of degeneration of the cornea which occurred in one family. The first patient was a boy, aged 12 years, who said that his eyes had been subject to periodical attacks of inflammation for about 12 months. The right cornea was more or less nebulous with curious-looking calcareous streaks and particles at the junction of the lower and middle third. The appearances suggested a transverse *calcareous film* at an early stage of development. There was a very faint more or less generalised opacity of the left cornea. But annual thousands and out-patients by tens of thousands it is almost impossible to appreciate sufficiently the sum of its social work. A fuller conception of this side of hospital life should inevitably increase the sense of personal responsibility that rests upon all hospital workers—medical staff, students, and nurses.

The Social Instinct.

IN nearly every association which aims, directly or indirectly, at the improvement of its members, the social instinct is one which cannot be ignored. Associations may be formed for numerous purposes and they may have annual gatherings for the discussion of questions relating to the advancement of science or for the better regulation of matters concerning the ethical relations of their members but they succeed or they fail in direct proportion to the amount of friendly feeling which they encourage. This fact has lately been brought into prominence in the Presidential Address at the fifty-sixth annual session of the American Medical Association. The president, Dr. LEWIS S. MCMURTRY, discussed the origin, progress, and purpose of the Association and after reference to the annual gathering for the advancement of medical science and the elevation of the medical profession he spoke of the desire for improvement, for the increase of scientific resources and for the diffusion of medical knowledge which was evinced by every large gathering. Then came his happy remark upon the "social instinct" of our profession, "which would elevate and be elevated by interchange of views resulting from common experiences and by mingling together in pleasant friendly intercourse." The American Medical Association evidently labours under great disadvantages from the enormous area of the scope of its operations and it has struggled through the well-known difficulties of organisation as "a representative body composed of delegates from affiliated societies, colleges, and hospitals throughout the States." That the Association has grown and prospered during the half-century of its existence is shown by the proud statement that it is now the "largest medical organisation in the world." "It owns valuable property, has accumulated a considerable fund, and has a large annual income, all of which belongs to, and is subject to the control of, the members who, through their delegates, select the board of trustees to manage their funds." This is as satisfactory as can be desired but still the influence of the social instinct cannot be overlooked since this factor probably underlies many of the first beginnings of coöperation and association. At the annual gatherings matters of high moment may be discussed but at the ordinary meetings of the separate component parts of an association it may be doubted whether much interest is taken in medical politics, or even in the serious contributions to the advancement of medical science, for which outside help is so often desired. Local branches might almost be regarded as the separate constituencies which have the special function of electing delegates or representatives, who in turn have various important medico-political functions to perform. The local branches, however, would not long continue in existence if this remained their sole *raison d'être*. The members comprising local branches are not universally impelled by the ardent desire to advance science, either by their own contributions or by forming a receptive audience for the information to be derived from without. To explain their continued vitality we have to look for another mainspring and this appears to have been supplied by the reference to the "social instinct of our profession." There can be no doubt that social gatherings work for the ultimate good of all concerned. In nearly every district the struggle of competition is so great that relationships are liable to be strained and little misunderstandings are of frequent occurrence. It cannot be said that the public is innocent in the matter, since whenever medical topics arise some unfortunate yarn is apt to be told to the detriment of some practitioner and considerable self-restraint is frequently needed to prevent an abrupt challenge of an assertion or a demand for corroborative details. Libellous stories and injurious innuendoes may rankle so long as there are no opportunities for getting at the truth and many lamentable misunderstandings may be developed in the absence of some friendly common ground of meeting. Medical men who have the social instinct will probably discuss their little differences in an amicable fashion if they have the opportunity of meeting without the formality of a call demanding an explanation, and it is probable that by mingling "in pleasant friendly intercourse" not only are the mole-hills prevented from being made into mountains but they are perhaps smoothed away. Good fellowship is an essential in every association and it can be fostered by mutual knowledge.

At the annual meetings of the British Medical Association the social side is by no means the least conspicuous part of the gathering, and our columns this week recount many social meetings at which good fellowship was a prominent feature. This season of the year, when many medical men are taking a holiday, is one which is prone to give rise to difficulties in the matter of the treatment of one man's patient by a neighbouring practitioner. Occasionally it happens that when the holiday-maker returns his brother in the profession forgets to write or to mention that he has been called in as a substitute. If in such circumstances the two practitioners could meet at a dinner or some other social gathering it might be the means of promoting that *entente cordiale* which, desirable in every profession, is especially so amongst medical men.

Annotations.

"Ne quid nimis."

HAS THE TIME COME WHEN THE THAMES SHOULD BE ABANDONED AS A SOURCE OF WATER-SUPPLY?

No one can hold for a moment that the Thames is an ideal source of water-supply but it is a very grave indictment to say that the water at its best is diluted sewage. It is against the highest conceptions of public health that a river which serves as the channel for conveying the sewage of the metropolis away out of sight should be also the source of most of the water supplied to the metropolis for drinking purposes. It is, again, manifestly absurd that although the greatest precautions are taken to purify the water for such purposes yet a very large quantity of this purified water is used to carry away the dejecta of the consumer. And matters are not likely to grow better, for the population is increasing, which means that while more water will be wanted the output of sewage will be greatly increased. The introduction of bacteriological processes for the disposal and complete destruction of sewage, it is true, promised results compatible with hygienic requirements; but, remarkably efficient in breaking down putrescible matters as the bacterial agencies appear to be, we have it on the greatest authority that there is no decisive evidence that these agencies will destroy pathogenic entities. It is admitted that London water drinkers are at the mercy of the filter-beds. If these should fail the chances of the outbreak of disease are great and a water-borne disease in London would be too terrible to contemplate, threatening the lives not of thousands but of millions. The evidence, however, that the water-supply of London has been accountable for disease is not convincing and we are not aware that any difference has been shown to exist as regards the prevalence of disease between those who drink water derived from the Thames and those who drink, say, the deep well waters of the Kent division supply. It may be that some day it will be possible to draw a sharp line of demarcation between the two sets of water drinkers by the fact of water-borne disease breaking out in one or the other, but it is devoutly to be hoped not. At all events there can be little doubt that the abandonment of a supply derived from a river which is admittedly used for the carriage of sewage in favour of the adoption of a supply from the pure and abundant watershed of Wales would inspire a feeling of considerable confidence amongst London water drinkers and would confer indisputable advantages also in many other directions. It should not be forgotten, moreover, that the acquirement of a fresh source of water-supply for the metropolis would mean not only a purer water for drinking purposes but a supplementary supply for ultimate discharge into the river which would augment the volume flowing to the sea and necessarily tend to keep it in a less contaminated condition. The subject has been approached recently by Dr. W. Scott Tebb, the public analyst of the metropolitan borough of Southwark, who, in a paper that has reached us, concludes:—

1. That five out of the seven commissions or committees of inquiry which have investigated the quality of the Thames water have condemned the river as a source of domestic supply to the metropolis.

2. That the quality of the water as indicated by the analyses has shown no substantial improvement during the last 30 years.

3. That the river and its tributaries are at the present time extensively polluted by sewage, sewage effluents, foul house refuse, and other obnoxious matters.

4. That it is doubtful if this excessive pollution can ever be prevented, especially in times of flood, from gaining access to the river.

5. That there is no reason to suppose that the poison of cholera or typhoid can be eliminated from drinking-water by any practicable process of purification such as filtration.

Serious as are these conclusions they are made all the more serious by the contemplation that the water areas of England and Wales are likely to be acquired by local provincial towns and that therefore year by year the prospect of gaining a new and adequate source of water-supply for London becomes less certain.

HOLIDAYS AND THE INFLUENCE OF SEASON.

WHEN the question of holidays is being discussed and where to spend them concern is commonly expressed as to whether the prospective place is bracing or relaxing. Other questions, as, for example, water-supply, drainage, and so forth, are apparently regarded as minor points compared with climatological considerations. It will be found as a rule that it is seldom that a consensus of opinion is gained as to what really is the climatological characteristic of a given place. Some will say that X—— is bracing and others that it is relaxing. One man goes to the west of England because he finds it bracing and another avoids it because he is sure it is relaxing and not the place for a "run-down" constitution; "the east coast is the only place for him." The fact is that the question of whether a place is relaxing or bracing depends largely upon the meteorological conditions which exist at the time when the holiday is taken. There are certain meteorological conditions which are more or less constant, as, for example, those arising from the nature of the subsoil, the trend of the country, or the level of the place. Such conditions, it may be presumed, exert a practically unchanging influence on the health, although these conditions may be profoundly modified by excessive rainfall or by the prevalence of wind. Rainfall is a fairly constant quantity in different health resorts; thus on the east coast it is relatively dry and on the west relatively wet. But we cannot reckon upon the wind in a similar way, for it is an ever variable factor: it may blow "great guns," it may hardly be present at all, and it may set in from any point of the compass. The direction of the wind has probably the greatest disturbing influence on the regular climate of a place and this accounts for the differences of opinion that are often expressed as to whether a health resort is bracing or relaxing. The fact is that it may be both. A warm westerly wind may easily prove relaxing even on the proverbially bracing east coast and conversely a stiff easterly or northerly wind on the west coast will soon wipe away any reproach as to its soft or relaxing character. When the force of the wind is tempered by a local barrier, such as mountains, its exhilarating character is, of course, diminished. The question, therefore, whether a health station is bracing or relaxing is largely decided by the direction and the prevalence of the wind, the climatological conditions varying as the wind blows from south, east, north, or west. It is chiefly when wind is absent altogether that local conditions exert their influence. The man who seeks invigoration and health will do well to avoid those places in which there is a tendency of the air to stagnate. He should be in a constant stream of pure air. Hippocrates in his 24 aphorisms gives evidence of his knowledge of the influence of season and amongst other things attributes to the various winds the following qualities. The south wind, he says, dulls the sense of hearing and sight, and causes headache, heaviness, and faintness; the north wind affects the chest and the throat, and causes constipation and dysuria. The south wind relaxes and the north wind contracts the tissues of the body. Again, "continued northerly winds brace and strengthen the body, make it agile, fresh-coloured, and quick of hearing. This wind restrains the bowels, increases pains in the chest, and offends the eyes. Southerly winds relax and moisten the body, dull the senses of hearing and sight, and cause heaviness, vertigo, laziness, and diarrhœa." To the question, then: Is a place relaxing or bracing? the logical answer would appear to be: It depends largely upon the direction and the prevalence of the wind, for the local influences of level, subsoil, and topographical surroundings may be much affected by this factor.

FAMILY DEGENERATION OF THE CORNEA.

IN the *Ophthalmoscope* for May Mr. Robert W. Doyne and Mr. Sydney Stephenson have described a remarkable series of cases of degeneration of the cornea which occurred in one family. The first patient was a boy, aged 12 years, who said that his eyes had been subject to periodical attacks of inflammation for about 12 months. The right cornea was more or less nebulous with curious-looking calcareous streaks and particles at the junction of the lower and middle third. The appearances suggested a transverse calcareous film at an early stage of development. There was a very faint more or less generalised opacity of the left cornea. But the most striking opacity was a tongue-like process extending across the cornea for three-fourths of its area. The patient's father was a working carpenter, aged 48 years. At the age of 30 he suffered from "ulcers" of the left eye and after 12 months the sight was lost. He denied having had syphilis. The right eye was divergent and the central part of the cornea was covered with dense, whitish-grey, calcareous-looking particles so that the pupil was entirely hidden. The mother of this man suffered from "bad eyes" from youth and in adult life her sight was so poor that she had to be led about. She died at the age of 65 years. The remaining members of this generation included three sisters and one brother, of whom one sister suffered in a similar way. The carpenter had eight children. Of these, four, including the boy whose case was first described, were affected. One, a daughter, aged 24 years, began to suffer at the age of 16 or 17 years. On examination the corneæ were found cloudy but presented no signs of inflammation. But for certain facts the case might have passed for interstitial keratitis. In the right eye the iris could be only dimly seen through the milky cornea. The left cornea was still more opaque and the nebula showed a lattice-like arrangement, especially towards the centre. The second patient was a daughter, aged 22 years, whose eyes began to fail between the ages of 16 and 18 years. The corneæ were so milky that only indications of the underlying parts could be made out. The third patient was a girl, aged 15 years, whose eyes became affected at the age of seven. The sight became progressively worse without any symptoms of inflammation. The condition of the corneæ resembled that of the last patient but was not quite so bad. Thus in this family there occurred in three generations seven cases of bilateral slowly progressing degeneration of the cornea leading after several years to serious loss of sight. As a rule, there were no symptoms of inflammation. When there were they probably were due to erosions of the corneal epithelium which, as the result of the degenerative changes, was specially vulnerable. There was no evidence of syphilis nor were the parents consanguineous in either generation. Family degeneration of the cornea, though rare, is by no means unknown to systematic writers. Haab reported a case of what he called "lattice-like keratitis" in a boy, aged 16 years, whose maternal aunt and uncle were also affected. Dimmer recorded three cases of superficial lattice-like opacity of the cornea in two brothers and a sister, aged respectively 55, 49, and 51 years. Freund of Reichenberg in Bohemia has described seven cases in one family and eight in another which he traced through four generations. In this country Mr. R. Marcus Gunn has reported four cases of "keratitis nodosa" in a family and Mr. W. T. Holmes Spicer "nodular opacities" of the corneæ in a father and daughter. These conditions appeared to be examples of the disease now under consideration.

POST-GRADUATE STUDY AT THE UNIVERSITY OF CAMBRIDGE.

AT the commencement of the present long vacation—namely, in the beginning of July—a course of instruction for senior students, medical men, and veterinary surgeons, lasting for about four weeks, was opened in the medical school of the University of Cambridge. This course included (1) lectures and demonstrations on protozoa and protozoal diseases, by Dr. G. H. F. Nuttall; (2) lectures and demonstrations on pharmacology, by Mr. W. E. Dixon; and (3) lectures and demonstrations on general and special pathology, by Professor G. Sims Woodhead, Dr. H. E. Durham, Dr. W. Malden, and Dr. G. S. Graham-Smith. The protozoal diseases which were treated of included amœbic dysentery, trypanosomiasis, sleeping sickness, kala-azar, coccidiosis, and malaria. The subjects of the pathological lectures and demonstrations comprised phagocytosis, Dr. A. E. Wright's "opsonins," toxins and antitoxins, venins and antivenins; methods of standardisation, the iodophil reaction in blood, illness due to unsound foods, diphtheria, agglutinins and agglutination methods, precipitins, and hæmolysins.

THE SODIUM SALTS OF THE COUMARIC ACIDS AS THERAPEUTIC AGENTS.

THE hypodermic application of sodium cinnamate in aqueous solutions (hetol) or dissolved in glycerine, which was referred to in a paper by Mr. Gilbert T. Morgan, D.Sc., F.I.C., in THE LANCET of July 12th, 1902, p. 66, still continues to receive considerable attention and among the more recent developments of the treatment based on the use of this therapeutic agent may be mentioned the serum obtained by the firm of Kalle and Co. of Biebrich-am-Rhein from tuberculous horses after repeated injections of the cinnamate. In a recent communication Dr. Morgan points out the interest bearing on the connexion between the chemical structure of cinnamic acid and its physiological action owing to the discovery that phenylpropiolic acid in the form of an aqueous solution of its sodium salt (thermiol) also has a marked action in the development of leucocytosis and can likewise be applied to the treatment of tuberculosis. Both these acids contain an unsaturated carbon chain attached to a benzene nucleus, the former acid having a double linking and the latter a treble bond. Since these substances are far more active physiologically than benzoic acid, $C_6H_5.CO_2H$, which does not contain the unsaturated group it may be assumed as a working hypothesis that this action is in some way connected with the presence in the molecule of the double or treble linking, this junction being known to be a point of great chemical reactivity. In the course of a series of clinical investigations carried out by Dr. G. Lovell Drage with the glycerinum sodii cinnamatis a demand arose for a drug having a more pronounced action and Dr. Morgan was thereby led to consider in what way the physiological activity of cinnamic acid might be enhanced. The employment of benzene derivatives as therapeutic agents has amply demonstrated the fact that the presence of an amino- (NH_2) or a hydroxy- (OH) group in the aromatic nucleus greatly increases the physiological action of the parent hydrocarbon and it therefore seemed likely that the use of a substituted cinnamic acid containing one of these groups might bring about the desired effect. Since the employment of amino-compounds of the antifebrin type is often attended by unpleasant secondary effects a hydroxy derivative was selected in the first place—namely, sodium ortho-coumarate, a substance having the structure of cinnamic acid with a hydroxyl (OH) substituent. Ortho-coumaric acid is somewhat similar in constitution to salicylic acid, these two acids standing in the same relationship to each other that cinnamic acid does to benzoic acid. This likeness to salicylic acid was also a determining factor in the choice of ortho-coumaric acid for medicinal purposes, bearing in mind the beneficial action of the salicylates in certain pathological conditions. For hypodermic injections a 22 per cent. aqueous solution of the sodium ortho-coumarate is prepared containing a slight excess of the free ortho-coumaric acid. The dichroic solution is quite limpid and stable, and as the salt is extremely soluble in cold water even a higher concentration may be employed if necessary. In all the cases hitherto studied the solution has induced a rapid physiological action, the leucocytosis being well marked and resembling that effected by the cinnamate. Experiments have also been instituted on the sodium salts of the two isomeric coumaric acids with the view of ascertaining whether the change in the relative positions of the active groups brings about any appreciable differences in their physiological effect. Sodium para-coumarate, prepared by the Perkin-Fittig synthesis from para-hydroxy-benzaldehyde, is a much less soluble salt than the ortho-compound and accordingly an 8 per cent. aqueous solution was employed. The results obtained with equivalent quantities seemed to show that the action was of a similar nature but rather less intense than that produced by the ortho-salt. Sodium meta-coumarate, which was employed in 20 per cent. aqueous solution, had a very marked physiological action, being apparently even more active than the ortho-compound. The meta-coumaric acid required for this preparation was produced synthetically from meta-nitrobenz aldehyde. From a chemical point of view the action of the meta-acid is of special interest. It is well known that benzenoid ortho- and para-compounds in general often resemble one another in their chemical and physical properties whereas they frequently both differ markedly from their isomerides of the meta-series. In the case of the ortho- and para-coumaric acids the groups (OH) and (CH : CH . CO$_2$H) are in sympathetic positions and might accordingly be supposed to act conjointly but in the meta-compound these groups are in apathetic positions with respect to each other, so that the meta-acid might be expected to exhibit the dual properties of phenol and cinnamic acid, each substituent group producing its physiological effect to some extent independently. The three isomeric coumaric acids are certainly physiologically active but it must be left for further experiments to decide which of these is likely to prove to be the most serviceable therapeutic agent. The investigation is being extended to other compounds of a similar type and Dr. Morgan may be congratulated on the prospect opened up of being able possibly to correlate the physiological action of these substances with their chemical constitution.

A QUESTION OF ACCIDENT OR DESIGN.

At Swansea an action has been tried recently by Mr. Justice Channell in which so remarkable a story was suggested on the part of the defence that it deserves to be recorded. The jury were unable to agree as to what had actually occurred and therefore, as the case may be tried again, comment would be out of place. The plaintiff sued for damages for the loss of both his legs, alleged to have been caused by the negligence of the defendants, the Taff Vale Railway Company. His story was that when travelling in a second-class carriage on the defendants' line he rose from his seat in order to place his umbrella in the rack. At that moment a jolt occurred which threw him against one of the doors and this being left unfastened permitted him to fall out upon the line where he somehow got into such a position that the train he had travelled in went over his legs, with the result that they had to be amputated. Presumably the negligence relied upon consisted in the door being open, not in the jolting, which must be natural to railway travelling and can hardly be sufficient to found an action for damages upon when a very unlooked-for result occurs. The railway company, however, denied that any jolting occurred at the place indicated, and incidentally further denied that the plaintiff was in the train at all. They called evidence to show that he was not one of the second-class passengers on the evening in question and said that he might easily have bought the ticket found on him and have walked along the line without being seen. They suggested that he actually did this and laid his legs across the line in order to secure compensation for the terrible injuries which must necessarily ensue. He had upon him when found copies of three papers which provide insurance coupons for their readers and had written his name on these. Under the terms of these coupons, however, it was pointed out, he would not be entitled to recover except in respect of an accident happening to the train itself in which he travelled and consequently, unless he had omitted to study the conditions laid down, the fact that he was thus insured could have no bearing on his conduct. The strongest evidence on behalf of the defendants was that of three medical witnesses, all of whom had seen him within various short periods after the accident, including one gentleman who saw him before his removal to the Cardiff Infirmary. Their testimony, briefly, was to the effect that they would have expected in the case of an accident such as the plaintiff described to find other serious injuries in addition to those to the legs, which, however, they had not done. Each leg, moreover, was crushed practically at the same point, so that at the time when the train passed he must have been lying with them crossing the nearest line at right angles, which medical witnesses considered to be an unlikely position in the alleged circumstances of accidental falling from the train. The first jury to hear the case has separated after vainly trying to come to an agreement upon the subject and it will be interesting to see whether a verdict is ultimately arrived at.

THE CLIMATE AND THERAPEUTIC INDICATIONS OF MEXICO.

In a Consular Report of Mexico just published the statistical department of the Superior Board of Health gives some interesting records of the mortality from various diseases. In the city of Mexico diarrhœa in its various forms heads the list, with a total of 3720, nearly two-thirds of this number being children. Then come the diseases of the respiratory organs: pneumonia, 1229; pulmonary tuberculosis, 1125; bronchitis, 1002; and broncho-pneumonia, 688; making a grand total of 4044. Some of the other causes of death mentioned in the report of the Board of Health are as follows: organic diseases of the heart, 610; meningitis, 485; cerebral congestion and hæmorrhages, 365; infantile complaints, 473; cirrhosis of the liver, 631; other diseases of the liver, 320: diseases of the intestines and stomach, 257; accidents, 311; convulsions of children, 182; alcoholism, 194: typhus fever, 248; malaria, 102; measles, 97; scarlet fever, 33; and diphtheria, 42. The general idea of the Mexican climate (which in reality is a very varied one) leads us to expect a heavy mortality from diarrhœa and malarial conditions but it is rather surprising to note the high figure in respect of diseases of the respiratory organs. It may be partly accounted for, no doubt, by the number of visitors suffering from pulmonary tuberculosis who seek the climate of the higher table-lands in the hope of cure. The line of treatment adopted by the physicians is much the same as in other places—open air, good food, and abundance of sunshine being the chief methods employed. It is noticed, however, in the report that people, especially newcomers, in the high latitudes (Mexico city is 7500 feet above the sea) are particularly liable to catch "colds" and to find great difficulty in getting rid of them. The more experienced residents adopt the plan, directly they feel the symptoms of a cold, of leaving the city for Cuernavaca, Cuautla, Orizaba, Vera Cruz, and other places and find that on a lower level they very soon recover. It is difficult for the public to realise the effect of genuinely high altitudes on the breathing apparatus. The highest part of London (Hampstead Heath) is only about 360 feet above the sea-level and on the banks of the Thames, where thousands of London working men and their families congregate, the height above the sea is about 22 feet. The table-lands of Mexico vary from 5000 to 7000 feet above the sea, but when we have reached the summit of Snowdon (where no one lives) we have only attained an altitude of 3560 feet. Visitors to Mexico are recommended to wrap themselves up well before going out in the evenings, for even in a climate where all the products of the vegetable kingdom grow with luxuriant ease the night-air is liable to sudden changes and disease comes swiftly. One of the best protections against it is to maintain the general system by taking plenty of nourishing food, especially in the dry season, which is the most dangerous of the whole year. Tuberculosis, diarrhœa, and enteritis are said to be chiefly rife among the very poor. And, indeed, when we learn the primitive nature of the housing accommodation—the working classes for the most part being content with one room where the door does duty for both window and chimney and where neither water nor any sanitary arrangement exists—this is not surprising. Applying their habitations as a standard to the rest of the lives of the poor of Mexico it is no wonder that the officials of the Superior Board of Health and other physicians of the city state that the principal causes of the high rate of mortality are "bad food, bad water, and excessive drinking of pulque." "Pulque" is the national drink made from the juice of the agave or Mexican aloe, the vine of the ancient Aztecs. This plant grows in various forms very freely all over Mexico, and besides the juice, which is said to have been the ruin of many Indian tribes as well as of the white inhabitants of the country, large quantities of fibre used in the manufacture of twine, rope, and so on, are obtained from it. The best time to visit Mexico is in the winter months between September and March on account of the stringent quarantine regulations in the United States and Cuba. In this season the hurricanes which rage along the coast make the neighbourhood a terror to navigators but these same winds sweep the lower lands sloping down to the sea free from malaria and yellow fever which prevail in the hot season.

TREATMENT OF TUBERCULOUS ADENITIS BY THE X RAYS

IN *La Polyclinique* (Brussels) of June 15th M. Hendrix has published some very encouraging results from treatment of tuberculous adenitis with the x rays. A man, aged 50 years, had had for a year in the left supraclavicular fossa a tumour of the size of the fist consisting of an agglomeration of enlarged glands. It was fixed in its deep part but the skin was moveable over it and unaltered. It pressed on the brachial plexus, producing paresis and slight atrophy of the arm and hypoæsthesia of the fingers. The patient was in the early stages of tabes dorsalis and of tuberculosis of the apices of the lungs. Treatment with the x rays was commenced on May 25th, 1903, and was continued for three months. After the first application the glandular mass began to diminish. On August 22nd an unexplained phenomenon occurred: the tumour underwent a sort of gaseous degeneration. There was a sensation of crepitation and percussion gave a tympanitic note. On the following day this phenomenon had disappeared; there was no further trace of the tumour and the symptoms due to compression of the brachial plexus had disappeared. At the time of the report, two years later, the only trace of the tumour was a hard lump of the size of a small almond. The tabes dorsalis and the pulmonary tuberculosis persisted. In a second case the patient, a boy aged nine years, was seen on April 1st, 1905, with a large glandular mass extending along the right sterno-mastoid muscle from the mastoid process to the clavicle and penetrating so deeply that its lower limit could not be defined. It was multilobular and somewhat soft but the glands which composed it were hard and elastic. It was fixed to the deeper parts but the overlying skin was sound and moveable. After three days' treatment the result was surprising: the mass had disappeared and the glands could be rolled on one another. The latter diminished and after four weeks there was only one enlarged gland of the size of a hazel-nut. Eleven days later this had disappeared. In a third case the patient, a girl aged 18 years, had had for three years four enlarged glands varying in size from a hazel-nut to a large chestnut. They were hard and elastic, moveable, and without inflammatory reaction. The largest was situated at the angle of the jaw and was formed of conglomerated glands. Injection of tuberculin gave a positive result. Treatment with the x rays was begun eight days before the time of the report when the glands had already diminished. M. Hendrix finds that the action of the x rays is most rapid in cases when the glands are agglomerated into a mass. As illustrated above, the connecting material disappears in a few days and the glands can be rolled on one another. In a few weeks these diminish without altering in consistence. Then the smaller ones disappear entirely; the larger ones sometimes leave a sclerous nodule, a kind of cicatricial residue. M. Hendrix has never observed a relapse.

THE CHILDREN'S COUNTRY HOLIDAYS FUND.

THE Bishop of London sends us an appeal on behalf of the Children's Country Holidays Fund, an institution which is doing a work of far-reaching importance, inasmuch as the health of the poor children of London has a significant bearing on the physical well-being of the future toilers of our great metropolis. As his lordship points out, the poor children of London are unlike more fortunate boys and girls to whom the end of the school term brings days of health and enjoyment in the country or at the seaside, for the great majority of the 800,000 children in our London elementary schools spend their month of leisure in stuffy and overcrowded rooms or at play on glaring asphalt pavements. Even those who are strong are overcome by lassitude, while the delicate suffer terribly from the intense heat and the unceasing roar of traffic. To the poorest among these children the Children's Country Holidays Fund presents the opportunity of spending a fortnight amid country scenes with country hosts. Last year the public enabled the fund to send away over 39,000 children; this year still more are asking for the holiday. There are over 18,000 children waiting to go on August 10th and to pay for them the fund requires another £5000. The offices of the fund are at 18, Buckingham-street, Strand, W.C., the honorary treasurer is the Earl of Arran, and £1 1s. will send away two children for a fortnight. Few will fail to realise the good work which this fund is doing and we trust that the appeal will be liberally responded to

SENILE ALBUMINURIA.

THE *Boston Medical and Surgical Journal* of July 13th contains an important paper by Dr. A. E. Austin on a condition which is not generally recognised—senile albuminuria. In a paper with the paradoxical title, "The Advantages of a Trace of Albumin and a Few Tube Casts in the Urine of Certain Men above 50 Years of Age," which was noticed in our columns,[1] Professor W. Osler has described a form of albuminuria which he attributed to "pre-senile changes in the kidney the result of arterial degeneration causing a circulatory disturbance in the kidney." Dr. Austin in examining the urine of the aged paid attention to the form of albumin present, for the prevailing prostatic enlargement and consequent irritation cause nucleo albumin and mucin to be present. The former on account of its solubility in strong acids cannot be mistaken for serum albumin in the cold nitric acid test but the latter forms a clear zone which, however, is at some distance from the acid. Dr. Austin always verified the presence of serum albumin by cooking with acid phosphate of sodium. He examined the urines of 45 men of ages varying from 64 to 95 years, the greater number being over 70 years. In 16 mucin alone was present as shown by the formation of "an upper ring." Of these 16 cases prostatic and seminal vesicle cells, amyloid bodies, and a few pus cells and blood corpuscles were present in nine, pelvic and renal cells and hyaline were present in one, and no concomitant condition could be discovered in four. In nine cases a typical ring showing only serum albumin was present. The amount varied from a mere trace to ½ per cent. in one case and ¼ per cent. in another. Associated with it in four cases were discrete pus corpuscles, much blood, and bladder and prostatic cells but no casts; in two cases pus, pelvic cells, and blood corpuscles were found in clumps: in three cases there were hyaline and granular casts. Thus three conditions could be distinguished—prostatic catarrh, mild pyelitis, and pyelonephritis. In ten cases both serum albumin and mucin were found; in most of these cases casts were found as well as the other bladder and prostatic cells. Thus the urine of 19 out of 45 old men contained albumin varying in amount from traces to considerable quantities. Yet these men were not ill and suffered only from the infirmities of age. Dr. Austin concludes that albuminuria is fairly frequent in old men, that mucinuria is more so, that both are associated with changes in the urinary tract and that these changes are not of serious import. These facts are important because in ignorance of them the practitioner might readily diagnose Bright's disease and give a prognosis and follow a treatment not applicable to the case.

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[1] THE LANCET, Dec. 14th, 1901, p. 1590.

A CHECK UPON THE DISSEMINATION OF PULMONARY TUBERCULOSIS.

EVIDENCE is forthcoming that the Local Government Board is now seriously considering the spread of pulmonary tuberculosis among the poorer classes of society. It will be remembered that in April last a deputation of persons interested in the prophylaxis of this disease waited upon the Metropolitan Asylums Board to urge the advisability of the Board's undertaking the provision of sanatoriums. The managers of this Board, having asked for the views of the Local Government Board, have been informed that the latter body is obtaining information on the subject but is not yet in a position to express an opinion as to whether the managers should undertake the new duties suggested by the deputation. A communication addressed on July 3rd to the clerk to the Bath union shows, however, that the Local Government Board is moving to some extent in the direction desired by the memorialists, for it has decided that indoor paupers suffering from pulmonary tuberculosis with expectoration may be regarded as afflicted with an infectious disease within the meaning of Section 22 of the Poor-law Amendment Act, 1867, and may therefore be detained in a workhouse on a certificate by the workhouse medical officer until that officer shall furnish a further certificate to the effect that the patient can be discharged without danger to himself or to others. Much depends on the interpretation of this decision which medical officers accept as their guide but if compulsory detention is adopted in all the cases in which it would clearly be to the advantage of the patient and of those connected with him some special provision in the shape of infirmaries or sanatoriums will be rendered necessary.

THE Alvarenga Prize of the College of Physicians, Philadelphia, has been awarded to Dr. D. Chalmers Watson, Edinburgh, for an essay on "The Importance of Diet: an Experimental Study from a New Standpoint."

SIR Joseph Walton, one of His Majesty's Justices of the Supreme Court, has accepted the presidency of the Medico-Legal Society, in succession to Sir William J. Collins, the first President.

A VISIT TO JAMAICA IN MARCH AND APRIL, 1905.

BY THOMAS W. THURSFIELD, M.D. ABERD., F.R.C.P. LOND.,

PHYSICIAN TO THE WARNEFORD HOSPITAL, LEAMINGTON.

WITH a view of bringing to the notice of the medical profession the capabilities and advantages of the island of Jamaica as a winter resort for invalids and tourists Sir Alfred Jones, the managing director of Elder, Dempster and Co., some 12 months ago announced that he was willing to take a number of medical practitioners for a voyage to Jamaica and back in one of the magnificent steamers of the New Imperial Direct Mail Steam Line to the West Indies. I was fortunate in receiving an invitation and the following rough notes are, as far as they go, a record of a most enjoyable episode.

We sailed from Avonmouth, Bristol, on March 25th at 8 A.M., my cabin companion being Dr. Sidney A. Bonner of Great Berkhamsted. The ship we sailed in, the *Port Kingston* (twin screw), is 7000 tons burden and 10,000 h.p., with a speed of over 17 knots and is considered to be the best of the whole of the fleet of steamers engaged in the service. Voyages are much the same wherever one goes, but having seen many ships and made many voyages I never sailed on a more comfortable or better found vessel. Of her cleanliness, ventilation, and sanitary arrangements I cannot speak too highly, while the service was efficient, punctual, and willing. I am sure that the passengers would all join in my testimony to the merits of Captain Parsons and his officers.

On the ninth day out, after sailing through all the glories of the tropics, we made our first land—Turk's Island, one of the Bahamas—and on the next afternoon we arrived at Port Royal, Jamaica, of old piratical and infamous reputation, reaching Kingston just before dark after a splendid voyage of 4250 miles in a little more than ten days. As is always the case in the tropics, darkness came on quickly and before the formalities of the Custom House were completed it was dark. But having hired a buggy we drove five miles through what appeared to be a well-lighted, very populous, and rather dilapidated town to a hotel called the Hotel of the Constant Spring. It is situated at the bottom of the foothills of the Blue Mountain range, 600 feet above the town and in a beautiful garden park. It is also the terminus of one branch of an electric tram service which serves Kingston in an efficient and cheap manner. The hotel is large and well arranged and is owned and managed by the Elder Dempster Company. The water-supply, as the name of the hotel suggests, is regular and abundant. There is a fine swimming bath attached to the hotel, through which runs a stream of water coming directly from the mountains. There are a fine garden and park with tennis lawns, a cricket ground, and a fair golf course. The views of the mountains in one direction and of the city and the sea in the other are most striking, and altogether the visitor could not be better housed. One peculiarity of the island of Jamaica is the regular occurrence of the sea breeze and the land breeze. The sea breeze in fine weather begins about 10 A.M. and gradually strengthens until by noon it is really strong in the town and harbour. By 4 or 5 o'clock it begins to die away and by 6 o'clock it ceases. Somewhere about 8 o'clock a faint but pleasant breeze in the exactly opposite quarter arises, blowing off the mountains and the land towards the sea. These winds to some extent determine the architectural arrangements of the better class houses of the island. Houses are so built that both winds may blow through them, and the comfort that this affords in a hot climate is considerable—in fact, except when one is making considerable efforts or taking violent exercise one need never feel too hot in Jamaica. The Hotel of the Constant Spring is arranged carefully to catch these breezes and though the thermometer was sometimes over 85° F. I never once felt too hot in its cool breezy public rooms and corridors. Shortly after my arrival I was asked with my brother (who is well known in Jamaica and who went there with me for his fourth visit to the island) to stay with his Excellency the Governor at the King's House. There I stayed for three days in much comfort, being free to use and enjoy one of the most perfect gardens I ever saw, in which I made acquaintance with all sorts of beautiful tropical plants and trees. Others have so fully and graphically described the flowers and the fruits of the tropics in general, and of Jamaica in particular, that I will not venture but I will give a general warning as to the consumption of fruit by visitors. Upon arrival they must be careful. The fruit is tempting to sight and taste and it is peculiarly so in a hot climate. Visitors should take it sparingly at first and in the morning rather than at any other time and should see that it is ripe and fresh.

The city of Kingston (about 35,000 inhabitants) is not beautiful as a city but in many ways it is interesting and there are many institutions in it well worth a visit. Locomotion is easy and cheap owing to the electric tram service. There is a good club to which visitors can belong upon easy terms if properly introduced. There is a small garrison of white troops, and, as a matter of course, the usual sports and games of our officers follow, such as races and polo. Kingston is the seat of government of the island and the centre of its commerce. The residences of the officials and of the commercial magnates are in and around the city and no words of mine can sufficiently acknowledge the unbounded hospitality I received everywhere in Jamaica but especially in Kingston. Everyone wished to do their utmost to please and to entertain and each one vied with the other until the guest was compelled to make a choice of being half-killed by kindness or of risking offence in the defence of his poor self.

Some days after my arrival I joined an expedition to Newcastle, a military station for the white troops about 4500 feet above the sea and in the Blue Mountains. We went partly by tram and partly in carriages, but for the greater part of the distance we rode ponies, and on our way we stopped to inspect a coffee plantation and saw the whole process from the flower to the dried seed or bean constituting the coffee bean of commerce. We were informed that the Blue Mountain coffee was the best in the world, but unhappily, like the famous British infantry, there is very little of it. I am told that this coffee is so good that very little gets into retail commerce in the pure state as it is used to bring up the quality of lower grades by being mixed with them. Be this as it may, I can say that the coffee prepared from it is very good indeed. The views from Newcastle are superb and the ride through the various forests is most interesting. As to the ponies they are marvellous; I am sure they could climb stairs and am not sure that ladders would be beyond their talents. We spent a long day among these mountains and got home by 8 P.M. The temperature at Newcastle was between 60° and 70° F. One of the officers in charge of this sanatorium for white troops described Newcastle as being a one blanket place in the summer and a two or three blanket place in the winter months.

Later I had a most delightful excursion to the other side of the island to a beautiful plantation called Cape Clear. We partly drove and partly walked and partly went by railway. We stuck in a river and had to get out and wade, but all our trouble was repaid by a most hospitable welcome at the hands of our friends on the plantation. There we met a picked assembly of some of the largest planters of the island and were introduced to the mysteries and methods of banana cultivation. Returning by rail to a station called Bog Walk we drove down a magnificent pass, one of the show drives of the island, along the Rio Cobre, a river which is made to operate the whole electric force of Kingston, whether for tramways or for lighting, and arrived at the ancient capital of the colony—Spanish Town. Here there are several objects of interest—among others a fine monument to Rodney, the saviour of the West Indies, a title earned by his victory over the French fleet under Admiral Comte de Grasse.

Jamaica as a health resort can start by boasting a good statistical record. The population of the island as estimated by the Government officials at the end of the year 1904 was 797,528. Of this number about 20,000 are supposed to be white. The death-rate for the whole island is low; in 1904 it was 24·2 per 1000 and in 1902-03 it was as low as 19·8. For the past ten years the island death-rate has averaged 21·45 per 1000. The death-rate of Kingston is higher, being 29·7 in 1903-04. The birth-rate of the whole island in the same year was 39·9 per 1000, a very satisfactory contrast to the death-rate. One of the principal causes of death is pulmonary tuberculosis, while the mortality from cancer is very small in comparison with our home statistics. I had the advantage of a long conversation with Dr. M. Grabham, one of the best known physicians in the colony, whose work upon the mosquitoes of Jamaica has brought him well-deserved recognition and fame. He told me that there were very few endemic diseases in the island and none to which visitors were usually liable supposing common precautions are taken. Simple continued fever after undue exposure or fatigue is readily met by rest and care; typhoid fever is not at all common; pulmonary tuberculosis is rather common but is nearly always of the acute type; dysentery is uncommon; yellow fever is very uncommon and always under complete control; and leprosy is rapidly declining. There is an island fever of a malarial type which attacks residents who have to live and work in swampy places; it is probably mosquito-borne but it is not severe when properly managed and is unknown at elevations above 2000 feet. The water-supply of Jamaica is good and plentiful but for drinking purposes water should always be boiled, especially at the beginning of the rainy season, unless its sources are absolutely guarded and cleansed, for there are many squatters in the hills, so that it is not easy to be absolutely sure of the purity of any supply. Kingston has a good water-supply and its drainage system is good, the effluent being carried right out to sea outside the coral reefs. From these facts and figures it will be gathered that Jamaica is a very healthy tropical country and that with due precautions it is eminently suited for the reception of visitors who may with very ordinary care enjoy a glorious climate, magnificent scenery, and new sensations with little or no risk to their own health, less, in fact, than they would run on the Riviera or in Egypt. As to climate, the general temperature during the best months of the year—namely, December, January, February, and March—is about 80° F. in the shade, cooling down some 5° to 7° in the night. It rarely reaches 90° and, except in the mountains, does not go below 75°. There are two rainy seasons, one in May and one in October, the latter being much the longest and most severe, but there are, as Jamaica is so mountainous, rain storms at all times. During my short visit I was never inconvenienced by the heat and never once kept awake by a hot night. In the middle of the day it is generally very hot and the heat of the sun is very striking but then one must remember the latitude of Jamaica, 17½° N., and take the usual tropical precautions.

And now as to the class of invalids who may be recommended to winter in Jamaica with advantage to their health. First, then, I should consider, and in this I am borne out by the local practitioners, that there are very few phthisical patients who would get any advantage whatever by a residence in Jamaica. The climate is too enervating for the majority of such cases and, moreover, the arrangements are more suited for strong and active people than for invalids who must take and receive every advantage they can get. I can conceive that in the very initial stage of picked cases much good might be done, but the place would only be suitable for a few months of the year. For advanced cases of pulmonary tuberculosis Jamaica is altogether unsuitable. This is almost indicated by the fact that pulmonary tuberculosis when it occurs in the native population generally progresses in a most rapid way. On the other hand, patients who suffer from bronchitis and winter cough and nearly all cases of chronic rheumatism are greatly benefited by a winter in Jamaica, while certain forms of kidney disease are much relieved. Rheumatism and kidney disease are very rare among the native-born inhabitants, white and black.

Jamaica is often spoken of by the inhabitants of the other West India islands and of Demerara as the very healthiest spot in the West Indies and it has been used for generations as the sanatorium for the other places, yet the neglect of common precautions at one time made this healthy spot into a white man's grave for the troops stationed there. Now the application of ordinary scientific laws and common-sense precautions has made Jamaica one of the healthiest of our foreign stations. The really frightful mortality which used to occur is gone and instead we have merely a low average death-rate, better a good deal than in some quarters held in much higher estimation as to health. Invalids and, indeed, anyone going to reside in Jamaica for even a short period should take certain precautions and avoid certain imprudences. As to clothing, it should be of the lightest wool or silk next the skin and the very lightest external clothes either flannel or cotton. The head should be well protected and a well-ventilated helmet of pith or other light material should be worn when much exposed to the sun. With light clothing and a well-protected head no one will be incommoded by the heat in Jamaica. As to diet, I have already mentioned that all newcomers to the tropics should be very careful of the fruit when first they arrive. It is cool, luscious, and tempting, but after a long voyage, during which the digestive organs may have been upset, it is very apt to disagree. It is well to eat sparingly of meat and rather to eat sparingly altogether upon first arrival. There are so many and such a variety of tempting dishes that this is rather a counsel of perfection but it is nevertheless a wise precaution. What to drink is a matter of taste and habit but I may record that the almost universal beverage beyond tea and coffee is whisky and soda-water with ice. The various fruits are compounded into most delicious iced squashes and I cannot but believe that the less alcohol consumed by anyone the more fit and healthy that person will be. It is not well for newcomers to expose themselves too much to the sun without protection but the absolute terror which some people have of this luminary is very amusing and very unreasonable; a white umbrella is useful and necessary indeed to those who either suffer from or fear the sun. True insolatio (heat apoplexy or real sunstroke) is practically unknown in the island and the commonest precautions will avert any evil consequences of exposure to the sun. It is as well to be careful in the evening of the land breeze, chills from this delicious wind while sitting at dinner being frequent. It is well to wear under evening clothes something round the loins like the woven apparatus that is called a cholera belt; this can be procured everywhere.

To sum up a panegyric, it seems to me that for anyone who has leisure and desires to see perhaps the most beautiful island in the tropics and at the same time by a pleasant and not too long a voyage to escape the miseries of an English winter and early spring, there is no place like Jamaica. For the sufferer from chronic rheumatism or gout or from incipient kidney trouble there is no better winter resort. For the idlers tired of the Riviera, Algiers, Madeira, or the Canary Islands there can be no better new sensation. While for the busy professional or business man who can give himself a month's holiday in glorious scenery and in the most delightful climate there can be no more attractive excursion. The directors of the Elder Dempster Line of Direct Imperial Mail Steamers have done great things in their endeavours to meet the reasonable wants of people going to this island. The two principal hotels have been bought, reorganised, and refurnished by them and they have made them, with a few trivial exceptions, not only comfortable but really sanitary. The steamers of the line are known to be some of the best found and most luxuriously fitted and worked of any ocean steamboats.

There are drawbacks, of course, to life in Jamaica and first among them I should place mosquitoes. But mosquitoes are not generally numerous, though they abound in certain districts. It is no doubt wise to sleep under mosquito nets; it is not considered to be necessary to take this precaution all the year but as it is now proved beyond doubt that mosquitos are the bearers of much, and much fatal, disease it is well to take every step to avoid their bites. The joint work of Principal Theobald and Dr. Grabham on "The Mosquitoes of Jamaica" is a monument of painstaking inquiry and the curious in such matters will do well to get it. Another insect plague of the island is ticks, said to have been introduced by some South American cattle. These little torments swarm everywhere and it is not safe to go off a beaten road on foot unless wearing high boots or leather gaiters. There is a curious story told about the upsetting of the balance of animal existence in connexion with rats, ticks, snakes (which are now extinct in Jamaica), and mongooses. There were once snakes in Jamaica, though I understand they were not very numerous. There were also rats which were extremely numerous. In order to keep the rats and snakes down the mongoose was imported from the East. This brave little beast soon completely cleared the island of snakes and it so harried the rats that in order to save themselves the rats took to the trees to live in and there they changed their diet and became egg-eaters and bird-destroyers. This state of things so reduced the number of birds that the cattle ticks increased and multiplied until they became the nuisance that they are, while now the ticks are said to be destroying the mongooses, getting inside their ears, whence the mongooses cannot evict them. Meantime the mongoose, deprived of its natural diet of snakes and rats, has taken to chickens, so that it in turn has become a ridiculous nuisance. I suspect this sequence of events may not bear strict investigation but it was repeatedly told to me as I have set it down.

The profuse and general hospitality of the island made our sojourn pass all too quickly. But at 4 o'clock on the tenth day of our stay we started to return with a very full complement of passengers. Of the incidents of the passage it is not necessary to say much. On the ninth day we made the coast of Ireland in the neighbourhood of Bantry Bay. The day was fine and clear and a more beautiful sight I never saw. The next day we arrived early in the morning at Avonmouth in the midst of a cold wet fog, a truly British welcome making us all long for the light and sun of the West Indies. The general impression made on me by the voyage was that the endeavour to make Jamaica a resort for tourists and certain classes of invalids ought to be a very great success and I believe it will. I have personally to thank Sir Alfred Jones and the Elder Dempster Company for a most thoroughly enjoyable and satisfactory holiday, all too short in duration.

Leamington.

FOUNDER'S DAY AT EPSOM COLLEGE.

FOUNDER'S Day was celebrated at Epsom College on July 29th, special interest being attached to the day's proceedings in consequence of its being the jubilee Founder's Day and owing to the opening of the Holman art and reading room which has been erected by subscription to commemorate the work done for the profession by Sir Constantine Holman, the treasurer of the College.

The proceedings commenced with a short service in the College chapel at 2.45 P.M., after which the visitors went to the big schoolroom to witness the distribution of prizes. Amongst those on the platform were Sir William H. Broadbent, Bart., who gave away the chief prizes; Sir William S. Church, Bart., chairman of the council; Sir Constantine Holman, Mr. J. Paul Bush, C.M.G., Dr. F. de Havilland Hall, Dr. John H. Galton, Mr. John H. Morgan, Dr. Frederick Needham, Mr. H. W. Kiallmark, and Dr. Guthrie Rankin.

The HEAD MASTER reviewed the scholastic work of the past year and referred to the various educational successes. He reported that all the teaching arrangements had been recently reviewed by inspectors under the Joint Universities Board, the result of which was generally satisfactory. As a consequence the Army Council had granted to the College the privilege of sending in candidates for leaving certificates admitting to the army competitive examination. A large number of boys were about to go into camp at Aldershot, and Epsom College was doing its best to carry out Lord Roberts's suggestion in regard to compulsory rifle training in schools. In conclusion he thanked the numerous distinguished visitors for coming amongst them and in referring to the treasurer, Sir Constantine Holman, he observed that he had worked entirely for others and no one could have higher praise than that.

At the conclusion of the distribution of prizes Sir WILLIAM BROADBENT gave an excellent address to the boys, reminding them that there were long distance runners as well as sprinters, and that pluck and perseverance were as essential as speed. Those boys who had taken prizes had also taken responsibilities, for they had given hostages for maintaining the high standard which they had already attained. After speaking of the importance of the public school spirit and of its value in after life, he concluded by reminding the boys that success and happiness were not convertible terms.

Sir WILLIAM CHURCH moved a hearty vote of thanks to Sir William Broadbent for his kindness in attending that day, and drew attention to the great interest which he had taken for many years in the work of the British Medical Benevolent Fund.

The proposition was seconded by Dr. NEEDHAM and carried with acclamation.

The visitors then proceeded to the Holman art and reading room, and as the gathering was far too large to be accommodated inside the addresses were made from the steps of the building.

Dr. GALTON, who initiated the Holman testimonial fund, in asking Sir William Broadbent to declare the building open, referred to the great services which Sir Constantine Holman had for so many years rendered to the various benevolent agencies of the profession, more especially to the Surrey Medical Benevolent Society and to Epsom College. It was mainly through his efforts that the title of the institution had been altered, and one proof of his hard work existed in the fact that he had collected a sum of £7000 for the benevolent work of the College. He stated that the room had been erected primarily for the boys' recreation but the teaching of art would be allowed in it.

The room was then declared open by Sir WILLIAM BROADBENT who referred to the numerous honours which had recently been conferred upon Sir Constantine Holman. In reference to the change in the name of the College he was glad to be able to say that the funds of the benevolent side of the institution had not suffered from the loss of contributions.

The visitors then proceeded to inspect the room, the swimming bath, and the other College buildings, after which they adjourned to the grounds where refreshments were served whilst a band played. A special attraction provided was a gymnastic display in the grounds under the direction of Sergeant Tancred, which was excellently performed and was greatly appreciated by the parents and friends of the boys. It is interesting to note that there are not more than two boys in each house who are unable to swim two lengths of the recently enlarged swimming bath.

THE BROMPTON HOSPITAL SANATORIUM AND CONVALESCENT HOME AT HEATHERSIDE, CAMBERLEY.

IN THE LANCET of June 25th, 1904, we published a brief account of this institution shortly before it was formally opened by H.R.H. the Prince of Wales. We have recently paid a second visit to the sanatorium in order to see it in working order. About 50 patients are now under treatment and it is intended to open the remaining beds as soon as possible.

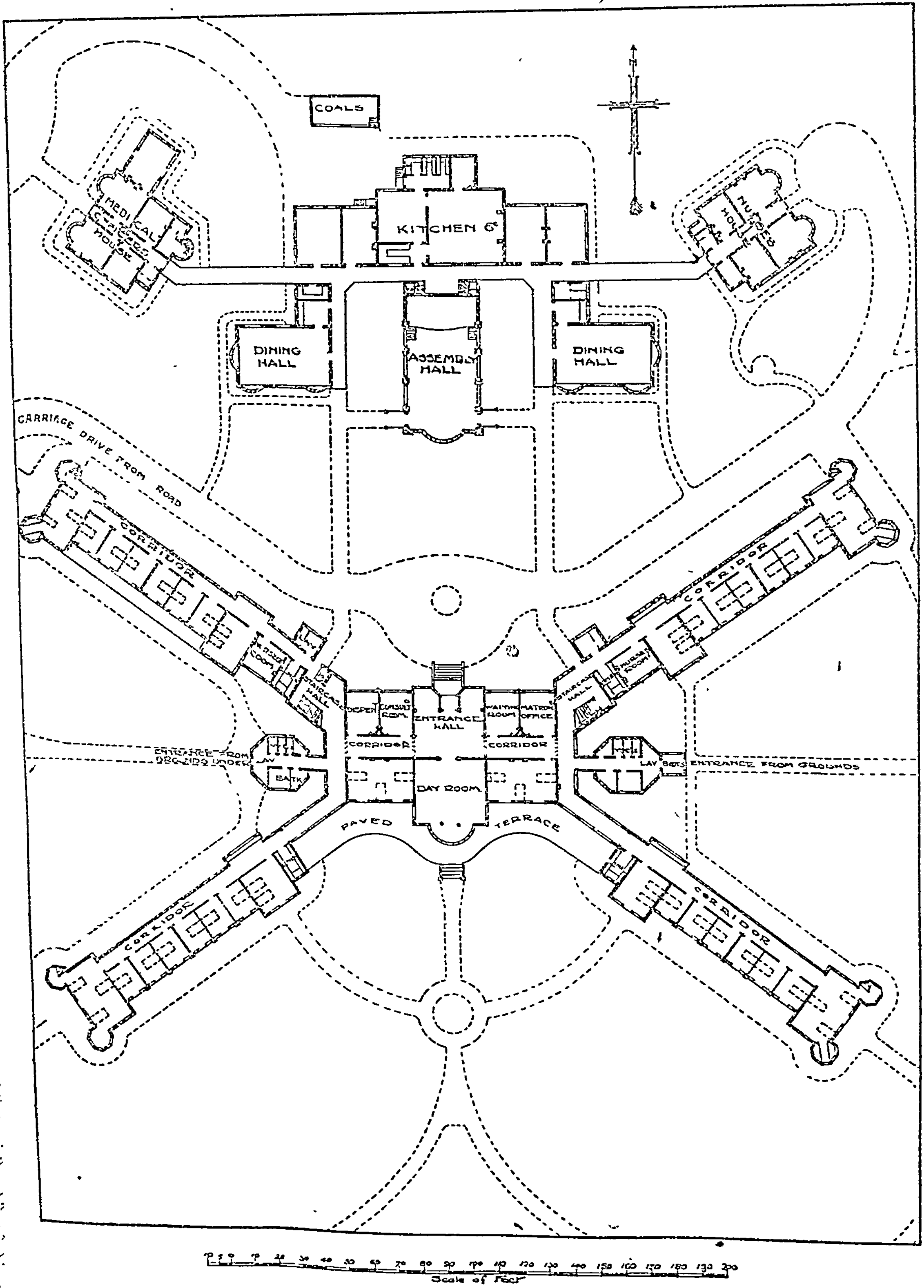
In erecting the buildings the committee of the Brompton Hospital had three objects in view. First, to submit early cases of pulmonary tuberculosis to open-air treatment in a dry and bracing climate for several months with a view to obtain arrest of the lung disease. Secondly, to educate a large number of patients in the system of hygienic or open-air treatment, so that having learnt these principles they may return to their own homes and become centres of instruction to others. Thirdly, to provide a convalescent home for other patients who have been treated in the parent institution. A few weeks in the fine air of Heatherside under medical supervision will, it is hoped, restore such patients sufficiently to enable them to resume suitable employment. After a careful examination of the buildings and appliances and after personal inquiries and observation we feel sure that the sanatorium and the system of treatment which is adopted will in every way amply carry out the above intentions.

The buildings stand on the Chobham Ridges, Surrey, 400 feet above sea level, about 30 miles from London, two miles from Frimley station, and three miles from Camberley. The surrounding region was known of old as Bagshot Heath and the Chobham Ridges border the large tract of uninclosed moorland belonging to the public, over which the War Office has acquired certain rights for military purposes.

The sanatorium grounds face for the most part south and command a fine view over Frimley Common, Farnborough, and Aldershot. A distant horizon is thus obtained. This is a matter of some importance. A limited horizon is likely to have a depressing effect on patients confined to bed or to their rooms from any cause, whilst a fine view of distant country produces an opposite effect. Except on the south the grounds are surrounded by the pine woods of the Heatherside estate. In the 20 acres belonging to the institution are to be found specimens of numerous varieties of pine, in addition to the pinus sylvestris. Numerous seats have been placed amongst the trees for the benefit of the patients who thus pass a large portion of their time in an atmosphere impregnated with the aroma of the pines. These woods afford an excellent shelter to the sanatorium from north and east winds and give needful shade in summer. The soil is gravel and sand and belongs to the Upper Bagshot series. The meteorological observations taken in the district show a dry sunny climate of a bracing character. The mean rainfall is 23 inches, the number of rainy days 183, the relative humidity 82·8 per cent., and the amount of cloud 7·4 per cent. The mean annual temperature is 48·6° F., the mean maximum 57·1°, and the minimum 40·5°, with a range of 16·2°. The buildings were designed by Mr. Edwin T. Hall, vice-president of the Royal Institute of British Architects, who has adopted an entirely novel and original design. As will be seen by the plan it consists of detached blocks and provides accommodation for 100 patients. (Fig. 1.) The main building has a central block and four radial pavilions. In the centre are the day rooms, facing south, yielding most pleasant shelter when their use is permitted by the medical superintendent. Access to these rooms is carefully regulated so that patients may only enter them at certain prescribed hours. In this portion of the building, also, are the consulting room, dispensary, matron's rooms and board room. There are also in this block four wards (two on each floor) containing three beds each. These are intended for patients who require special observation. Each of the radial pavilions is two-storeyed and contains accommodation for 22 patients in 12 wards holding one bed each, two wards containing two beds, and two containing three beds. Each floor is entirely disconnected from the other. All the rooms intended for the patients face S., SSE., or SSW., and behind are corridors, the windows of which are arranged opposite the doors of the wards, so that a perfectly free and ample current of air is provided for each room. The wings are placed at such angles that the front ones do not interfere in any way with the back ones and the latter receive as much sunshine and fresh air as the former. It will be observed on the plan that if a line be drawn at right angles from the patients' bedroom nearest the angle in the back wing it will (if extended) pass clear of the front wing, so that patients lying in bed in that room will have a full view of the country beyond. The object in adopting the radial form was to obtain the minimum distance between the centre of the building and the wards in the extremity of each wing. This is of obvious advantage in facilitating the nursing and feeding of those patients who may be confined to bed for a longer or shorter time. This form was an original idea on the part of the architect and has proved quite satisfactory. The size of a single bed ward is 12 × 11 × 10 feet or a cube of over 1300 feet. Considering the free entrance and egress of air this size is ample. There is no advantage in having these small wards higher than ten feet; a greater height would merely add to the cost of building without compensating advantages. The windows are made to reach to the ceilings and terminate by fanlights which are made to open at an angle of 90°. The doors to the rooms are provided with similar fanlights. All the wards in the pavilions are shallow so that the direct rays of the sun can reach the backs of the rooms. This cannot happen when the wards are made deep so as to contain many beds. The glass of the windows is carried down to within a foot of the floor. The lower storey is so arranged that patients in bed can be wheeled out on to the terrace, so as to be under the full influence of the sunshine and fresh air. As a matter of fact, nearly all the patients prefer to have their beds on the terrace at night also so as to sleep in the open air, and are only driven in by the stress of weather. Open balconies are formed at the end of each pavilion. The lower wards are provided with sun-blinds. Between each pair of pavilions is a detached sanitary tower containing the bath-rooms, lavatories, closets, sink-room, &c. To afford additional safety in case of fire, in addition to the main staircases there is a fire-escape staircase at the end of each pavilion, and further two of the pavilions are cut off from the rest of the block by a corridor built of fire-resisting material with a glass roof.

To the north, and quite detached from the main building, is a large hall which is intended as a recreation room. It is admirably lighted and ventilated. A dining room for the patients is situated on each side of the hall, communicating with the kitchens by covered ways. The kitchens, and accessory departments are arranged in a manner which considerably aids in the working of the department. At the east and west extremities of this portion of the buildings are respectively the residences for the medical officers and the nurses' home. At some distance from the sanatorium and near the main road is the machinery block, containing the boiler and engine houses, the laundry, the

FIG. 1.



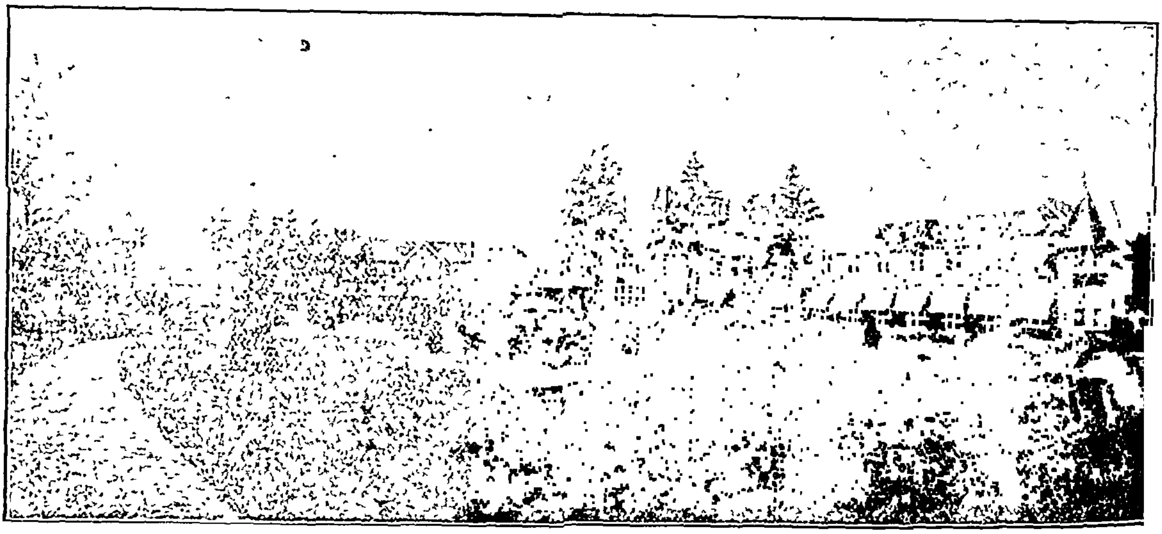
Ground Plan of the Camberley Sanatorium.

electric plant, the mortuary, and the laboratory. The institution is lighted by electricity, generated on the premises, all the plant being in duplicate. The buildings are heated by hot-water radiators. These are found to be preferable to steam radiators inasmuch as the temperature can be more easily regulated. An excellent device has been adopted to preserve the cleanliness of the walls above the radiators by placing above the radiators a sheet of metal which effectually prevents currents of heated air rising along the walls and carrying particles of dust with them. The radiators can be easily cleaned. The water is obtained from the Frimley waterworks which are at a short distance from the institution, and the drainage is connected with the Frimley main drainage scheme. A successful endeavour has been made in the external design ot the sanatorium to obviate the character usually associated with a hospital and to secure the appearance of a large country home or seaside pavilion. The mental effect thus produced on the patients of brightness and homeliness assists the general treatment. A building erected on the austere lines of barracks or an old-fashioned workhouse has a depressing effect which ought to be avoided. (Fig. 2.)

Passing now from a description of the buildings, a few words may be said as to the general lines of treatment adopted. In order that the educational value of such an institution as this may be fully utilised great stress is rightly laid on a daily routine rigidly adhered to. To keep a number of male patients idle for the several months required for the arrest of the disease and the commencement of reparative processes has a most demoralising effect. Enforced relaxation from all work during this period unfits them for resuming employment when they return home. A most praiseworthy scheme has been mapped out by the medical superintendent which may well serve as an example for similar establishments. Each patient is required to do some amount of light work daily. The daily routine is as follows. The patients rise at seven and take a cold bath. An ingenious system has been established by which scrambling for the use of the bath-rooms is entirely avoided and perfect order is maintained. Breakfast is at 8.15; work out-of-doors from 10 to 10.45; then a quarter of an hour for lunch; the patients work again till 11.55. Then there is an interval of absolute rest, the patients lying on their beds till 12.45. Dinner is at this hour, after which comes another period of rest. More work follows from 2.50 to 4.15. After tea the patients can go into the rooms where tables are provided so that they can write letters or play games. Supper is at 7.15; subsequently the reading rooms and concert room are available and all lights must be out at 9 P.M. The lowest grade of exercise is walking round a "measured mile" at a slow pace. If the temperature is not raised by such a procedure then light work, such as carrying baskets containing gravel, mould, &c., is enforced and subsequently work requiring more exertion is allowed, such as making paths and certain operations connected with gardening. Smoking is allowed for a quarter of an hour after each meal but only on the main road inside the grounds; elsewhere it is strictly forbidden. The meals are carefully supervised but there is no system of forced feeding.

The committee of the Brompton Hospital may be congratulated on having obtained a most valuable addition to its charity. In the future no hospital for the treatment of pulmonary tuberculosis should be built in a town; country air is an essential part of successful treatment. It is also acknowledged that the neighbourhood of the sea is by no means requisite but a site the nature of which we have alread suggested should be chosen. We trust that funds will b forthcoming which will free the minds of those responsibl for the working of the institution from any anxiety, both a regards the upkeep of the sanatorium and of the paren hospital at Brompton.

FIG. 2.



General view of the building.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary Comitia was held on July 27th, Sir RICHARD DOUGLAS POWELL, Bart, K.C.V.O., the President, being in the chair.

The following gentlemen having passed the required examination were admitted as Members of the College: John Brian Christopherson, M.A., M.D. Cantab.; Lewis Augustus Clutterbuck, M.B. Durh.; Arthur Frederick Hertz, M.A., M.B. Oxon.; Conrad Meredyth Hinds Howell, M.A., M.B. Oxon., L.R.C.P. Lond.; Henry Percival Johnson, B.A. Cantab., L.R.C.P. Lond.; *Harold Campbell Parsons*, M.A., M.D. Toronto, L.R.C.P. Lond.; and William Morton Robson, M.D. Lond., L.R.C.P. Lond.

Licences were granted to 111 gentlemen who had passed the required examinations and conformed to the by-laws and regulations.

Diplomas in Public Health were granted to the following gentlemen: Jackson Arthur Atkinson, L.R.C.P. Lond., M.R.C.S. Eng.; Robert James Blackham (Captain, R.A.M.C.), L.R.C.P. & S. Edin., L.F.P. & S. Glasg.; Niel Campbell, M.B., C.M. Glasg.; Herbert Ernest Corbin, L.R.C.P. Lond., M.R.C.S. Eng.; Louis Courtauld, B.C. Cantab., L.S.A.; John William Fox, M.B. Lond., L.R.C.P. Lond., M.R.C.S. Eng.; James Alison Glover, M.D., B.S. Cantab.; Walter Lisle Taylor Goodridge, L.R.C.P. Lond., M.R.C.S. Eng.; Hermann Lauder Hamilton, M.B., B.S. Aberd.; Edwin Charles Hayes (Captain, R.A.M.C.), L.R.C.P. & S. Edin., L.F.P. & S. Glasg.;

Henry Holt, M.B., B.S. Vict.; Percy Samuel Lelean (Captain R.A.M.C.), F.R.C.S. Eng., L.R.C.P. Lond.; Norman Forbes MacLeod, M.B., B.S. Glasg.; James Meek (Major, R.A.M.C.), M.D., M.S., R.U.I.; John William Myler, F.R.C.S. Eng., L.R.C.P. Lond., M.D. Brux.; John Nightingale, M.D., M.S. Edin.; James Farquharson Powell, L.R.C.P. Lond., M.R.C.S. Eng.; John Elliott Robinson, L.R.C.P. Lond., M.R.C.S. Eng.; and Eugene Dunbar Townroe, L.R.C.P. Lond., M.R.C.S. Eng.

The PRESIDENT announced that the report of the plague committee had been presented to the Secretary of State for India and that the plague committee had been invited to wait upon him, when he expressed his gratitude to the Royal College of Physicians of London and announced his intention of forwarding the recommendations of the plague committee to India.

The PRESIDENT nominated Dr. G. R. Murray to deliver the Bradshaw lecture on Nov. 7th, the subject being Exophthalmic Goitre and its Treatment; and Dr. Norman Moore to deliver the two Fitzpatrick lectures on Nov. 9th and 14th —Lecture I. On John Mirfield (1393) and Medical Study in London during the Middle Ages; and Lecture II. On Dr. Edgar Browne (1644–1708) and the Education of Physicians in London in the Seventeenth Century.

The following communications were received:—

1. From the Clerk of the Privy Council (July 7th) inclosing a programme of an International Congress on Physio-Therapeutics to be held at Liége on August 12th next, and stating that if the College appointed a representative the Lord President would recommend him for credentials as a British delegate. The PRESIDENT nominated Dr. H. Lewis Jones as the representative of the College.

2. From the secretary of the Royal College of Surgeons of England reporting certain proceedings of its Council on July 13th.

3. From the chaplain of Bethlem Hospital asking leave to photograph the portraits in possession of the College of the Doctors Monro who were successively physicians to the hospital.

4. From Messrs. Hutchinson and Co., publishers, asking leave to reproduce, in a life of Queen Henrietta Maria by Miss Ida A. Taylor, the portrait of Sir Theodore Mayerne in possession of the College. In both cases leave was granted, subject to the reservation that the reproduction should be used for the purpose asked only.

On the nomination of the PRESIDENT and Council the following appointments were made:—Censors: Dr. Joseph Frank Payne, Dr. Norman Moore, Dr. Frederick Taylor, and Sir Thomas Barlow. Treasurer: Sir Dyce Duckworth. Emeritus registrar: Sir Henry Alfred Pitman. Registrar: Dr. Edward Liveing. Harveian librarian: Dr. Payne. Assistant registrar: Dr. Oswald Auchinleck Browne. Elected members of the Library Committee: Dr. Philip Frank, Dr. Norman Moore, Dr. Archibald Edward Garrod, and Dr. Humphry Davy Rolleston. Curators of the museum: Dr. Henry Charlton Bastian, Dr. William Cayley, Dr. Seymour John Sharkey, and Dr. John Abercrombie. Finance committee: Dr. F. de Havilland Hall, Dr. David Bridge Lees, and Sir Edwin Cooper Perry. Examiners: chemistry and chemical physics—Mr. John Millar Thomson, F.R.S., Mr. Frederick Thomas Trouton, F.R.S., Mr. Frederick Daniel Chattaway, Ph.D., D.Sc., and Mr. John Addyman Gardner, F.C.S., F.I.C.; materia medica and pharmacy—Dr. Cyril Ogle, Dr. John Henry Bryant, Dr. Joseph John Perkins, Dr. Francis Whittaker Tunnicliffe, and Dr. James Purves Stewart; physiology—Dr. Ernest Henry Starling, Dr. Bertram Louis Abrahams, and Dr. Leonard, Erskine Hill; anatomy—Dr. Peter Thompson and Dr. Robert Howden; medical anatomy and principles and practice of medicine—Dr. F. de Havilland Hall, Dr. Samuel Hatch West, Dr. Theodore Dyke Acland, Dr. George Newton Pitt, Dr. William Collier, Dr. Hubert Montague Murray, Dr. Norman Dalton, Dr. Frederick John Smith, Dr. Walter Essex Wynter, and Dr. John Rose Bradford; midwifery and diseases peculiar to women—Dr. Francis Henry Champneys, Dr. John Phillips, Dr. Edward Malins, Dr. William John Gow, and Dr. Thomas Watts Eden; public health—(Part I.) Dr. Arthur Pearson Luff and (Part II.) Dr. William Heaton Hamer.

Captain Leonard Rogers, I.M.S., elected a Fellow on April 27th last, being resident in Calcutta, was admitted *in absentia* and the seal of the College was set to his diploma.

Reports were received from Dr. C. Theodore Williams on a visit which he paid as representative of the College to the new buildings of the University of Birmingham, and from Dr. Frederick T. Roberts on his attendance as representative of the College at a Court of Governors of the University of Sheffield. In both cases they were thanked on the motion of the PRESIDENT.

Two reports, dated June 19th and July 10th, were received from the Committee of Management, recommending: (1) that the South African College, Cape Town, be added to the list of institutions recognised by the Examining Board in England for instruction in chemistry, physics, and biology; (2) that the University of Leeds be added to the list of universities whose examinations are accepted under the conditions of Paragraph II. Section III. of the Regulations in lieu of the First and Second Examinations of this Board; and (3) that Uppingham School, which has been visited by a member of the committee and reported as fulfilling the requirements of the Board, be added to the list of institutions recognised by the Examining Board in England for instruction in chemistry, physics, and biology. These reports were adopted.

The quarterly report of the College finance committee, the annual report of the library committee, the annual report of curators of the museum, and the report of the examiners for the licence on the results of the April examinations were received and adopted.

Books and other publications presented to the library were received and the thanks of the College were returned to the donors. Among them may be mentioned a first edition of Celsus' "De Medicinæ," given by Professor W. Osler, and some interesting books and papers from Miss Greenhill and Dr. W. H. Allchin.

The newly elected officers, examiners, and members of standing committees gave their faith to the College.

The PRESIDENT then dissolved the Comitia.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the council was held on July 27th, Mr. JOHN TWEEDY, the President, being in the chair.

It was resolved that diplomas of Membership should be issued to 103 successful candidates and that, jointly with the Royal College of Physicians of London, diplomas in public health should be issued to 19 successful candidates.

On the recommendation of the museum committee it was decided to purchase two additional tables for the display of anatomical specimens in the museum.

A report from the finance committee was received and approved. The chief points in the report are as follows:—The gross income of the College amounted to £25,755, being £1214 less than in the previous collegiate year; the expenditure of the College amounted to £23,025 or £1149 less than the expenditure of the previous year, therefore the balance of income over expenditure amounts to £2730 and is only £64 less than the balance last year.

Mr. Henry Morris was re-elected a member of the executive committee of the Imperial Cancer Research Fund.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8609 births and 4490 deaths were registered during the week ending July 29th. The annual rate of mortality in these towns, which had been 11·6, 12·9, and 13·4 per 1000 in the three preceding weeks, further rose last week to 15·0 per 1000. In London the death-rate was 14·3 per 1000, while it averaged 15·3 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 3·1 in Burton-on-Trent, 4·2 in Willesden, 4·5 in King's Norton, 5·9 in Ipswich and in Handsworth (Staffs), 6·2 in Hastings, 6·3 in Walthamstow, 6·4 in Croydon, and 6·7 in Tottenham; the highest rates were 20·0 in Salford, 21·7 in Stockport, 22·1 in Manchester, 22·3 in Rochdale, 22·6 in Hanley and in Sheffield, 23·7 in Liverpool, 24·0 in Merthyr Tydfil, 24·6 in Rhondda, and 30·7 in Bootle. The 4490 deaths in these towns last week included 1101 which were referred to the principal infectious diseases, against 388, 486, and 612 in the three preceding weeks; of these 1101 deaths, 861 resulted from diarrhœa, 82 from whooping-cough, 77 from measles, 33 from diphtheria, 26 from scarlet fever, 21 from "fever" (principally enteric), and one from small-pox. No death from any of these diseases was registered last week in Hornsey, Hastings, Bournemouth, Ipswich, Burton-on-Trent, King's Norton, or Tynemouth; while the highest death-rates from the principal infectious diseases were recorded in West Ham, Aston Manor, Stockport, Liverpool, Bootle, Barrow-in-Furness, Sheffield, Rhondda, and Merthyr Tydfil. The greatest proportional mortality from measles occurred in Wolverhampton, Barrow-in-Furness, and Sunderland; from scarlet fever in Bootle; from diphtheria in Barrow-in-Furness; from "fever" in Devonport; and from diarrhœa in West Ham, Aston Manor, Stockport, Birkenhead, Liverpool, Bootle, Sheffield, Rhondda, and Merthyr Tydfil. The mortality from whooping-cough showed no marked excess in any of the large towns. One fatal case of small-pox was registered in Derby but none in any other of the 76 towns. The number of small-pox cases remaining under treatment in the Metropolitan Asylums Hospitals, which had been five, four, and three at the end of the three preceding weeks, was again three at the end of last week; no new cases were admitted during the week, against two, two, and none in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, July 29th, was 2550, against 2499, 2520, and 2485 on the three preceding Saturdays; 352 new cases were admitted during the week, against 354, 356, and 304 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 90, 104, and 117 in the three preceding weeks, declined to 116 last week, and were two below the number in the corresponding period of last year. The causes of 48, or 1·1 per cent., of the deaths in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Leicester, Nottingham, Salford, Newcastle-on-Tyne, and in 45 other smaller towns; while the largest proportions of uncertified deaths were registered in Birmingham, Rochdale, Burnley, Preston, Bradford, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 14·7, 14·3, and 15·2 per 1000 in the three preceding weeks, further rose to 15·3 per 1000 during the week ending July 29th, and was 0·3 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·9 in Leith and 11·2 in Aberdeen to 19·1 in Dundee and 21·3 in Perth. The 513 deaths in these towns last week included 39 which were referred to diarrhœa, 14 to whooping-cough, eight to measles, and five to diphtheria, but not any to small-pox, to scarlet fever, or to "fever." In all 66 deaths resulted from these principal infectious diseases last week, against 57, 55, and 61 in the three preceding weeks. These 66 deaths were equal to an annual rate of 2·0 per 1000, which was 1·7 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 13, seven, and 22 in the three preceding weeks, further rose last week to 39, of which 20 occurred in Glasgow, six in Edinburgh, six in Dundee, and five in Paisley. The deaths from whooping-cough, which had been 26, 25, and 12 in the three preceding weeks, rose again to 14 last week, and included four in Glasgow and two each in Edinburgh, Dundee, Aberdeen, Greenock, and Perth. The fatal cases of measles, which had been 14, 19, and 21 in the three preceding weeks, declined again last week to eight, of which five were registered in Glasgow and three in Perth. The deaths from diphtheria, which had been three, one, and three in the three preceding weeks, further rose to five last week and included four in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 65, 65, and 62 in the three preceding weeks, rose again last week to 70, and were 15 in excess of the number in the corresponding period of last year. The causes of 13, or nearly 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 16·9, 19·7, and 20·1 per 1000 in the three preceding weeks, further rose to 20·8 per 1000 during the week ending July 29th. During the past four weeks the death-rate has averaged 19·4 per 1000, the rates during the same period being 12·5 in London and 16·1 in Edinburgh. The 151 deaths of persons belonging to Dublin registered during the week under notice were five in excess of the number in the preceding week and included 22 which were referred to the principal infectious diseases, against eight, 17, and 20 in the three preceding weeks; of these, 20 resulted from diarrhœa, one from measles, and one from "fever," but not any from small-pox, from scarlet fever, from diphtheria, or from whooping-cough. These 22 deaths were equal to an annual rate of 3·0 per 1000, the mean rates last week from the principal infectious diseases being 2·9 in London and 1·9 in Edinburgh. The fatal cases of diarrhœa, which had been six, 14, and 18 in the three preceding weeks, further rose last week to 20. The 151 deaths in Dublin last week included 51 of children under one year of age and 29 of persons aged 60 years and upwards; the deaths of infants exceeded the number in the preceding week, while those of elderly persons showed a slight decline. Six inquest cases and four deaths from violence were registered; and 51, or more than a third, of the deaths occurred in public institutions. The causes of six, or nearly 4 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: A. F. Harper to the *Dominion*, on commissioning; C. J. Mansfield to the *Racer*, for Osborne College; H. F. Iliewicz to R.N. Engineer College, Devonport; R. E. Biddulph to the *Cressy*; and F. J. Burns to the *Bacchante*, on recommissioning. Staff Surgeons: S. Conner to the *Cormorant* for Gibraltar Hospital; R. Hill to the *Renown*: P. H. M. Star to the *Roxburgh*, on commissioning; and T. W. Philip to the *Nelson*, on the *Roxburgh* commissioning. Surgeons: A. F. Fleming to the *Dominion*, on completing; A. B. Marsh to the *Hindustan*, on completing; F. F. Mahon to the *Excellent*; C. Shepherd to the *Pioneer*; and R. Waterfield to the *Colossus*, on the *Roxburgh* commissioning.

ROYAL ARMY MEDICAL CORPS.

Lieutenant H. W. Long to be Captain (dated May 19th, 1905).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant-Colonel W. L. Stewart having resigned his commission in the Volunteers, ceases to belong to the Army Medical Reserve of Officers (dated August 2nd, 1905). Surgeon-Captain W. A. Griffiths having resigned his commission in the Volunteers, ceases to belong to the Army Medical Reserve of Officers (dated August 2nd, 1905). Surgeon-Captain H. P. Job having resigned his commission in the Volunteers, ceases to belong to the Army Medical Reserve of Officers (dated July 29th, 1905). Surgeon-Major W. J. Harnett having resigned his commission in the Volunteers, ceases to belong to the Army Medical Reserve of Officers (dated July 29th, 1905).

VOLUNTEER OFFICERS' DECORATION.

The King has conferred the Volunteer Officers' Decoration upon the undermentioned officers of the Volunteer Force, who have been duly recommended for the same under the terms of the Royal Warrant (dated July 25th, 1892):—*Eastern Command*: *Rifle*: 2nd Volunteer Battalion the Queen's Own (Royal West Kent Regiment): Surgeon-Lieutenant-Colonel Henry William Roberts. *Medical Corps*: East Surrey Bearer Company, Royal Army Medical Corps (Volunteers): Major John James de Zouche Marshall. *Scottish Command*: *Rifle*: 1st Volunteer Battalion the Royal Scots Fusiliers: Surgeon-Lieutenant-Colonel William Sneddon. 1st (Ross Highland) Volunteer Battalion, Seaforth Highlanders (Ross-shire Buffs, the Duke of Albany's): Surgeon-Lieutenant-Colonel John Adam. *Volunteer Rifle Corps*: 5th (Glasgow Highland) Volunteer Battalion, the Highland Light Infantry: Surgeon-Major Angus Macphee. *Northern Command*: *Artillery*: 1st Lancashire Royal Garrison Artillery (Volunteers): Surgeon-Major Thomas Moore Dawson. *Rifle*: 2nd Volunteer Battalion the East Lancashire

Regiment: Surgeon-Lieutenant-Colonel Andrew Alexander Watson.

EXAMINATION FOR COMMISSIONS IN THE ROYAL ARMY MEDICAL CORPS.

The undermentioned gentlemen, 17 of whom possess university degrees, were successful at the recent examination in London for commissions in the Royal Army Medical Corps for which 60 candidates entered:—

Names.	Marks.	Names.	Marks.
John Allan Anderson ...	582	Percy Farrant	479
Cuthbert Garrard Browne	577	Albert Edward Francis Hastings	479
Hugh Godwin Sherren ...	568	George William Webb Ware...	474
Henry Horace Andrews Emerson	560	Michael Balfour Hutchison Ritchie ...	473
Wallace Benson	549	James Stuart Dunne ...	470
Rowland Philip Lewis ...	548	William McConaghy ...	466
George Edward Ferguson	543	Francis Cornelius Sampson	461
James Herries Graham ...	538	Charles Francis White ...	461
Charles Ernest White Spinner Fawcett	529	Cecil John Wyatt	453
Thomas Scatchard	519	Wilfrid Cowan Nimmo ...	450
Ronald Anderson Bryden	502	Edmund Thurlow Potts	448
Arthur Edmund Stewart Irvine	499		445
Thomas Bettesworth Moriarty	499		445
Alexander Macgregor Rose	499		441
Edward Lawton Moss ...	497	Arthur James Arch ...	439
Edward Guy Anthonisz...	495	Thomas Somers Blackwell	439
Griffith Henry Rees ...	495	Harold Edgar Priestley...	439
Vivian Hood Symons ...	484	Alan Cuncliffe Vidal ...	426
Walter John Weston ...	482	Philip Jauvrin Marett ...	425
Mortimer John Cromie...	480	Hugh Stewart	423

INDIAN MEDICAL SERVICE EXAMINATION.

The following gentlemen, eight of whom possess university degrees, were successful at the examination for admission to the Indian Medical Service held on July 25th and four following days:—

Names.	Marks.	Names.	Marks.
C. E. Palmer	3407	W. D. Wright	3164
C. H. Reinhold	3395	V. N. Whitamore	3158
A. F. Hayden	3348	J. F. Boyd...	3150
B. E. M. Newland	3303	N. S. Sodhi	3081
E. J. C. McDonald... ...	3278	J. Catto	3054
L. A. H. Lack	3273	W. C. Gray	3041
K. W. Mackenzie	3187	W. J. Powell	3034

Forty-two candidates (27 of whom had university degrees) competed for the 14 vacancies.

THE WAR IN THE FAR EAST.

The *Russkoe Slovo* states that the late commander-in-chief of the Manchurian army, General Kuropatkin, having proposed that the members of the staff of the provincial detachments should be decorated, the members of the medical profession and the field surgeons opposed the idea. Since then the new commander-in-chief, General Linievitch, raised the proposal again expressing his wish that medical men, field surgeons, and sisters of mercy belonging to the provincial sanitary detachments working south of Gundzhulin should be rewarded. His proposal has met with the same reception as that of his predecessor, for the major portion of the provincial sanitary and medical men insist that the only reward for what they may do must be consciousness of duty done.

Surgeon-General Sir Benjamin Franklin, K.C.I.E., I.M.S., has been appointed a Knight of Grace of the Order of St. John of Jerusalem in England.

Correspondence.

"Audi alteram partem."

THE CAUSE OF SENILE DECAY.

To the Editors of THE LANCET.

SIRS,—Under a perfect system one would expect man right to the end of his mortal career to grow in strength and wisdom, passing from higher plane to higher plane. But it has been ordained that, having reached his zenith, he shall slowly retrograde and with ever-waning powers totter to the grave. What, I would ask, are the pathological—or, as I would prefer to say, "physiological"—causes of this senility? Does the organism wear out like any other piece of machinery? Or are we to suppose that with advancing years its energies become spent, as in a piece of clockwork slowly running down? Or, again, can we explain the phenomena of senility simply as being part of a vital cycle, the cellular elements of the tissues tending, through inherent proclivities impressed upon them by heredity, to pass through a definite cycle of which senile decay is the final phase?

A little consideration will show that we cannot in any of these ways fully explain the occurrence of senile decay. If this were simply a process of wearing out it should surely start with the beginning of active life, whereas, as a matter of fact, it is precisely during the active early years of life, when on this view wear and tear should be greatest, that the tissues, far from wearing out, actually improve in structure. It is, moreover, impossible thus to explain the varying ages at which senility makes its appearance in different species. A dog, e.g., becomes senile at an age when the human is not yet half mature and it is barely conceivable that the cells of this animal should have an inherent tendency to wear out long before those of man have reached maturity. No, the animal organism does not wear out like a tin pot or a pair of boots. The view that senility is due to an exhaustion of vital energy may be at once dismissed, founded as it is on an altogether false analogy, for in the matter of energy there is no real analogy between a living organism and an inanimate machine. Finally, the assumption that the tissues become senile owing to an inherent tendency determined by heredity does not explain those remarkable cases of premature senility in which the hair turns grey, the skin wrinkles, and the arteries become brittle before the normal age of puberty has been reached. It cannot seriously be contended that such cases are due to an innate tendency for the individual cells of the body to become prematurely senile: there must be some coördinating mechanism at work.

We cannot, I repeat, fully explain the phenomena of senility in any of the ways suggested. A much more probable explanation is that the organism in large measure brings about its own senility—that, in fact, it deliberately and of set purpose commits slow suicide with the object of limiting its existence, the limit thus imposed being definite for each species and one most conducive to the welfare of the species, and that the self-destroying instrument strikes chiefly through the blood plasma. In considering the causation of senile decay we must think of the organism as made up of a number of cells—nerve cells, muscle cells, gland cells, and the rest. Now it is evident that the senility of the organism as a whole is due to the senility of its constituent cells, and the contention is that these latter become senile not so much from causes resident in themselves as because with advancing years the plasma environing them alters in composition, and by virtue of this altered composition—as well as alterations in respect of the plasmic circulation—sets on foot that gradual dissolution of cell organisation which characterises old age.

If the various cells of the body were at shortly recurring intervals replaced by new descendants it is clear that the tissues would retain their youth throughout life but, as a matter of fact, the more highly organised cells, such as those of nerve, muscle, and (most) glands, cannot give birth to new cells; those originally laid down in embryo last for the lifetime of the individual and thus have ample time for "growing old." Now, though doubtless there is an inherent tendency for all cells ultimately to become senile, it is probable that they have also a tendency to immortality. I cannot but think that the fate of the tissue cells, both in respect of development and decay, is less dependent upon unaided developmental proclivity and more upon environmental influences than we are wont to suppose. Certainly the growth and development of the individual are largely due to specific influences operating through the blood plasma, influences which come into operation in definite sequences and *compel* the tissues to grow and develop along certain lines. Thus, if the thyroid gland fails to yield its proper secretion cretinism results; if the blood is bereft of a substance yielded by the pancreas the individual does not pass beyond the infantile stage of existence; and, again, in the absence of ovaries and testes the developmental changes characteristic of puberty do not take place.

But if this is true of growth and development why should it not also be true of decay? In point of fact I believe it is, and that if the tissues were to continue throughout life to be flushed with healthy juvenile blood they would retain to extreme age much of their youthful nutritional vigour; and contrariwise, that if the tissues of the child were fed with senile blood (as actually happens, I would suggest, in cases of premature senility) they would forthwith tend to undergo senile degeneration. On this view a man grows old because his blood grows old, the organism being slowly destroyed by means of the blood plasma.

We do not yet know the nature of the changes which the blood undergoes with advancing years but we may be quite sure that they are of a definite kind and that the age of the individual is written as plainly in his blood as in his tissues. I believe it will be found that modifications in respect of internal secretions figure largely in these changes. We have seen that the internal secretions play an important part in determining growth and development and my own observations lead me to believe that normal senile degeneration is largely brought about in the same way. But the blood of the aged also undergoes other changes. It tends to get poor in quality, to be deficient in hæmoglobin and foodstuffs, and to contain an excess of excretory material, while from failure in the circulatory system its supply is apt to be defective. These are all additional factors in bringing about senile decay and as they are, to some extent, under our control we have it so far in our power to retard that decay. More than this we can scarcely hope to do until we possess a more intimate knowledge of the composition of senile blood, and it is doubtful whether even this knowledge would enable us to do much to lengthen man's days. The most effective way of doing this would be to allow only those belonging to long-lived families to propagate the race. In this way the span of life might be extended almost indefinitely.

Metchnikoff's contention that senility is in great measure due to the absorption of poisons from the large bowel is, in my belief, untenable. Were it true the individual ought to begin to get senile immediately after birth, whereas under normal conditions no senile changes occur during the years of developmental life, or, indeed, for some time afterwards. The fact is that senility does not begin until the senile-producing mechanisms come into play. The assumption that the human large bowel is wholly redundant gives nature the credit for being a bungler indeed. Can anyone seriously maintain that a child coming into the world with his ileum terminating at the anus would develop into a more vigorous being, enjoy better health, and live longer than if he had been endowed with the normal length of digestive tube?

I am, Sirs, yours faithfully,

Wimpole-street, July 23rd, 1905. HARRY CAMPBELL.

THE INCREASE OF CANCER AND THE USE OF ALCOHOL.

To the Editors of THE LANCET.

SIRS,—In a leading article in a recent issue of THE LANCET you refer to the discussion by the Life Assurance Medical Officers' Association of the problems of cancer mortality. May I ask space for some further comments on a subject of such engrossing interest? As regards the increase of cancer, real or apparent, it is doubtless scientifically right to treat this as still *sub judice*. The Imperial Cancer Research Fund will, I hope, soon announce its conclusions. In the meantime, to the plain man the evidence strongly points to the reality of the increase, and it will be wise to accept this as a fact for practical purposes. When the deaths from any disease in both sexes increase during a long course of years, so that the rates of mortality calculated upon them with all known precautions against fallacy and allowance for change in age distribution of the population show an increase, uniform, progressive, and considerable, the plain man will believe that the increase in the fatality of that disease is a real one. When a general tendency to increase is also reported from other registering countries, including our colonies, continuous in the case of most countries, "fluctuating but progressive" in Ireland, the Netherlands, and New Zealand,[1] this conclusion is strengthened. An augmentation in the course of 30 years of 147 per cent. for males and of 74 per cent. for females in the corrected mortality-rate of cancer[2] is not readily to be explained by improved diagnosis and certification. The last year for which returns have been published (1903) confirms the tale. There is a substantial increase in the corrected mortality from cancer upon the average of the five preceding years in both sexes and in both urban and rural counties. The rates for 1903 are the highest on record.[3] Surgical procedure has during the past 30 years greatly advanced, many more lives of cancer patients have been saved, and very many more have been lengthened. This should have diminished the mortality. The onus of proof lies, I think, heavy on those who would deny the reality of the increase. Until wholly new evidence has been produced we shall do well to accept Dr. J. F. Payne's masterly summing up of the question[4] and to act upon the conclusion that we have to deal in medical practice to-day with the momentous fact of an *actual* and *progressive* increase of cancer in the community at large.

Your article alludes to the relation of the use of alcohol to cancer. It was venturesome on my part to raise this question before the Life Assurance Medical Officers' Association because it is so easily misunderstood. Any primary causal relationship between the use of alcohol and cancer is out of the question. Teetotallers are by no means exempt from the disease. But the use or abuse of alcohol may nevertheless have a secondary influence. There are grounds for a suspicion that this is the case. Let me state a hypothesis. I shall be unable to prove its truth but I can state *primâ facie* evidence of its probability. "The extended use of alcohol during the past half century has promoted the occurrence of cancer of the digestive tract and has thus been one cause of the increased mortality from cancer."

A brief outline of the evidence is as follows: 1. "56 per cent. of the total mortality from cancer is due to carcinoma of the digestive organs."[5] The progressive increase in the cancer death-rate has been especially noticeable in cancer of these organs. Dr. Payne establishes this from the Reports of the Registrars-General for England and Wales (1868 to 1888) and for Ireland (1887 to 1897), and from statistics of St. Thomas's Hospital.[6] Dr. W. S. Lazarus-Barlow and Dr. Gordon Taylor found the same fact in those of the Middlesex and St. George's Hospital.[7] Personal clinical experience confirms this. Mr. Rutherford Morison, surgeon to the Royal Infirmary, Newcastle-upon-Tyne, writes in THE LANCET of June 17th: "So far as my own experience goes, the increase is largely in cases of cancer of the gastro-intestinal tract." 2. The consumption of alcohol has much increased during the last 50 years, coincident with the greater prosperity of the people. 3. Occupations associated with the free use of alcohol show a high liability to cancer. This is proved by the statistics of occupation mortality from cancer given by the Registrar-General (1881–1890) and quoted by Dr. Payne, in which he shows that commercial travellers, inn servants, innkeepers, and brewers die from cancer at rates from 30 to 50 per cent. above the average of occupied males. 4. There is reason to think that persons who abstain from alcohol have an average lower death-rate from cancer than those who take alcohol. Dr. A. Newsholme's statistics[8] on this head, to which you allude, comprise three years' cancer mortality amongst assured male lives in the United Kingdom Temperance and General Provident Institution. He found that the cancer death-rate of the abstainers from alcohol, calculated upon the lives at risk and adapted to a "standard million" of population, was 72 per cent. of the death-rate of non-abstainers. Two things have to be noted here. One is that the figures are small—47 deaths of abstainers and 78 of non-abstainers registered as due to malignant disease. Another fact is that the death-rate of abstainers from all causes in that institution follows the same course as the cancer death-rate, being less than that of non-abstainers in almost exactly the same proportion. The difference may, again, be caused by the presence of a few intemperate persons amongst those who take alcohol. 5. There is an impression derived from clinical experience that free alcohol-drinkers are especially liable to cancer of the digestive organs. It is difficult to submit evidence of this. Some figures which I placed before the Life Assurance Medical Officers' Association are of this nature but they are too small to be conclusive. They were taken from carefully verified life assurance records and formed part of mostly consecutive series of 2000 deaths from all causes. There were 114 males dying from malignant disease. I divided them into three groups: 41

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[1] Registrar-General's returns, England and Wales, 1903, p. xxxviii.

[2] Dr. J. F. W. Tatham, THE LANCET, March 15th, 1902, p. 745.

[3] Returns cited, p. lxiii.

[4] THE LANCET, Sept. 16th, 1899, p. 765, and elsewhere.

[5] Dr. Payne, THE LANCET, April 5th, 1902, p. 968.

[6] THE LANCET, Sept. 16th, 1899, p. 768.

[7] Transactions of the Life Assurance Medical Officers' Association, 1905, p. 155.

[8] Brit. Med. Jour., 1903, vol. ii., p. 1529.

abstainers, 29 uncertain, and 44 users of alcohol. The disease was located in the alimentary tract in 34 per cent. of the abstainers, in 48 per cent. of the uncertain class, and in 64 per cent. of the drinkers. Thus in those who took alcohol (and a few of these would probably be intemperate) the digestive tract proved to be much more often the site of the disease than in those who abstained.

It will be conceded that the hypothesis that the extended use of alcohol has increased the number of cases of cancer of the alimentary tract would explain the facts that I have put forward. Nor is it difficult to believe that the continual application of alcohol to the digestive canal, producing as it does congestion of its lining membrane, would promote any existing tendency to that localised cell-proliferation which is an essential feature of malignant growth. No one, however, is more ready than myself to admit that this is only a hypothesis. Reasonable hypotheses, however, are valuable, since, as Sir William R. Gowers remarks, even when they prove erroneous their disproof always involves addition to our knowledge. I hope that fuller observations will be made by those who have the opportunity of doing so. Reverting to the phenomenon of cancer increase, if we glance back to the early part of last century we see three chronic diseases acting as scourges of civilised man—tubercle, cancer, and syphilis. Of tubercle we have learnt much since then both as to its nature and remedy. Cod-liver oil was introduced into Britain by Dr. Hughes Bennett in 1841, Koch discovered the bacillus in 1882, and the open-air treatment has been developed of recent years. We can now often cure and, what is better, prevent, and in consequence the tubercle death-rate has greatly fallen. The nature and course of syphilis have been demonstrated by a long line of illustrious men. The discovery and use of the alkaline iodides and the definition of the place of mercury in treatment, especially by Mr. J. Hutchinson's classical paper before the Hunterian Society in 1874, have disarmed the disease of much of its venom. The human wrecks, riddled with syphilis of skin and bone, which I saw so often when a student 30 years ago, are met with now but seldom. Far different is it with cancer, of the nature and cause of which we have little more knowledge—knowledge that is fruitful of practical outcome—than in the days of Baillie. Our remedy is still the knife alone, that last resort of art, extirpating what it is powerless either to prevent or to control. Thus two of these diseases have yielded much of their virulence to the advance of science. Can it be that cancer attacks some subjects of lesser resistance which now escape the other diseases? Or is there a struggle for existence amongst diseases and when two are partly worsted a third may prosper?

I am, Sirs, yours faithfully,

Weymouth-street, W., July 11th, 1905. R. HINGSTON FOX.

BRITISH MEDICAL ASSOCIATION: ANNUAL MEETING AT LEICESTER.

To the Editors of THE LANCET.

SIRS,—In your very full report in THE LANCET of July 29th of my remarks made at the opening of the discussion on the Surgical Treatment of Non-malignant Diseases of the Stomach there is one mistake. On page 327, column 2, the first sentence reads:—

> In one case Mr. Moynihan recognised the existence of an hour-glass stomach but failed to see that the stomach was trifid and so the operation failed of its purpose.

The case of trifid stomach was recorded in THE LANCET of August 8th, 1903, p. 388, and was given in detail on p. 169 of the pamphlet which I distributed at the meeting. The report received with regard to this patient in June, 1905, was that she was "completely cured, had gained 2 stones in weight, and could eat anything."

I am, Sirs, yours faithfully,

Leeds, July 29th, 1905. B. G. A. MOYNIHAN.

To the Editors of THE LANCET.

SIRS,—I regret to notice that in your report of the proceedings in the State Medicine Section I am represented as having said that I felt the necessity for an inquiry concerning the value of hospital isolation in the case of other infectious diseases than small-pox. Will you allow me to correct this report and to say that I did not express and do not hold this opinion?

I am, Sirs, yours faithfully,

PHILIP BOOBBYER,
Nottingham, July 29th, 1905. President of State Medicine Section.

A NEW CHLOROFORM AND ETHER REGULATING INHALER.

To the Editors of THE LANCET.

SIRS,—I have read with interest Mr. Harvey Hilliard's account of his new chloroform and ether regulating inhaler in THE LANCET of July 29th, p. 296. Unfortunately, "comparisons are odious," and the comparisons he draws between the Vernon Harcourt inhaler and his own being distinctly unfavourable to the former perhaps room will be found in your columns for an expression of opinion by one who knows neither party and who has no interest in either invention. True, I cannot speak of Mr. Hilliard's invention, for I know nothing of it beyond what I have learned from his own lucid account in your pages. What, then, can I say? This: for nearly a quarter of a century I have been administering anæsthetics with greater or less frequency to all kinds and classes of patients under all sorts of conditions by means of all forms of inhalers, from the simple towel of Edinburgh to the more imposing and impressive machinery becoming one who earns his daily bread as an anæsthetist. I am not going to say when I passed my millennium but hitherto I have not had a death. This I mention to explain my increasing feeling of nervousness. It may be stupid but I felt that with every case my turn was drawing nearer. So strong did the feeling become that I began to avoid calls to give an anæsthetic. How relieved I was when I heard of Vernon Harcourt I cannot express here, especially as I had a very nervous patient whose friends objected to an operation because one of their circle had died under an anæsthetic and from a certain likeness between the two they were certain that it would be fatal in this case also. The operation was necessary. The patient would have no other anæsthetist. With the Vernon Harcourt inhaler I had not the least anxiety. The anæsthesia was light but perfect and the patient awoke saying, "Why don't you begin?"

In the case of a nervous lad to whom I had given chloroform with a Junker's inhaler (he took it very badly) I was asked to give it again for an operation (removing a tumour in the region of the parotid and submaxillary glands) which would be lengthy and require the utmost quietude. I began in the usual way with pure air until he got accustomed to breathing quietly, then by moving the index finger one mark every minute (by the watch) in seven minutes I had him completely under and for a whole hour by the watch he made not a single movement. Yet the anæsthesia was light. With it I have given chloroform to twins a few months old for phimosis. In fact, I have used the Vernon Harcourt inhaler in a fairly representative set of cases with the utmost comfort and safety to my patients and pleasure to myself. Nor can I say more than if I needed an anæsthetic for myself—a thing I confess I have always dreaded—I should feel no anxiety if the Vernon Harcourt inhaler were used.

I have dwelt on these preliminary points to show that I am not ignorant of what I am writing about. 1. That the apparatus is cumbersome. I have not found it so. Sometimes I have it hung on the wall and the vapour conveyed to the mask by a tube. 2. That it is inconvenient. Not if one learns to hold it aright. I have used it in the most awkward positions and cannot assent to this statement. 3. That the air-ways are restricted by right-angled bends. Theoretically that sounds feasible but practically I have not found it so. It was marvellous how the valves responded to the respiratory movements of a tiny and fragile infant. And what a help it is to hear or to see these valves. I remember at a discussion on chloroform at the Royal Medical and Chirurgical Society how emphatically the great authorities in those days laid it down as a principle that one must watch the respirations keenly. It struck me the more forcibly because Sir Lauder Brunton almost commanded us to have our "Junkers" fitted up with a feather indicator. And although the mask I used in the case of the twins was far too big for their tiny faces, yet "click-click" went the valves and with that sound in my ears I was happy. 4. That it is incapable of giving a sufficient dose of chloroform. Knowing what I know now I would not give 4 per cent. of chloroform vapour for all the fees I get. And with the "increase tube" and a careful handling of the vessel one can give up to that through the Vernon Harcourt inhaler. I have not used it in 1000 cases but the cases I have used it in have been, as I said, fairly representative and I have not used the "increase tube" once. Several times accustomed to other methods I have felt that I must use it, but by attending to my business I discovered that was simply because I had not fulfilled the conditions of success.

I have no doubt but that Mr. Hilliard's instrument is an admirable one and I regret that I must say—judging from his lucid description and the picture accompanying it—I prefer something I can easily hold in my hand to an inhaler fixed on a board which has to be fixed under the mattress; something I can hang up near me to an instrument that needs a table *for its accommodation*; something that by its "click-click" tells me the respirations are all right and at a glance that oxygen as well as chloroform is reaching the lungs. For, as he truly says, "chloroform can never be quite safe." Is anything quite safe ever in excess? I am, Sirs, yours faithfully,

DAVID ANDERSON-BERRY, M.D., F.R.S. EDIN.

July 31st, 1905.

THE USE OF PHENYLHYDRAZIN IN THE EXAMINATION OF URINE.

To the Editors of THE LANCET.

SIRS,—I regret having overlooked the point to which Dr. P. J. Cammidge refers in THE LANCET of July 29th, p. 316. In his article in your issue of July 1st it certainly seemed to me that he was advocating the rapid method of using this test. I am aware that operating with aqueous solutions is not quite the same as is the case with a urinary solution, but even in this latter case I find that if 0·3 gramme of maltose or lactose be dissolved in 100 cubic centimetres of normal urine and the phenylhydrazin test be then applied, an appreciable deposit of osazone crystals results if the water bath be used, whilst boiling over the free flame for five minutes elicits no response at all. With regard to dextrose I have repeatedly found that if the urine contained but a very small quantity a positive reaction could almost invariably be relied on after 30 minutes of the water bath, but this was by no means the case with the rapid method. Further, I have had the same experience when using Dr. Cammidge's own test for pancreatic urine.

I am, Sirs, yours faithfully,

L. C. S. BROUGHTON.

Langley-green, Birmingham, July 31st, 1905.

TEMPORARY FIXATION OF AN IMPERFECTLY DESCENDED TESTIS TO THE THIGH.

To the Editors of THE LANCET.

SIRS,—I have read with much interest Mr. C. B. Keetley's further account of his procedure as given in THE LANCET of July 29th, p. 279. I have no doubt whatever that an imperfectly descended testis has, in the great majority of cases, some value. If it lie within the abdominal cavity I believe it has a greater value than if it has been arrested in the inguinal canal or high in the scrotum. Seeing that one has so constantly to operate for the hernia, potential or actual, which is nearly always present, what should be done with the retained testis is a matter of moment. If it is of value it should not be removed. If it can be brought down into, and *kept* down in, the scrotum this has undoubted advantages. But there are very few cases in which this permanent position is attained. Mr. Keetley does not state in how many it occurred in his 25 cases, but merely "the testis generally remains permanently in the scrotum but near its root." I am not sure what is meant by the "root of the scrotum," but I am sure that a testis placed at the level of the root of the penis is little if at all better off than one in the inguinal canal. Again, Mr. Keetley asks the question, "Do these testes grow when brought down in the scrotum?" and he answers, "Undoubtedly some of them do but not to the size of normal testes." Again, he does not give numbers, and accurate statistics are what is needed on this interesting question. I, personally, have never seen a testis *increase* in size after being artificially brought one inch or so lower down—that is, into the upper part of the scrotum. If any have done so I do not believe that their forcible displacement has had anything to do with their subsequent enlargement. On the other hand, I have seen many testes both in my own practice and in that of other surgeons *diminish* in size after being pulled down. Further, I am at variance with Mr. Keetley when he says that a testis just below the superficial abdominal ring—that is, just below the inguinal canal—is in a comfortable position. My experience is that testes which have reached this position naturally, but have been arrested there, are very apt to be drawn up at times against and through the pillars of the opening, whereby much pain is caused, and that even when no actual hernia exists. To fix a testis artificially here is to leave it subjected to these pulls during the movements of the abdominal muscles and to leave the patient liable to intermittent suffering. Mr. Keetley has been fortunate not to come across such a condition. I have and have had several times to remove the testis for it. But if the testis is of value and cannot be satisfactorily brought down and should not be removed there is still another procedure which may be adopted. This is to return it, after it has been freed if necessary, within the abdominal cavity. I have never regretted doing this. The testis is placed, like the ovary, in a comfortable position, the inguinal canal can be completely closed, and there is only a mythical increased tendency for it to become the site of malignancy. I find more and more surgeons are adopting this simple method and with the most gratifying results.

I am, Sirs, yours faithfully,

Harley-street, W., July 29th, 1905. W. McADAM ECCLES.

THE TREATMENT OF FRACTURED RIBS.

To the Editors of THE LANCET.

SIRS,—The treatment of fractured ribs by strapping is probably less satisfactory to the patient than to the surgeon. From personal experience it seems so to me. When in South Africa I had three ribs and a shoulder-blade fractured. I was well strapped in routine fashion but was relieved for a short time only, the strapping only too soon becoming loose. Pain prohibited me from lying in bed, doubtless owing to the fractured shoulder-blade, at that time not diagnosed. It then occurred to me that fixation by something resembling a stays would be an improvement upon the old method. A simple binder on these lines made of stiff jean I had made, fitted to lace up at the back and tie in front. Shoulder bands (of tape) also to tie at convenience kept the binder in position. The objection naturally raised to this treatment would be that it was a restraint not only on the injured but also on the uninjured side of the chest and calculated to interfere with the breathing. As a subject of spasmodic asthma from early childhood I can only say that it does not appear to be so. The relief obtained from the home-manufactured stays was enormous and I had no dyspnœa. As far as the ribs were concerned the treatment was entirely satisfactory.—I am, Sirs, yours faithfully,

FRANK ELVY, M.R.C.S. Eng., L.R.C.P. Lond.

Broadwindsor, July 31st, 1905.

FREE MEALS, CLOTHES, AND MEDICAL TREATMENT FOR THE SCHOOL CHILDREN OF BRUSSELS.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Brussels, July, 1905.

THOUGH the agglomeration of independent boroughs which is called Brussels is very small as compared to the metropolis of London, the city of Brussels is very much larger than the City of London. The *agglomération Bruxelloise* may count some 600,000 inhabitants, a third of whom live in the city of Brussels itself. It is not a third or even a thirtieth part of the inhabitants of the metropolis that live in the City of London. In any case, whatever the historic city of Brussels has done is a matter of importance throughout Belgium and often serves as an example for the whole nation. In view of the physical degeneration of certain sections of the population not only in England but in all industrial countries, and of the fact that on all sides there is a very general conviction that better care must be taken of the children in the primary schools, I have made some inquiries as to what has been done here. Unfortunately for many years Belgium has been distracted by a fierce conflict for and against clericalism. The cause of education has consequently suffered greatly. There are two sorts of schools—the "free school," managed by the priests, and the communal school, managed by the municipalities. About the latter every possible information is forthcoming; every farthing spent is accounted for and vital statistics are forthcoming so that some information is at hand in regard to the health of the pupils. As for the free schools, the less said about them the better pleased are those who are interested in their maintenance. It is only when infective disease exists among the pupils that the authorities have a right of entrance to these schools and this right is derived from the laws which the French Republic established in Belgium in 1793. In such circumstances the only information available that would be of use for anything like a scientific investigation is that supplied by the local authorities concerning their own schools. Education in Belgium, though widespread, is not universal and there are still a good many children who do not go to school at all. This is notably the case with girls who are frequently kept at home to help in the household work. Nevertheless, in the primary schools of Brussels much the same problems arise as those which have puzzled the education authorities in London and all the great industrial centres. It is evident, in Brussels as in London, that a certain number of children are insufficiently fed and are wanting in clothes, while others are absolutely deficient in health, stamina, and mental and physical development. It must further be recorded that in spite of the gravity of such a state of affairs no very heroic remedy has been attempted. Nevertheless, a good deal of steady work has been done, though reforms were introduced gradually and in detail and there has been no sweeping and sensational legislation.

A peculiar feature about such attempts as have been made is the fact that whereas in England the cry that the children must be fed has gone forth with swelling strength and volume, in Brussels it would seem as if greater attention is bestowed on the necessity of clothing the children. In any case the official reports show that during the school year 1903–04 the number of children frequenting the communal schools of the city of Brussels for primary, secular, and gratuitous education amounted to 13,994. From Nov. 16th, 1903, to March 26th, 1904, these children received 318,699 helpings of soup and 307,609 rations of bread. This was not given to all of the children but to 2691 out of the number or, roughly speaking, to one out of every five children. So that this might be done the municipality of the city of Brussels gave a subvention of £400. It also gave a soup subvention of £200 to the free schools—that is to say, to the clerical schools. It should further be mentioned that 679 little children attending kindergarten schools were likewise fed. On the other hand, and during the same year, no less than 2107 complete suits of clothes and 14,580 various articles of clothing were given to 7963 pupils attending the communal schools. Thus, putting the matter in round numbers, one out of every five children was assisted with gifts of food and one out of every two children with gifts of clothing. This is certainly very different from what is in contemplation in England where the question of clothes has scarcely been raised. A number of different charities and committees work to collect some of the money necessary to provide these clothes. Then when fairs are held the municipality charges the holders of booths, stalls, &c., a certain rent. A portion of the money thus received is devoted to the purchase of clothes for the school children. Moreover, the municipality supplies at the public cost raw material to the schools and the children are taught sewing, dressmaking, tailoring, and so on, by converting this material into clothes. In this manner 146 suits and 6771 different articles of clothing were made by the children themselves and were given to those among them who had need of these things. During the year various private charities supplied 1582 complete suits and 5428 articles of clothing, while 525 suits and 13,796 different articles of clothing were given by the municipality, that is to say, at the public cost. Still more was done for the little children who frequent the communal kindergartens. There are 3385 children inscribed and the average kindergarten attendance was 2848. Among these children private charity gave 218 suits and 2466 articles of clothing and out of the public purse they received 91 suits and 4224 articles of clothing. Private charity also distributed 3850 toys and 2649 gifts of sweets or of fruit to the kindergarten children. It cannot be said therefore that they have been neglected.

Perhaps the fact that the need of clothes is apparently greater than that of food may be due to the more orderly and economical disposition of the Belgian poor. Belgian women have more knowledge and skill with regard to their housekeeping than would usually be the case with a similar class of poor in England. It will then be easily understood that a well-ordered family, living on from 16*s*. to 20*s*. a week, may be able to give regularly the few pence daily required for each child's food but cannot afford an occasional outlay of several shillings to buy clothes. The parents might justifiably prefer to give sufficient food rather than to save money for the purchase of clothes. Thus in a well-kept household poverty manifests itself by the want of clothes rather than of food. This is possibly the reason why in Brussels more has been done in regard to clothing than to feeding the children. Doubtless if this clothing was not given and the parents were forced to spend the little money that they have in buying clothes, there would be more starvation among the children and consequently more food would have to be provided. So that the result would be somewhat similar in the long run.

Much more, however, is done than merely feeding and clothing the children. There is the all-important question of medical inspection and treatment. The schools of the city of Brussels are divided into six groups and each group has its medical officer. In normal times all the kindergartens, the crèches, and the classrooms devoted to primary education must be medically inspected twice each month. The classrooms for secondary education or technical education need be visited but once a month. In each class-room there must be a thermometer and a written record kept of the temperature and this must be countersigned by the medical officer. He must also examine the pupils from the physical and intellectual point of view and endeavour to foresee and to check any abnormal development or tendency to disease. What is qualified as "preventive medicine" (prophylactic), such as cod-liver oil, may then be prescribed at the public expense. A remarkable feature of this medical service is that the medical officers have to give lessons on hygiene to the senior classes—namely, children about 12 years old. At the beginning of each month they must deliver a simple lecture or explanation. Then the pupils must write an essay to show that they have understood what they have heard and the medical officer looks over these essays and repeats on the next occasion what the essays show has not been fully understood. The following are the subjects which the medical officers have to explain and to lecture upon: (1) cleanliness of the person, the clothes, and domestic utensils; (2) the house, its cleanliness, the dangers of damp, the soil, the building materials, and plan of dwellings; (3) air, foul air, and ventilation; (4) water, when pure, when polluted, boiling and filtration, use and abuse of water; (5) heat, fuel, and warming apparatus clothes and boots; (6) light, artificial and natural; (7) food, what constitutes wholesome food, adulteration of food; the moral, intellectual and physical degradation caused by alcoholism; (8) the excretions, care of the skin, mouth, hair, sight, and hearing; (9) exercise, work, play, gymnastics, and rest; (10) accidents, first care in cases of wounds, sprains, hæmorrhage, and poisoning; and (11) contagious and infectious diseases, prophylaxis, and disinfection. For primary schools this seems a fairly complete curriculum and if the pupils apply these lessons to their home life a very considerable and all-round improvement should result.

In regard to infectious disease when a child is absent from school the parent receives a letter inclosing a post-card, with printed questions about the child which he must answer and post. If the child is detained because of infectious illness the Bureau of Hygiene is at once informed and all children living with the patient are forbidden to go to school till after disinfection. The disinfection, of course, follows on the removal of the patient to the hospital or on death or recovery. Vaccination is not obligatory but during the year 2489 out of the 13,994 children were revaccinated, and this is a good number for revaccination is not offered till the children are nine years old. Apart from vaccination, "preventive" treatment was given to 3860 children out of the 13,994 and 3929 children were found to have defective teeth. Of these latter, 2251 presented themselves for treatment by the surgeon-dentist employed by the municipality to look after the school children. From the ailing or delicate children, 785 were selected and sent at the cost of the town either to the country or to the seaside where attending to my business I discovered that was simply because I had not fulfilled the conditions of success.

I have no doubt but that Mr. Hilliard's instrument is an admirable one and I regret that I must say—judging from his lucid description and the picture accompanying it—I prefer something I can easily hold in my hand to an inhaler fixed on a board which has to be fixed under the mattress; something I can hang up near me to an instrument that needs a table for its accommodation; something that by its "click-click" tells me the respirations are all right and at a glance that oxygen as well as chloroform is reaching the lungs. For, as he truly says, "chloroform can never be quite safe." Is anything quite safe ever in excess? I am, Sirs, yours faithfully,

DAVID ANDERSON-BERRY, M.D., F.R.S. EDIN.

July 31st, 1905.

THE USE OF PHENYLHYDRAZIN IN THE EXAMINATION OF URINE.

To the Editors of THE LANCET.

SIRS,—I regret having overlooked the point to which Dr. P. J. Cammidge refers in THE LANCET of July 29th, p. 316. In his article in your issue of July 1st it certainly seemed to me that he was advocating the rapid method of using this test. I am aware that operating with aqueous solutions is not quite the same as is the case with a urinary solution, but even in this latter case I find that if 0·3 gramme of maltose or lactose be dissolved in 100 cubic centimetres of normal urine and the phenylhydrazin test be then applied, an appreciable deposit of osazone crystals results if the water bath be used, whilst boiling over the free flame for five minutes elicits no response at all. With regard to dextrose I have repeatedly found that if the urine contained but a very small quantity a positive reaction could almost invariably be relied on after 30 minutes of the water bath, but this was by no means the case with the rapid method. Further, I have had the same experience when using Dr. Cammidge's own test for pancreatic urine.

I am, Sirs, yours faithfully,

L. C. S. BROUGHTON.

Langley-green, Birmingham, July 31st, 1905.

TEMPORARY FIXATION OF AN IMPERFECTLY DESCENDED TESTIS TO THE THIGH.

To the Editors of THE LANCET.

SIRS,—I have read with much interest Mr. C. B. Keetley's further account of his procedure as given in THE LANCET of July 29th, p. 279. I have no doubt whatever that an imperfectly descended testis has, in the great majority of cases, some value. If it lie within the abdominal cavity I believe it has a greater value than if it has been arrested in the inguinal canal or high in the scrotum. Seeing that one has so constantly to operate for the hernia, potential or actual, which is nearly always present, what should be done with the retained testis is a matter of moment. If it is of value it should not be removed. If it can be brought down into, and *kept* down in, the scrotum this has undoubted advantages. But there are very few cases in which this permanent position is attained. Mr. Keetley does not state in how many it occurred in his 25 cases, but merely "the testis generally remains permanently in the scrotum but near its root." I am not sure what is meant by the "root of the scrotum," but I am sure that a testis placed at the level of the root of the penis is little if at all better off than one in the inguinal canal. Again, Mr. Keetley asks the question, "Do these testes grow when brought down in the scrotum?" and he answers, "Undoubtedly some of them do but not to the size of normal testes." Again, he does not give numbers, and accurate statistics are what is needed on this interesting question. I, personally, have never seen a testis *increase* in size after being artificially brought one inch or so lower down—that is, into the upper part of the scrotum. If any have done so I do not believe that their forcible displacement has had anything to do with their subsequent enlargement. On the other hand, I have seen many testes both in my own practice and in that of other surgeons *diminish* in size after being pulled down. Further, I am at variance with Mr. Keetley when he says that a testis just below the superficial abdominal ring—that is, just below the inguinal canal—is in a comfortable position. My experience is that testes which have reached this position naturally, but have been arrested there, are very apt to be drawn up at times against and through the pillars of the opening, whereby much pain is caused, and that even when no actual hernia exists. To fix a testis artificially here is to leave it subjected to these pulls during the movements of the abdominal muscles and to leave the patient liable to intermittent suffering. Mr. Keetley has been fortunate not to come across such a condition. I have and have had several times to remove the testis for it. But if the testis is of value and cannot be satisfactorily brought down and should not be removed there is still another procedure which may be adopted. This is to return it, after it has been freed if necessary, within the abdominal cavity. I have never regretted doing this. The testis is placed, like the ovary, in a comfortable position, the inguinal canal can be completely closed, and there is only a mythical increased tendency for it to become the site of malignancy. I find more and more surgeons are adopting this simple method and with the most gratifying results.

I am, Sirs, yours faithfully,

Harley-street, W., July 29th, 1905. W. MCADAM ECCLES.

THE TREATMENT OF FRACTURED RIBS.

To the Editors of THE LANCET.

SIRS,—The treatment of fractured ribs by strapping is probably less satisfactory to the patient than to the surgeon. From personal experience it seems so to me. When in South Africa I had three ribs and a shoulder-blade fractured. I was well strapped in routine fashion but was relieved for a short time only, the strapping only too soon becoming loose. Pain prohibited me from lying in bed, doubtless owing to the fractured shoulder-blade, at that time not diagnosed. It then occurred to me that fixation by something resembling a stays would be an improvement upon the old method. A simple binder on these lines made of stiff jean I had made, fitted to lace up at the back and tie in front. Shoulder bands (of tape) also to tie at convenience kept the binder in position. The objection naturally raised to this treatment would be that it was a restraint not only on the injured but also on the uninjured side of the chest and calculated to interfere with the breathing. As a subject of spasmodic asthma from early childhood I can only say that it does not appear to be so. The relief obtained from the home-manufactured stays was enormous and I had no dyspnœa. As far as the ribs were concerned the treatment was entirely satisfactory.—I am, Sirs, yours faithfully,

FRANK ELVY, M.R.C.S. Eng., L.R.C.P. Lond.

Broadwindsor, July 31st, 1905.

FREE MEALS, CLOTHES, AND MEDICAL TREATMENT FOR THE SCHOOL CHILDREN OF BRUSSELS.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Brussels, July, 1905.

THOUGH the agglomeration of independent boroughs which is called Brussels is very small as compared to the metropolis of London, the city of Brussels is very much larger than the City of London. The *agglomération Bruxelloise* may count some 600,000 inhabitants, a third of whom live in the city of Brussels itself. It is not a third or even a thirtieth part of the inhabitants of the metropolis that live in the City of London. In any case, whatever the historic city of Brussels has done is a matter of importance throughout Belgium and often serves as an example for the whole nation. In view of the physical degeneration of certain sections of the population not only in England but in all industrial countries, and of the fact that on all sides there is a very general conviction that better care must be taken of the children in the primary schools, I have made some inquiries as to what has been done here. Unfortunately for many years Belgium has been distracted by a fierce conflict for and against clericalism. The cause of education has consequently suffered greatly. There are two sorts of schools—the "free school," managed by the priests, and the communal school, managed by the municipalities. About the latter every possible information is forthcoming; every farthing spent is accounted for and vital statistics are forthcoming so that some information is at hand in regard to the health of the pupils. As for the free schools, the less said about them the better pleased are those who are interested in their maintenance. It is only when infective disease exists among the pupils that the authorities have a right of entrance to these schools and this right is derived from the laws which the French Republic established in Belgium in 1793. In such circumstances the only information available that would be of use for anything like a scientific investigation is that supplied by the local authorities concerning their own schools. Education in Belgium, though widespread, is not universal and there are still a good many children who do not go to school at all. This is notably the case with girls who are frequently kept at home to help in the household work. Nevertheless, in the primary schools of Brussels much the same problems arise as those which have puzzled the education authorities in London and all the great industrial centres. It is evident, in Brussels as in London, that a certain number of children are insufficiently fed and are wanting in clothes, while others are absolutely deficient in health, stamina, and mental and physical development. It must further be recorded that in spite of the gravity of such a state of affairs no very heroic remedy has been attempted. Nevertheless, a good deal of steady work has been done, though reforms were introduced gradually and in detail and there has been no sweeping and sensational legislation.

A peculiar feature about such attempts as have been made is the fact that whereas in England the cry that the children must be fed has gone forth with swelling strength and volume, in Brussels it would seem as if greater attention is bestowed on the necessity of clothing the children. In any case the official reports show that during the school year 1903-04 the number of children frequenting the communal schools of the city of Brussels for primary, secular, and gratuitous education amounted to 13,994. From Nov. 16th, 1903, to March 26th, 1904, these children received 318,699 helpings of soup and 307,609 rations of bread. This was not given to all of the children but to 2691 out of the number or, roughly speaking, to one out of every five children. So that this might be done the municipality of the city of Brussels gave a subvention of £400. It also gave a soup subvention of £200 to the free schools—that is to say, to the clerical schools. It should further be mentioned that 679 little children attending kindergarten schools were likewise fed. On the other hand, and during the same year, no less than 2107 complete suits of clothes and 14,580 various articles of clothing were given to 7963 pupils attending the communal schools. Thus, putting the matter in round numbers, one out of every five children was assisted with gifts of food and one out of every two children with gifts of clothing. This is certainly very different from what is in contemplation in England where the question of clothes has scarcely been raised. A number of different charities and committees work to collect some of the money necessary to provide these clothes. Then when fairs are held the municipality charges the holders of booths, stalls, &c., a certain rent. A portion of the money thus received is devoted to the purchase of clothes for the school children. Moreover, the municipality supplies at the public cost raw material to the schools and the children are taught sewing, dressmaking, tailoring, and so on, by converting this material into clothes. In this manner 146 suits and 6771 different articles of clothing were made by the children themselves and were given to those among them who had need of these things. During the year various private charities supplied 1582 complete suits and 5428 articles of clothing, while 525 suits and 13,796 different articles of clothing were given by the municipality, that is to say, at the public cost. Still more was done for the little children who frequent the communal kindergartens. There are 3365 children inscribed and the average kindergarten attendance was 2848. Among these children private charity gave 218 suits and 2486 articles of clothing and out of the public purse they received 91 suits and 4224 articles of clothing. Private charity also distributed 3850 toys and 2649 gifts of sweets or of fruit to the kindergarten children. It cannot be said therefore that they have been neglected.

Perhaps the fact that the need of clothes is apparently greater than that of food may be due to the more orderly and economical disposition of the Belgian poor. Belgian women have more knowledge and skill with regard to their housekeeping than would usually be the case with a similar class of poor in England. It will then be easily understood that a well-ordered family, living on from 16*s.* to 20*s.* a week, may be able to give regularly the few pence daily required for each child's food but cannot afford an occasional outlay of several shillings to buy clothes. The parents might justifiably prefer to give sufficient food rather than to save money for the purchase of clothes. Thus in a well-kept household poverty manifests itself by the want of clothes rather than of food. This is possibly the reason why in Brussels more has been done in regard to clothing than to feeding the children. Doubtless if this clothing was not given and the parents were forced to spend the little money that they have in buying clothes, there would be more starvation among the children and consequently more food would have to be provided. So that the result would be somewhat similar in the long run.

Much more, however, is done than merely feeding and clothing the children. There is the all-important question of medical inspection and treatment. The schools of the city of Brussels are divided into six groups and each group has its medical officer. In normal times all the kindergartens, the crèches, and the classrooms devoted to primary education must be medically inspected twice each month. The classrooms for secondary education or technical education need be visited but once a month. In each class-room there must be a thermometer and a written record kept of the temperature and this must be countersigned by the medical officer. He must also examine the pupils from the physical and intellectual point of view and endeavour to foresee and to check any abnormal development or tendency to disease. What is qualified as "preventive medicine" (prophylactic), such as cod-liver oil, may then be prescribed at the public expense. A remarkable feature of this medical service is that the medical officers have to give lessons on hygiene to the senior classes—namely, children about 12 years old. At the beginning of each month they must deliver a simple lecture or explanation. Then the pupils must write an essay to show that they have understood what they have heard and the medical officer looks over these essays and repeats on the next occasion what the essays show has not been fully understood. The following are the subjects which the medical officers have to explain and to lecture upon: (1) cleanliness of the person, the clothes, and domestic utensils; (2) the house, its cleanliness, the dangers of damp, the soil, the building materials, and plan of dwellings; (3) air, foul air, and ventilation; (4) water, when pure, when polluted, boiling and filtration, use and abuse of water; (5) heat, fuel, and warming apparatus clothes and boots; (6) light, artificial and natural; (7) food, what constitutes wholesome food, adulteration of food; the moral, intellectual and physical degradation caused by alcoholism; (8) the excretions, care of the skin, mouth, hair, sight, and hearing; (9) exercise, work, play, gymnastics, and rest; (10) accidents, first care in cases of wounds, sprains, hæmorrhage, and poisoning; and (11) contagious and infectious diseases, prophylaxis, and disinfection. For primary schools this seems a fairly complete curriculum and if the pupils apply these lessons to their home life a very considerable and all-round improvement should result.

In regard to infectious disease when a child is absent from school the parent receives a letter inclosing a post-card, with printed questions about the child which he must answer and post. If the child is detained because of infectious illness the Bureau of Hygiene is at once informed and all children living with the patient are forbidden to go to school till after disinfection. The disinfection, of course, follows on the removal of the patient to the hospital or on death or recovery. Vaccination is not obligatory but during the year 2489 out of the 13,994 children were revaccinated, and this is a good number for revaccination is not offered till the children are nine years old. Apart from vaccination, "preventive" treatment was given to 3860 children out of the 13,994 and 3929 children were found to have defective teeth. Of these latter, 2251 presented themselves for treatment by the surgeon-dentist employed by the municipality to look after the school children. From the ailing or delicate children, 785 were selected and sent at the cost of the town either to the country or to the seaside where they enjoyed between them 9945 days of pure air, or rather more than an average of 12 days for each pupil. In this respect private charity ran a neck-to-neck race with public enterprise, for various charitable societies sent 798 children to the seaside or the country. But their outing was a little shorter, amounting to 8594 days in all, or an average of a little under 11 days for each child. These, of course, were the children from the free schools. Of the 785 children sent to what are known as children's colonies by the municipality only two failed to gain in weight. There can be no doubt, therefore, as to the very great amount of good achieved by these brief holidays in the open air or by the sea. Measures have now been taken to record more systematically the benefits that result. Next autumn all the children placed under special medical surveillance, or what is called "preventive treatment," and this is likely to be not far short of 4000 out of 14,000 children, will be weighed and the chest measurements will be taken. In this manner some valuable data will be collected and other improvements are likely to be effected from year to year.

According to a report drawn up for the municipality by Dr. Gaston Daniel in February, 1897, there were at that date out of 14,000 school children 2442 who were badly shod and 3620 in urgent want of clothes. Then 684 had no bed to sleep on and 2474 were insufficiently fed. These figures only deal with the communal schools of the city of Brussels and the principal difference to-day is that these wants are better provided for. Nor must it be thought that the surrounding boroughs are neglecting these questions. For instance, the outlying district and borough of Anderlecht, which has a population of 55,002 inhabitants, has decided to provide a complete midday meal. All are to be admitted, even the pupils from the free schools; the only condition is that they must dine in the communal building. It is estimated that the meal will cost from 1½*d.* to 2*d.* The charge in any case will be 2*d.* and it is hoped that a slight profit will be made on this so as to help to defray the cost incurred for those who cannot pay. Tickets will be given to the children and great care taken not to let it be known who are those who can afford to pay. Above all, no child is to be exposed to any sort of humiliation. The municipality of Anderlecht will pay for these meals; no school child will be refused the food which he needs. If some of the outlay can be recovered from the parents this will ease the public burden but whatever happens the children must be fed. From all this it will be seen that the inhabitants of the city of Brussels and the neighbouring districts are moving forward. Philanthropy and private charity have done a good deal but this is all too uncertain and unequal in its effects. It is a useful help to municipal effort but it needs to be regulated, systematised, and evenly distributed by the municipal authority. Thus it is that the part played by the municipalities daily increases in importance.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Death from Anthrax.

THE occurrence of anthrax in our cattle is becoming so common that it suggests ignorance or carelessness and a relaxation of the vigilance which against such a foe should be constant but seems apt to slumber. But, as if this danger were not enough, there is the never-ceasing risk run by those engaged in cutting and sorting foreign rags and in handling foreign hides, &c. An inquest was concluded on July 25th by Mr. P. P. Maitland, the West Riding coroner, on the body of a girl, aged 16 years, concerning the cause of whose death there was for a time some doubt. It was alleged that she contracted a disease while cutting and sorting some foreign rags at the warehouse of a firm of rag merchants at Dewsbury so far back as a little before Easter. At the opening of the inquest it was stated that the girl, previously strong and healthy, had become subject to boils on the hands and that "a virulent abscess formed in the right armpit." A post-mortem examination was made by Mr. A. E. Sellers of Thornhill, near Dewsbury, who found abundant evidence of tuberculosis but was unable to detect the existence of anthrax. Some portions of the viscera were sent to Dr. J. R. Kaye, the medical officer of health of the West Riding, for examination and he stated in his evidence that in the lungs, which were highly tuberculous, he had found anthrax bacilli in great numbers, and that anthrax existed and was the cause of death. The verdict of the jury was that the girl died from anthrax while suffering from tuberculosis. It would be well if all wool, rags, or hides from infected countries were either carefully examined microscopically, sterilised by superheated steam, or in some way made safe for those who have to get their living by working among them. Even if all the avenues of approach were not protected some of them would be. No doubt the ignorance of farmers, butchers, and others who may come in contact with infected matter makes thorough supervision difficult, but it is not too late to attempt a more efficient safeguarding from anthrax than exists at present.

Oldham Imbecile's Death.

One of the unfortunate cases that occasionally occur to disturb the public mind as to the treatment of imbeciles in workhouses and asylums was inquired into at Oldham on July 21st. A man was admitted to the Oldham workhouse on July 23rd, 1904, and to the imbecile ward on August 3rd following, when he had no injuries. On June 29th this year he was found to be suffering from a dislocated shoulder, which was also extensively bruised, the jaw was swollen, and there were bruises between the shoulders. These injuries seemed quite recent. The man was very seriously ill besides suffering from softening of the brain, to which condition death was attributed. The attendants expressed surprise at the man's state and the head attendant said that he could not account for the bruises. At times the patient was stated to be quite vicious and during the night before his death "there must have been something unusual as a portion of the bedding had been displaced." Two other attendants were closely questioned but "failed to give any information." The jury were not satisfied with the evidence and the inquiry was adjourned. It is evident that in some way considerable violence was used by someone and the mystery should be cleared up.

To Live a Century.

Among the many picturesque utterances of Sir James Crichton-Browne few have attracted more attention than that of his belief that "every man is entitled to live a century." So much is this the case that the medical officer of health of Manchester has actually been "interviewed" on the subject by a representative of one of our daily papers. Dr. J. Niven appears to have expressed his views with frankness, conditioned by a certain caution which is rarely wanting in those whose privilege it is to have been born north of the Tweed. He was disposed to agree with the general tenour of Sir James Crichton-Browne's speech, and was not prepared to deny "that a century of healthy life could be attained in health and vigour," nor "that given favourable conditions and barring accidents this was the normal duration of man's life." Excessive worry and the continued irritability associated in recent years with the business life of our large towns no doubt reacted on the nervous system with disastrous results. Composure of mind, well-ordered and regular habits, on the other hand, formed the best basis for a sound constitution. Dr. Niven was of opinion that with regard to the statement "that regular employment must be secured and poverty diminished," that this very considerable problem involved, among other things, the question of education. He would secure to every youth "a thorough knowledge of at least two trades," presumably on the principle of two strings to the bow. How this desirable state of things is to be brought about, even with Government aid, was not indicated. Why Sir James Crichton-Browne, or Dr. Niven, or any of the various lookers into the future should fix on a century as the normal duration of human life is not apparent. Being liberally minded as to time they surely might have allowed man as long a life as that of the tortoises of the Galapagos islands. These creatures show the great advantage of a quiet contemplative life to those who wish to attain the length of days which we are told on good authority is "normal" for man when duly qualified and conditioned.

The Whalley Asylum Inquiry.

Your Liverpool correspondent noticed last week the inquiry as to the suitability or otherwise of the site selected by the Lancashire Asylums Board for a great pauper asylum. There is no doubt of the great pressure on the present accommodation and the need for more, but that, of course, has no bearing on the question as to the site at Whalley being a good or a bad one. The evidence given at the inquiry was not only contradictory on important matters where opinions might quite properly vary but also as to matters of fact. The county surveyor and architect said that the site had a good elevation and a very fine plateau, good drainage facilities, a good water-supply could be obtained, the railway was near, and "it was also possible to carry on brick-making." He had not noticed any offensive smell from the river Calder and was not aware that sewage entered the river. He had not seen fog on the land, and so far as he could ascertain it had only been flooded twice in 40 years. Dr. F. P. Sarjant, the county medical officer of health, said that statistics showed that the death-rate of Whalley was lower than that of the county and than that of the rural district. He did not think that the health of the district was endangered by any pollution that might exist in the Calder. Professor Boyd Dawkins said that the area under consideration was covered with boulder clay of uncertain thickness but proved to be more than 40 feet thick and he was of opinion that it would be impossible to drain it so as to convert it into a perfectly dry site. He considered the Calder "an extremely filthy stream" and that it would be most improper to plant any large public institution close to the area. The prevailing south-west winds would carry whatever smell there might be. Such a situation would be the last he would choose for the erection of any institution. The Local Government inspectors had by personal inspection satisfied themselves that the Barrow Brook was "very bad." In his evidence Mr. Mould said that no asylum in England or elsewhere was built on such a site as the one now proposed. Mr. G. W. Mould, Dr. J. Dreschfeld, Dr. Martin, Dr. Gray of Blackburn, Dr. Musson, Dr. G. E. Orme, and Dr. L. T. Lancaster of Clitheroe all gave evidence as to the unsuitability of the site. Mr. I. H. Gott, a civil engineer of London, said that it was practically impossible to drain it, and Mr. E. L. Morgan, borough engineer, Bolton, said it would cost something like £18,000 to carry out a scheme of drainage which after all would not be efficient as it would not take the water between the line of pipes. Several other witnesses gave evidence of the unsuitability of the site. The application of the asylums board was for power to borrow £32,910 for the purchase of lands at Whalley for a pauper lunatic asylum for the county; this, plus the £18,000 for drainage, seems a good round sum to be spent before the foundations are begun, so that the cost, expected to be £500,000 or £600,000 by the time the building is completed and furnished, will be something to make ratepayers shudder, and if the site is so unsuitable as many well-known men declare it will be a costly and improper blunder.

August 1st.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

City Analyst of Bristol.

THE enlargement of the boundaries of the city of Bristol, carrying with it, as it does, a large increase of work, led Mr. F. W. Stoddart, who has for many years acted as city analyst, to ask for an increase in his salary of £200 per annum. Within the past few years the number of samples which he has examined has increased from 400 yearly to over 1200. It is of interest to note in this connexion that the inspector of food and drugs who takes the samples receives a salary of £300 per annum and is provided with an assistant who helps him to administer the Shop Hours Act. It would seem, therefore, that the members of the Bristol corporation cannot discriminate between highly skilled labour and that which is more or less mechanical. In May last the watch committee recommended the corporation to pay Mr. Stoddart £200 per annum for the first 400 examinations made and 6s. for each subsequent examination. This recommendation was, however, referred to the committee in order that an inquiry might be made jointly with the health committee as to the employment of an analyst who should devote his whole time to the work of the corporation, including the bacteriological investigations which have been carried out during the past two years by Professor A. F. Stanley Kent at Bristol University College. As a result of this inquiry the committees named recommended the corporation to appoint a city analyst who had been trained in bacteriological work and to pay him a salary of £400 per annum, increasing to a maximum of £600; they also advised the appointment of two assistants and a laboratory attendant and the equipment of a chemical and bacteriological laboratory. When these recommendations were before the council on July 25th an unsuccessful attempt was made to secure a continuation of the services of Mr. Stoddart upon the terms named above, and in the end the two committees were asked to reconsider the whole question, and it is understood that they will report as to the practicability of the analytical and bacteriological work being carried out in the laboratories of University College.

Crime in Glamorganshire.

At successive assizes during the past few years judges on circuit have congratulated grand juries in North Wales and in most of the South Wales counties upon the absence of serious crimes. So small has the calendar become that it has been decided to hold a joint winter assize in one county, to which will be brought the prisoners if there are any from the three counties, and if there are any civil actions they will be taken from the same areas. It is to be regretted that the county of Glamorgan cannot show such a satisfactory record. In charging the grand jury at Cardiff on July 25th Mr. Justice Phillimore referred to the very large proportion of sexual offences, no fewer than 23 of the total number of 65 prisoners being charged on that account. He recalled the fact that at the previous assizes there was evidence of some good having arisen from the religious revival but observing that many of the prisoners came from the colliery districts where the revival was very strong and very effective he feared that they had already got into the reaction.

Didworthy Sanatorium.

The second annual meeting of the supporters of the Devon and Cornwall Sanatorium for Consumption at Didworthy was held at Plymouth Guildhall on July 25th, the Earl of Mount-Edgcumbe presiding. The chairman stated that the new buildings would be completed in two weeks and that the sanatorium would then provide accommodation for 35 patients. The report showed that 49 patients had been admitted during the past 12 months. The financial statement showed that during the year the subscriptions amounted to £330, including five guineas from the Prince of Wales, and that an unfavourable balance remained. The Earl of Mount-Edgcumbe made a strong appeal for more subscriptions.

The Medical Officer of Health of Chipping Sodbury.

At the meeting of the Gloucester rural district council held on July 24th the clerk stated that he had received a letter from the Chipping Sodbury rural district council stating that they "had appointed a fully qualified medical officer of health at a salary of £30 per annum less than that demanded by Dr. Bond," and adding that "they feel justified in their action and cannot reconsider the matter." The chairman mentioned that the decision of the Chipping Sodbury council not to reconsider the matter was only carried by a majority of two votes.

July 31st.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

Proposed Coöperation in the Nursing Arrangements of Hospitals for Infectious Cases.

ON the invitation of the sanitary committee of the West Riding county council a very important conference has lately taken place between 107 local authorities, 11 of these being non-county boroughs, 79 urban districts, and 17 rural districts, to discuss a scheme outlined by Dr. Kaye in reference to the supply of nurses to the hospitals under their control. In a memorandum presented in June, 1904, it was stated that there were in the administrative county 38 permanent hospitals for isolating infectious diseases, as well as about 50 for small-pox patients. The total accommodation was represented by about 2000 beds. Taking the nursing staff at one nurse to six beds their numbers would amount to about 300. The salaries paid varied from £12 to £35, so that the total salaries, excluding those of matrons, amounted to nearly £6000. It was pointed out that under the system at present in operation when an unusual number of admissions occurred at any particular hospital special nurses had to be obtained, and sometimes with difficulty, at enhanced salaries of two or three guineas per week, while at other hospitals a decrease in the number of patients caused the nurses to be temporarily in excess of the requirements. On these facts Dr. Kaye has suggested that there is room for a coöperative system among the hospitals for the interchange or transference of nurses as fluctuations occur. This would lead to efficiency and economy and would be the means of adjusting the supply of nurses to the demand in any given hospital. The scheme would depend on the voluntary coöperation of the various hospital authorities who by a representative committee would fix upon a standard gradation of nurses and their wages and uniform. Each hospital, as at present, would appoint its own staff, but every nurse on engagement would be required to sign the conditions of appointment as settled by the joint committee, to be uniformly applicable in all the federated hospitals. One of these conditions would be that the nurse undertakes to serve temporarily in any other hospital when requested by her employers to do so The scheme would necessitate the institution of a central bureau to which each hospital would send a weekly return of the number of admissions and discharges and of the number of nurses employed. The scheme appears to be an admirable one and eminently necessary in the case of hospitals for infectious cases, in which, of course, the number of patients varies so greatly and within such narrow limits of time.

Opening of the Dental Department at the Public Dispensary.

The new dental department of the Leeds Public Dispensary was formally opened on July 27th by the Lord Mayor of Leeds. The chairman of the dispensary board in introducing the Lord Mayor referred to the part which had been taken by the dentists of Leeds and district in equipping the department and complimented them on their public-spirited action in the matter. The department is situated on the first floor of the working part of the institution and consists of a series of six rooms, access to each of which is obtained from the gallery of the large out-patient hall. The rooms are all well lighted, have polished floors, and are heated by hot water coils. The ventilation is, like that of the medical, surgical, and ophthalmic rooms on the ground-floor, carried out on the exhaust system. The waiting-room will accommodate about 80 patients. The ordinary extraction room, 27 feet by 16 feet, is fitted up with two chairs and the usual fittings and instruments. The recovery room is situated between the extraction room and the operation room and communicates directly with each. The operation room is 20 feet by 17 feet, and has been fitted up with enamelled operating table, stools, instrument cupboards, &c. The chair is of the Morrison pattern, with wooden seat and back. There is a copper steriliser and the lavatory basins may be filled with shower spray, the temperature and flow of the water being regulated by a foot lever. In addition to the ordinary anæsthetic apparatus there is apparatus for the administration of "gas" and oxygen. Communicating with this is the nurses' room which will be used as a dressing-room for female patients. The conservation-room, which has roof light as well as side light, is a large room 56 feet by 20 feet and in the meantime has been fitted up with three chairs only. Two of these are of the Ash's hospital pattern and have been presented by the makers; the third is a "Twentieth Century" chair which has been presented by the Dental Manufacturing Company. The chairs are provided with combined fountain spittoons similar to those recently supplied by Messrs. Ash to the London Hospital. There are also among the apparatus a suspension chord Columbia electric engine. a Cuttriss Wallis motor, and two Parson Shaw foot engines. Electric-light brackets with universal motion are provided for each chair. In one corner of the room is a work bench fitted with a polishing lathe run from counter shafting driven by a quarter horse power electric motor and also provided with gas-fittings for blowpipes, &c. The staff consists of an honorary consulting dental officer and of six senior and six junior honorary dental officers, two of whom attend each day. The services of Dr. Capper Johnson and of Mr. Harold Collinson have been secured as honorary anæsthetists and it is confidently anticipated that the department will prove a valuable addition to the charities of the town and will supply what has long been wanted in Leeds—the clinical side of a dental school.

August 1st.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Edinburgh Graduation Ceremonial and Valedictory Address by Professor A. R. Simpson.

ON July 28th the summer graduation ceremonial of the University of Edinburgh was held, the Vice-Chancellor, Principal Sir William Turner, K.C.B., presiding. The only honorary degree conferred on this occasion was given to Mr. John Horace Round, M.A., D.L., the historian. The degree of Doctor of Medicine was conferred upon 75 graduates, including two ladies; while 155 candidates, including eight ladies, were admitted to the degree of M.B., Ch.B. Five theses were awarded gold medals. Professor A. R. Simpson, as Dean of the Medical Faculty, presented the graduates. Professor Simpson referred to his resignation, saying that in view of his age and that he had occupied the chair for 35 years he deemed it wise to resign and to hand on the torch of midwifery to his successor. He also mentioned that Professor D. J. Cunningham would succeed him as Dean of the Faculty of Medicine. He said that it was not without a pang that he resigned, because of the fact that his department became yearly more thrillingly interesting to the scientific explorer and more urgently important for the general practitioner. He then briefly referred to the enormous progress which had been made in his own department as well as in the other departments of medicine, and said that this had been attended with changes in the training of entrants to the profession. When he began to study the system of medical apprenticeship had not quite died out. Three of his fellow students had been apprenticed to the late Professor Spence, while he had had the good fortune to be apprenticed to the late Professor Goodsir. He had not in that capacity been helped much in learning to cure disease but the apprenticeship gave him opportunities for much dissection and for acquiring facility in the handling of forceps and scalpel that had been a lifelong benefit. It had brought him also under the spell of a man of genius who was a tireless toiler and who sought always what he called "God's truth." He (Professor Simpson) thought that he was himself the last of the Edinburgh medical apprentices. Professor Simpson then referred to the growth of the examination system with the disappearance of the apprenticeship system until it had become a multiplied misery. It had become a necessity because of the extension of all the subjects of study. He made a number of humorous references to his earlier days when a professor might change his chair or profess to be able to teach any subject in the university, and recalled the fact that Sir James Simpson had been urged when professor of midwifery to become a candidate for the chair of practice of physic vacant by Alison's death. He also related several very amusing experiences of his own when he was examined. As he suggested, his experiences compared with the experiences of those whom he was addressing appeared primeval and would make them realise the stupendous changes which had swept over all the fields of medicine during the intervening half century. The era spanned had been one of those "once more" epochs which the Hebrew mind had taught us to discern, when we saw the Supreme Power "shake the heavens, and the earth, and the sea, and the dry land," "that those things that cannot be shaken may remain." He said: "I do not know in what mood of pessimism I might have stood before you to-day had it not been that ere the dew of youth had dried from off me I made friends with the sinless Son of Man who is the well-head of the stream that vitalises our civilisation, and who claims to be the First and the Last and the Living One, who was dead and is alive for evermore, and has the keys of death and the unseen. My experience compels me to own that claim." The changes that had taken place took place under the influence of two factors. There was, first, the extended range of observation that had been opened to sense largely by electricity and the spectrum, and secondly, the guidance that had been given to imagination by the doctrine of evolution. The outer man had acquired instruments of precision, the inner man had been given a clue to guide him through the maze of thought. He then referred in glowing terms to the transformations which he had been made to see. He referred to the doctrine of the ether, to the change in men's ideas regarding the age of the earth, of the appearance of animal life upon it, and of the very constitution of the world. The atom brought from the very verge of thought to guide the chemist in his research had itself been atomised and presented itself now as an object built up of many parts. "It is no longer a solid block but an edifice—a laboratory—into which we can go and see business transacted among the multitude of ions or electrons, where physics is fain to borrow the language of biology for its expression. We seem to ourselves to have come into the borderland where the homogeneous first becomes heterogeneous, where the invisible takes on visibility, where ether clothes itself with matter, and where we are definitely told we may see the mutation of one element into another, so that when we have entered an atom that bore over the entrance the sign of a radium workshop we emerge by a door called helium." He then spoke of how the unit of biology had been transformed. The cell was becoming visible under the microscope when the speaker was born. But the cell was now a speck of bioplasm. In the old nucleus there had been found threads of a life-web resolving into chromosomes which held and could transmit the peculiarities of various forms of life. The plasm dot of a chromosome was again resolved into ids and biophors with their determinants till they might well imagine they had come into a vast cathedral from whose roof there echoed the sound of the voice of one of their brethren of the centuries B.C. who called his treatise on anatomy "A Hymn to the Supreme Being." It was here that they had the most thrilling of all the transformations that had taken place in the thoughts of those who had the gift, the right, and the responsibility to think. Man, "servant and interpreter of nature," soaring among the stars or searching out the secrets of the atom and the cell, had found himself an item in a social cosmos, subject through all its bounds to the reign of law. A composite being capable of communing with the Spirit, who had not at any time, anywhere, among any people, left Himself without a witness, he found that there was nothing alien to him in all the universe. Standing on the summits of creation and summing up in himself the last results of the long processes of evolution he looked to find his ultimate home in One Who was from everlasting to everlasting God. He was the more encouraged to such lofty ideal when he traced his genealogy back, away back to where the foundations of the earth were laid. His mind reflected the mind that fashioned its materials, and somewhere among the ions and the biophors, where he could scarcely tell whether the ion was not already instinct with more than electricity or the biophor held less than life, he saw the narrow fissure between the unseen and the seen, between the not-living and the living, bridged by a kind of virgin-birth, with repetitions of which in some form natural science would make him familiar as he traced the various stages in his own evolution. Professor Simpson then dealt with the individual life. In the germ plasm of some 70,000 primordial ova only four or five were selected to pass through evolutionary processes that would recapitulate at various stages the history of their pre-human genealogy before they came to claim a place in a nation's register. Each of the four, as his evolution still progressed, would find after he had come to himself, and so long as his self-consciousness abides, that the material part of him was subject to incessant change. He was also continually putting off his moral vesture and replacing it with a better-fitting garb. If he reached the Mosaic term of three score years and ten, and if he be wise he would long ere then have pondered how the last fashion of his vestment would be put off. In the years to come they would recall the unusual concurrence of the simultaneous leave-taking of the University by the graduates and their promoter. They would say: "We came away a goodly company through the gateway that leads to the rosy dawn. He passed out, all alone, through the door that leads to the sunset and the evening star. He was an old man, not a great man, he had been a friend of great men, and came out of a great time in the nineteenth century, 'when there was midsea and the mighty things,' and it looked to the men of his generation as if old things had all passed away and a new world begun. And he told us that the great lesson he had learned on his way through life was that 'The world passeth away, and the lust thereof; but he that doeth the will of God abideth for ever.' Farewell." This remarkable address was listened to with the greatest attention and at its conclusion the speaker was accorded loud and prolonged applause. The next incident was the presentation to Professor Simpson of an illuminated address from the students and the new graduates. The presentation was made by Mr. H. J. Norman, president of the Students' Union. The Vice-Chancellor also spoke in feeling terms of Professor Simpson's severance from the University.

University of Aberdeen Quater-centenary.

The recently appointed quater-centenary subcommittee consists of Mr. James Murray, Glenburnie Park, convener of the hospitality committee; Mr. P. J. Anderson, convener of the publications committee; Councillor Alexander Wilson, and Mr. D. R. Thom, secretary of the Senatus. It has visited Glasgow and Edinburgh and had interviews with Sir T. M'Call Anderson, Sir William Turner, Professor Taylor, and Professor D. J. Cunningham (formerly of Trinity College, Dublin). Full information has been obtained regarding the preliminary organisation, publications, and expenses incurred in connexion with the centenary celebrations at Edinburgh in 1884, Dublin in 1892, and Glasgow in 1901.

July 31st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Royal University of Ireland.

UP to the present year the method adopted at the final M.B. examination of the Royal University of Ireland was as follows. The candidates were first examined in the various subjects (orally, clinically, and by papers) and at the termination the examiners decided, at a meeting, who were to pass and who were to be rejected; they also recommended a certain number for the honour examination and these were again examined by papers, clinically, and orally to decide their relative position on the honour list (of course, there is no clinique in midwifery). Now to this method there were many objections: 1. The candidates were so tired out that it occasionally happened that some of those who were recommended for honour, and might have obtained that distinction, were so wearied with the previous week of the pass examinations that they did not present themselves for the honour contest. 2. The examinations being held in Dublin it involved additional expense to the provincial candidates (board and lodging). 3. It took up much additional time of the examiners, the majority of whom do not live in Dublin. Feeling the weight of these objections many alternative schemes were discussed: (*a*) it was thought by some that one examination alone would be sufficient and that all that was needed was to recommend the candidates who were at the head of the lists and who had done exceptionally well; (*b*) others recommended pass and honour questions to be placed on the same paper, the pass questions being more numerous than the honour; and (*c*) the University of London method was also suggested—that is, to allow a candidate to take honours in special groups (medicine, surgery, or midwifery). The principle finally adopted and put into force for the first time in the spring examinations of this year was a different one Candidates were obliged to state beforehand whether they would go in for the pass or honour course and having decided on one or the other plan they were obliged to keep to this. Pass and honour papers were given out in each group of subjects on the same day, and a candidate having selected an honour paper could not—on finding it too difficult—ask for the pass on the same subject or on any of the other groups. As might have been anticipated, the plan totally failed. 1. Really well-prepared candidates of a timid or self-distrusting nature took the pass papers while others, more optimist in regard to their capabilities, went in for the honour questions. 2. Examiners found it difficult to adjust a proper standard. The duty of an examiner in a pass examination is not so much to throw the candidates into competition with each other but rather to find out whether he can honestly say a particular candidate is fit to pass or not. When it comes to the honour candidates the examiner has first to decide, Have the students come up to the honour standard, and, if so, what is their relative position to one another? This can only be done by the examiners reading together and marking together the answers of each candidate and giving to each on the *vivâ voce* examination identical questions. But suppose some of the candidates are not up to the honour standard then arises the further question, Are they fit to pass? But no provision existed for such a contingency, as the candidates were obliged all through to take the pass or the honour course. The method was found—after the first experience—to be totally unworkable, a point on which all the examiners agreed, and at a meeting of the Senate of the Royal University held on July 27th the following regulations were adopted for the holding of the M.B., B.Ch., B.A.O. degrees examination, to come into force at the October examinations :—

1. That the examinations in medical pathology and surgical pathology be separated, 25 marks being assigned to each.

2. That the pass examination shall be held in all respects in the same manner as heretofore.

3. That the further examination for honours shall be exclusively a written examination and only those candidates can be admitted to it who, upon their answering at the pass examination, are specially recommended for admission by the examiners.

4. That honours shall be awarded not on the examination as a whole, as heretofore, but in the following groups:—(*a*) medicine, theoretical and clinical, including therapeutics, mental diseases, medical jurisprudence, sanitary science, and medical pathology; (*b*) surgery, theoretical, clinical, and operative, including the use of instruments and appliances: ophthalmology and otology, surgical anatomy, surgical pathology; (*c*) midwifery and diseases of women and children.

5. The candidates qualified to present themselves for honours may select one or more of the foregoing groups.

6. The honour papers shall be set on the day following the announcement of the results of the pass examination. They shall consist of (*a*) a paper on medicine and medical pathology; (*b*) a paper on surgery and surgical pathology; (*c*) a paper on midwifery and diseases of women and children, each paper to be of two hours' duration and 100 marks to be assigned to each.

7. The honours in each group shall be awarded taking into account the entire of the marks obtained by the candidate at the pass examination in that group, together with the marks obtained on the honour paper.

8. The exhibitions shall be awarded having regard to all the marks obtained both at the pass and the honour examinations.

Scarcity of Water.

Owing to the warm dry summer many places in the north of Ireland, especially the seaside resorts, are experiencing a drought. In Larne the water-supply is cut off from 4 P.M. until 6 A.M. There is also a scarcity in Bangor, Whitehead, and Portstewart—that is, the supply is intermittent.

Hospital for Diseases of the Skin, Belfast.

At the annual meeting of the supporters of this hospital held on July 29th it was reported that 932 patients had been treated during the past year, of whom 35 were admitted as intern cases. A Finsen lamp of the newest type has been purchased and special thanks were given to Dr. J. C. Rankin (who has charge of the electrical department in the Royal Victoria Hospital) for the help that he gave in the matter of the selection of this lamp. Financially there is a balance to the credit of the hospital of £246 6*s.* 3*d.*

August 1st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Treatment of Hydatid Cysts of the Liver.

AT a meeting of the Surgical Society held on July 19th M. Guinard said that in his opinion the best method of treating hydatid cysts of the liver was incision preceded by an injection of formol of 1 per cent. strength and followed by extraction of the germinal membrane and suture of the cyst without packing. Since adopting this method he has had uniformly good results. In one of his cases, however, the patient several months after the operation, when he appeared to have completely recovered, returned, having an abundant effusion of bile into the cavity. This effusion was evacuated by puncture and did not recur. This complication would seem to be an argument in favour of packing but these effusions of bile were so rare and could be so easily treated that simple suture without packing must be considered the best treatment.

Removal of the Mammary Glands of Animals in Milk.

At a meeting of the Academy of Sciences held on June 17th M. Porcher stated that removal of the mammary glands of animals in full milk produced marked glycosuria in them during the first few hours after the operation. This glycosuria was at its height in about four or five hours and was accompanied by distinct hyperglykæmia. The glycosuria then declined rapidly and in less than 48 hours after the removal of the glands the urine showed no reducing property. From these researches M. Porcher concluded that the transformation of glucose into lactose (a process necessarily accompanied by the formation of galactose which was found in the excreted lactose) was an intra-mammary function and that lactose could not be formed, as has been alleged, from the union of glucose derived from the blood and galactose derived from the food.

Treatment of Cancer of the Tongue.

At a meeting of the Surgical Society held on July 12th M. Poirier said that in a communication made in 1902 he had recommended for the treatment of cancer of the tongue an operation based on sound logical and anatomical principles. He proposed the systematic and simultaneous removal of the cervical glands and the lingual neoplasm. In 1904 he showed two male patients, one of whom had been operated on 22 months previously and the other 33 months previously, both of them remaining free from any trace of relapse. These operations now dated three or four years back without any appearance of relapse. M. Poirier then considered the question in its histological aspect. Histological data showed that 12 times out of 20 the cervical glands were affected at the onset of cancer of the tongue and their removal in every instance was plainly indicated. As a matter of detail he mentioned that at the beginning of the operation he placed the cannula of a trocar between the cricoid and thyroid cartilages. In conclusion, he expressed regret that many patients suffering from cancer of the tongue sought surgical aid too late, having been buoyed up with false hopes or deceived by the treacherous illusions of radiotherapy or other methods of treatment.

The Use of Movement in the Treatment of Fractures.

Acting on the principle that the bones, like all the parts of the body, require to be freely moved in order that they may attain the full degree of vitality essential for repair, M. Lucas-Championnière, instead of adhering to the classical treatment of fractures by fixation, has replaced it by early mobilisation and massage. During the last 25 years he has treated a very large number of fractures in this way and at a meeting of the Academy of Sciences held on July 10th he described (without entering into specific details) those to which the method was applicable. Among those he enumerated fractures of the upper and lower ends of the humerus; some fractures of the body of this bone; all those of the elbow, including those of the olecranon; many occurring in the two bones of the forearm; fractures of the various bones of the hand and foot and of the scapula; almost all those of the fibula; many bimalleolar fractures; fractures involving the knee and the neck of the femur; and several fractures of the middle of the diaphysis of the long bones of the leg and arm. The principal advantages of massage and early mobilisation were that pain soon disappeared and that the duration of the process of repair was considerably shortened.

Venous Bruit de Souffle at the Level of the Femoral Veins.

At a meeting of the Academy of Medicine held on July 18th M. Molle described some observations which he had made on the occurrence of certain venous blowing murmurs (*bruit de souffle*). He said that at the period of puberty young men might exhibit special symptoms analogous to chlorosis in girls. The condition in question presented, together with numerous indefinite subjective signs, an objective sign of very frequent occurrence, consisting in the presence of blowing murmurs, sometimes of considerable intensity, situated almost exclusively on a level with the femoral veins. In 22 per cent. of the cases observed by him general bad health and overwork (especially the overwork of military service) had induced tuberculosis, which ran a rapid course. He considered that these venous murmurs on a level with the femoral veins ought to be carefully looked for at inspections (*au cours de tournées de révision*) in certain apparently normal individuals. This symptom coexisting with other familiar signs, such as palpitation, breathlessness, indigestion, and asthenia, frequently simulated by malingerers, should be kept in mind with a view to the rejection of persons thus affected.

Vulcanite Tooth Plates.

At a recent meeting of the Société de Médecine Publique M. Eilersten, a dentist in Paris, drew attention to the dangers of vulcanite tooth plates coloured red or pink in imitation of the mucous membrane. He said that wearers of these dentures frequently suffered from buccal inflammation, a sensation of heat or burning, and a spongy state of the gums—conditions which might end in suppuration and inflammation extending as far as the pharynx and larynx, with concomitant salivation and fœtid breath. The symptoms closely resembled those of mercurial stomatitis and dental vulcanite was coloured by a large addition of vermilion, amounting to as much as 30 per cent. of its weight. Vermilion was a sulphide of mercury and was usually considered to be physiologically inert on account of its solubility, but when it was in prolonged contact with the icrobes existing in the mouth the indiarubber was attacked id the vermilion was transformed into soluble salts of ercury which produced mercurial stomatitis and inflammaon of the gums. These views naturally did not meet with ianimous approval at the meeting, and it was pointed out, reply, that persons who did not use artificial teeth were able to the symptoms described quite as often as, if not tener than, the wearers of such teeth. The question was reality one of personal cleanliness and care of the mouth.

July 31st.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Extraordinary Power of Controlling the Muscles.

MEDICAL circles in Vienna have now the opportunity of itnessing some very remarkable examples of muscular tion which a man aged about 30 years is showing in a spital. His power over his muscles is so great that he can rform feats that would usually be deemed incredible. He in contract his abdominal muscles so as to show an idulating movement passing upward and downward; his rynx goes up and down without the aid of the tongue; and e can even cause his pupils either to contract or to dilate, ius showing the influence of the will over so-called inluntary muscular actions. Furthermore, the man, who is joiner by trade, can contract his subclavius muscle and by ius approximating the clavicle to the first rib he compresses is subclavian artery until the radial pulse disappears. By ontracting the diaphragm he is able to displace his heart y four inches. One of his marvellous feats is the "transosition" of the intestines into the space occupied usually y the lungs. By contraction of the abdominal muscles and laxation of the diaphragm the lungs are compressed to about alf of their volume and the intestines are pressed upwards their place; the transference of the viscera is proved by eristaltic movements visible in the thoracic region and by ie x rays. The man trained his muscles under medical ipervision for several years until he attained control over lmost every muscle of his body.

Advertising by Medical Practitioners.

The condition of the profession in several districts is rowing so bad, especially since the laws against unqualified ractice are not enforced to any great extent, that some iedical men have resorted to advertising and two medical ouncils have found it necessary to hold discussions on the ibject. In Salzburg the dental surgeons (fully qualified nd holding the degree of M.D.) who have to meet the ompetition of the unqualified dentists have been permitted y the council to advertise their consulting rooms and hours f attendance in the ordinary newspapers and the example et by them has induced practitioners in a few other cities o do the same, especially as the council has no actual power o prevent them from doing so. In the Vienna Medical ouncil on July 8th there was a very lively debate on the ubject and it is significant of the prevailing opinion that nly a small majority defeated the motion to permit moderate dvertising. Meanwhile the Government continues to turn a eaf ear to the wishes of the profession.

Medical Statistics from Lower Austria.

One of the most pleasing results of improved sanitation is he constant decrease of epidemics and infectious disease in ienna. Thus in 1873 there were 630 cases of small-pox in population of nearly 2,500,000, but since 1895 the number as never exceeded 20 a year, and fell to two in 1902. In 904 there were five cases, all of which were imported, and ne terminated fatally. This is no doubt the result of comulsory vaccination. The mortality from diphtheria has been alling steadily from 33 per cent. in 1883 to less than 12 per ent. in 1902. In 1902 there were 2280 medical practitioners n Vienna—i.e., one for every 735 inhabitants—whilst the flat ountry had only one practitioner for every 2000 inhabitants. nqualified practitioners abounded. These figures have een taken from the "Statistical Year-book for Vienna and ower Austria, 1904," which comprises a period of 20 years 1884-1904). The only increase of infectious disease is in he case of puerperal fever which shows a constant upward endency in spite of all measures to check it; 152 deaths were attributed to it in 1904 as compared with 131 in 1900.

Spirochæta Pallida in the Circulating Blood.

At a recent meeting of the Vienna Clinical Society Dr. Raubitschek showed blood films from a patient who suffered from syphilitic erythema maculo-papulatum over his whole body and also from anal condylomata. Dr. Raubitschek pressed the condylomata between two fingers and the exuding liquid was stained by the method of Giemsa. All films showed the spirochæta pallida (Schaudinn). On the same day a drop of blood was obtained in the usual manner from the fingertip and stained as above mentioned. These preparations gave also clear and definite proof of the presence of the spirochæta. This is the first time that living spirochætæ have been seen in the circulating blood.

A Minute Neuro-fibroma or Suprarenal Adenoma.

At a recent meeting of the Neurological Society Dr. A. Fuchs showed a man who had complained of constant pain under the left costal arch. The pain was increased by pressure or by walking. During the six years of its duration he had noticed that the seat of the pain was at a certain spot from which it radiated. Careful examination revealed the existence of a small hard nodule at this painful point. The nodule, which was of the size of a large pinhead, was excised with a portion of the skin of the abdomen. The pain has since disappeared. Microscopic examination of the nodule, which was supposed to be a simple neuro-fibroma, showed structures which were nearly identical with those of the suprarenal gland. As hitherto it has never been observed that suprarenal formative elements appeared in the ectoderma (skin of the abdomen) this account must be received with the greatest reserve. Several histologists who saw the microscopic preparations concurred with the diagnosis of adenoma suprarenale subcutaneum.

Echinococcus of the Spleen.

Dr. von Schmarda showed at a recent meeting of the Surgical Society a case in which he had performed splenectomy and resection of the left lobe of the liver on account of echinococcus. The patient, who had been suffering for three years from a swelling in the left hypochondrium, was operated upon under local anæsthesia. The bleeding from the liver was controlled by nine deep sutures and a Mikulicz tampon filled the gap made by the splenectomy. The after history was uneventful. There are only 26 cases of splenectomy recorded and this is the first one where operations on the liver and the spleen were simultaneously performed. Echinococcus of the spleen is a very rare disease, only ½ per cent. of the attacks being located in this viscus.

July 22nd.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Ontario Medical Association: Annual Meeting.

THE twenty-fifth annual meeting of the Ontario Medical Association was held in Toronto on June 6th, 7th, and 8th, under the presidency of Dr. William Burt of Paris, Ontario, the general secretary being Dr. Charles P. Lusk of Toronto. It was the second largest meeting of the association during its quarter of a century of life. The address in medicine was delivered by Dr. W. B. Pritchard of New York city, the title of the address being "The American Disease: an Interpretation." Dr. A. J. Ochsner, the distinguished Chicago surgeon, delivered the address in surgery, which had for its title "Surgery of the Stomach from the Standpoint of the Clinician." Throughout the meeting the contributions were above the usual level, the discussions being keen, interesting, and profitable. Dr. H. B. Anderson of Toronto communicated a valuable paper on Diseases of the Myocardium from a Clinical Standpoint. Dr. George A. Bingham of Toronto contributed an interesting paper on Exophthalmic Goitre and exhibited some patients upon whom he had recently operated. Dr. H. A. Bruce of Toronto reported 500 operations for appendicitis in the past seven years and advocated the calling in of a surgeon at once by the physician as soon as the latter diagnosed the disease. Dr. Graham Chambers of Toronto read some interesting notes on the cutaneous effects observed in hysterical patients. Dr. W. B. Thistle of Toronto read a paper on the Treatment of Intestinal Lesions in Typhoid Fever, in which he remarked that the last 100 cases of typhoid fever under the care of Dr. W. P. Caven and himself in the Toronto General Hospital had been carried successfully through without a single death, and in all the eliminative treatment, of which Dr. Thistle is an ardent advocate, was employed. Dr. Edward Ryan of Kingston, Ontario, showed several interesting pathological specimens. The others who contributed were as follows:—Dr. J. Biggar (Tilsonburg, Ontario). Broncho-Pneumonia, a Contrast between Rural and Urban Results; Dr. Price Brown (Toronto), the Lymphoid Tonsillar Circle, the Pharyngeal Tonsil; Dr. P. H. Bryce (Ottawa), Types of Immigrants; Dr. George H. Burnham (Toronto), Abnormal Refraction and Eye-Strain; Dr. Caven, Exophthalmic Goitre, exhibition of patients; Dr. F. Fenton (Toronto), Ante- and Post-Partum Examinations; Mr. C. J. C. O Hastings (Toronto), the Duty of the Profession and the State in Regard to the Mental and Physical Care of our Improperly Cared-for Children; Dr. S. M. A. Hay (Toronto), a Critical Review of the Operations for Suspension of the Uterus; Dr. C. A. Hodgetts (Toronto), On the Establishment of a Department of Public Health for the Province of Ontario; Dr. T. K Holmes (Chatham, Ontario), a Summary of 266 Laparotomies, with remarks on the technique adopted; Dr. Henry Howitt (Guelph, Ontario), Remarks on the Surgical Treatment of Chronic Nephritis, with notes of cases; Dr. Goldwin W. Howland (Toronto). Compression Paraplegias following Spinal Caries. and the Results of Surgical Intervention for their Relief; Professor A. B. MacCallum (Toronto), Recent Advances in the Study of the Physiology of Gastric Digestion; Dr. Albert A. Macdonald (Toronto). Ectopic Gestation; Dr. H. T. Machell (Toronto), Modified Milk *v.* Whey Mixtures; Dr. F. W. Marlow (Toronto), Simple Ulceration of the Stomach and Duodenum; Dr. K. C. McIlwraith (Toronto), Clinical Exerience with Labours in Contracted Pelves; Dr. A. McPhedran (Toronto), Evidences resulting from Functional Disturbances of Digestion; Dr. D. Campbell Meyers (Deer Park, Ontario), the Admittance of Certain Forms of Acute Mental Diseases to the Wards of General Hospitals; Dr. James Newell (Watford, Ontario), Report of a Case of Liver Tongue and Report of a Case of Achylia Gastrica; Dr. H. H. Oldright (St. Catherine's, Ontario), a Report of Cases of Electrical Burns and Lesions from Live Wires; Dr. W. Oldright (Toronto), Repair of the Sphincter Ani and Anal Fissure; Dr. Ingersoll Olmsted (Hamilton), Resection of the Splenic Flexure of the Colon—Malignant Disease—with exhibition of patient and specimen; Dr. Charles O'Reilly (Toronto), Remarks on Hospital Management; Dr. C. D. Parfitt (Gravenhurst, Ontario), the Selection of Cases for the Muskoka Free Hospital for Consumptives; Dr. H. C. Parsons (Toronto), Blood Examinations; Dr. J. F. W. Ross (Toronto), Operations for the Immediate Repair of the Genital Lesions of Childbirth; Dr. Rudolf (Toronto), Exophthalmic Goitre, its Medical Treatment; Dr. Paul L. Scott (Toronto), the Clinical Estimation of the Blood Pressure; Dr. C. B. Shuttleworth (Toronto). Exophthalmic Goitre, its Surgical Treatment; Dr. R. W. Bruce-Smith (Toronto), Preludes of Insanity; Dr. T. S. Webster (Toronto), Hysterectomy by Bisecting the Uterus, when indicated; Dr. Hadley Williams (London, Ontario), Tuberculous Adenitis; and Dr D. J. Gibb Wishart (Toronto), the Lymphoid Tonsillar Circle, the Faucial and Lingual Tonsils. It was decided to meet in Toronto in 1906 at the time when it is expected that the British Medical Association will meet there. The following officers were elected for the ensuing year: President, Dr. George A. Bingham, Toronto; treasurer, Dr. F. Fenton, Toronto; secretary, Dr. Charles P. Lusk, Toronto; and assistant secretary, Dr. Samuel Johnston, Toronto.

Ontario Medical Council: Annual Meeting.

The Ontario Medical Council met in Toronto in annual session during the week ending July 8th, when the following officers were elected for the ensuing year: President, Dr. Albert A. Macdonald, Toronto; vice-president, Dr. W. H. Moorhouse, London; registrar, Hon. Dr. R. A Pyne, Toronto; treasurer, Dr. H. Wilberforce Aikens, Toronto; and auditor, Dr. J. C. Patton, Toronto. During the progress of the meeting several interesting and important matters concerning the profession in the province of Ontario were taken up and attended to. On the report of the official prosecutor being presented action was taken on that part of it which referred to the prosecution of Christian Scientists and it was decided to approach the legislature of the province to seek an amendment to the Medical Act which would empower the council to deal with these people. A special committee was also appointed to wait on the legislature to solicit a substantial grant toward the erection of sanatoriums for consumptives in different sections of the province. Still another matter of importance dealt with was the appointment of a special committee to wait upon the Government to request the establishment of a department of public health for the province. The official prosecutor reported that during the past official year 52 cases had been dealt with. Of this number convictions had been secured in 24 cases, nine had left the country, 11 were dismissed, and six were not proceeded with, which goes to show that quacks do not thrive to any extraordinary extent in the province of Ontario.

July 25th.

NEW ZEALAND.

(FROM OUR OWN CORRESPONDENT.)

Honorary Degree conferred on Dr. D. Macgregor.

THE honour bestowed upon our Inspector-General of Hospitals, Dr. D. Macgregor, by the University of Aberdeen is keenly recognised by the profession here. Previously to being asked to rule the asylums and hospitals Dr. Macgregor was lecturer on moral philosophy at the medical school at Dunedin. There are few more fearless or eloquent servants of this or any other State than the newly elected LL.D.

The Prevention of Tuberculosis.

The movement for providing annexes for the reception and treatment of indigent consumptives is spreading. Christchurch has made a beginning and public meetings have been called in Invercargill. The paper read by the Minister of Health (Sir J. G. Ward) at the last meeting of the Intercolonial Association for the Advancement of Science held at Dunedin has been productive of great good.—Lady Plunket (wife of His Excellency the Governor) opened the Women's Colony of Nurse Maud's Camp at Christchurch last week. The report stated that the percentage of "cures" obtained at this open-air camp for consumptives was higher than that of many of the sanatoriums on the continent of Europe. Nurse Maud is deserving of high praise for her work on behalf of the indigent consumptive.

The Parliamentary Session.

Parliament will meet on June 27th and it is reported that among the measures to be introduced will be a Food and Drugs Bill, a Medical Registration Act, a Hospitals Act, and some amendments to the Public Health Act. There is urgent need for some alterations in the law regulating medical practice At present, although a New Zealand student is required to follow out a five years' course of study, anyone with a three years' medical education at almost any school in any country can be admitted to our register.

Conference on Dentistry.

The dentists held a most successful conference this month in Wellington. There were upwards of 100 in attendance at some of the meetings. Among the papers of more general interest and value was one by Mr. Thompson of Christchurch on the Care of the Teeth of Children. He advocated among other measures the regular examination by State officers of the teeth of the children attending the State schools. As a result of his advocacy a deputation waited upon Sir J. G. Ward, Minister of Health, who gave them a most cordial reception. He stated that he realised the value of the suggestions made and promised to lay the question of State examination before the Cabinet. The President (Mr. E. Rawson) gave a most interesting account of dentistry in the early days of the colony.

Treatment of Moveable Kidney.

At the meeting of the Wellington branch of the British Medical Association last week Dr. W. E. Collins of Wellington read a paper recounting the results of his operation for moveable kidney. The main features in the operation are the stripping of the capsule, more especially at the upper pole; the fixation of the kidney in its normal position while the patient is in the Trendelenburg position; the passing of the ligatures for the anchorage through the lower end of the kidney; and the keeping of the patient in such a position after the operation that there will be the least possible disturbance to the organ caused by coughing, vomiting, &c. The kidney by this method of operation is fixed in its normal position with very little injury to the kidney itself or disturbance of the surrounding parts.

Various Items of News.

His Excellency the Governor presided at a meeting held in Dunedin last week having for its object the raising of funds for additions to the hospital of the "Edinburgh of the Antipodes."—The recently appointed professor of physiology to the medical school took up his duties at the beginning of the month and was welcomed by his fellow teachers. Hitherto Professor J. H Scott, who has done so much for the school, has held both the chairs of anatomy and physiology.—At the Intercolonial Medical Congress to be held in September at Adelaide, New Zealand will be represented by Dr. J. M. Mason, the chief health officer of the colony.

The New Zealand International Exhibition.

The Government of New Zealand has decided to hold an international exhibition at Canterbury in that colony from November, 1906, to the early part of April, 1907. One of the principal objects of the exhibition is to demonstrate the resources and possibilities of the colony as a food-producing ountry and a tourist resort and to bring under the notice of ndustrial nations the great field for enterprise which it ffers for the use of manufactured articles. Applications for pace may be lodged with the Agent-General for New Zealand, Westminster Chambers, 13 Victoria-street, London, or with the secretary of the exhibition, Christchurch, New Zealand.

Wellington, June 12th.

Obituary.

GIOVANNI ANGELO CALCINARDI.

THE great and growing Italian colony in South America has lost one of its most prominent representatives in Dr. G. A. Calcinardi, whose death is just reported from Pando in the Uruguayan Republic. Born 70 years ago at Desenzano in the province of Brescia, he studied medicine at Padua, but, like nearly all his generously inspired fellow students, he was swept into the revolutionary vortex and, less fortunate than others, was arrested by the Austrian authorities, tried, and condemned to death. Having, however, escaped from prison he took refuge in Piedmont and completed his studies at Turin and in Paris, taking in due course his degree as doctor. By this time (1860) the movement towards Italian unity and independence was in full career and young Calcinardi was among the volunteers who joined Garibaldi in the descent on the Two Sicilies. In that brilliant raid, at once Quixotic and successful, he was repeatedly under fire but outlived all its dangers to resume professional work in the regular army where he became "capitano medico." Two years afterwards, when Garibaldi raised the cry of "Roma o Morte," young Calcinardi succumbed to the spell of his old leader, threw up his appointment in the army, shared in the disastrous day of Aspromonte, and was again condemned to death, on this occasion by the Italian Government. The sentence, however, was not carried out and in 1867 Garibaldi found his enthusiastic volunteer for the third time by his side in the next raid upon Rome, which closed (once more in disaster) on the field of Mentana. Excluded from his former career on the army medical staff, while pardoned by the Government, he repaired to South America, where in general practice he rapidly realised a fortune which enabled him to gratify his longing to see Italy once more. Settling in Milan he again succeeded in winning a large *clientèle*, his earnings from which he devoted to charity, public and private, on a munificent scale. Interested in the problem of emigration and all that it means for the poor Italian emigrant he took service on board one of the transatlantic liners and followed up his inquiries on American soil. His mission completed he resumed practice again at Milan, whence he moved to Carpesina and then to his native Desenzano. Here he was assisted by his son, by this time a graduate in medicine, whom, for the furtherance of his professional career, he accompanied to Uruguay, where they both practised in concert. Of late years, however, the fatigues of his chequered and self-sacrificing life had begun to tell upon him, exceptionally robust as he was in constitution and character; so, after struggling awhile against daily increasing infirmity, he succumbed on May 27th, leaving behind him in his native Italy and in the Italian colony of South America the memory of a nobly inspired enthusiast in the cause of his country and of his fellow men.

GLOUCESTER HOSPITAL FOR CHILDREN.—The Bishop of Gloucester formally opened on July 26th a new dispensary which has been added to the Gloucester Children's Hospital as a memorial to the late Mr. Gambier Parry.

Medical News.

UNIVERSITY OF OXFORD.—At examinations held recently the following were successful in the subjects indicated:—

FINAL HONOUR SCHOOL OF PHYSIOLOGY.—CLASS LIST.

First Class.—O. L. V. Simpkinson, Corpus Christi, and D. Trimmer, Christ Church.

Second Class.—C. N. Binney, Corpus Christi; M. Davidson, Trinity; M. W. Flack, Keble; G. R. Hughes, Exeter; and P. T. Spencer Phillips, New College.

Third Class. P. H. C. Fowell, St. John's; J. F. Hornsey, Wadham; S. F. Moore, Trinity; and S. S. Strahan, Keble.

Fourth Class.—R. F. B. Bowes, Queen's; G. A. Hope, New College; W. D. Kennedy, University; A. J. W. Milroy, Christ Church; A. H. Savage, New College; and C. F. M. West, Christ Church.

Passed.—J. R. Kay-Mouat, Hertford.

PRELIMINARY EXAMINATION.—PASS LISTS.

Mechanics and Physics.—H. C. Bazett, Wadham; A. M. Carr Saunders, Magdalen; N. G. Chavasse, Trinity; T. Clear, Balliol; D. Edwardes-Ker, Brasenose; H. Hinds, Queen's; G. A. Hutchinson and G. L. M. Inkster, Balliol; E. G. Laws, Non-collegiate; W. O. Little, New College: H. H. W. Lydall, Merton; D. P. McDonald, Oriel; L. N. Morrison, St. John's; W. J. Oliver, Oriel; W. G. Pinching, St. John's; J. P. Purnell Edwards, Christ Church; J. Russell, Balliol; C. J. G. Taylor, University; W. H. Thornton, Trinity; J. T. Wills, Non-collegiate; M. Wilson, Hunter-Blair's Hall; C. C. Wilson, Queen's; R. C. Wingfield, Trinity; and C. F. Younger, New College.

Physics.—T. Bentham, Queen's; G. C. Boyd and M. de G. Boyd, Lincoln; G. W. Carte, New College; A. R. Chavasse and A. W. Donaldson, Hertford; A. M. Lupton, Trinity; J. W. Mason, Jesus; G. H. Udall, Queen's; G. H. Varley, St. John's; and W. E. Waller, University.

Chemistry.—E. Bate, St. John's; H. C. Bazett, Wadham; W. F. G. Blackler, Trinity; G. C. Boyd and M. de G. Boyd, Lincoln; A. J. B. Carrington, University; A. R. Chavasse, Hertford; N. G. Chavasse, Trinity; T. Clear, Balliol; P. G. Doyne, Trinity; D. R. Edwardes-Ker, Brasenose; P. R. Fairclough, St. John's; C. L. Garton, Magdalen; T. H. J. Gillam, Hertford; J. K. Hepburn and G. B. Holmes, Queen's; G. A. Hutchinson and G. L. Inkster, Balliol; E. G. Laws, Non-collegiate; J. M. Mason, Jesus; H. G. Morris, University; W. J. Oliver, Oriel; A. S. Roe, Balliol; D. Roy, Wadham; E. P. Sells, Christ Church; G. Stanger, Lincoln; C. J. G. Taylor, University College; G. E. Thornton, Oriel; G. H. Udall; Queen's; M. Wilson, Hunter-Blair's Hall; C. C. Wilson, Worcester; R. C. Wingfield, Trinity; J. H. Worthington, Wadham; and C. F. Younger, New College.

Zoology.—T. B. Batchelor, University; H. C. Bazett, Wadham; P. N. Cave, University; G. H. Cross, Balliol; A. W. Donaldson, Hertford; C. C. Gaunt, St. John's; and H. G. Morris, University.

Botany.—P. P. Andrews, University; H. C. Bazett, Wadham; J. L. Birley, University; W. F. G. Blackler, Trinity; A. M. Carr-Saunders, Magdalen; P. N. Cave, University; H. E. Clarke, Jesus; G. H. Cross, Balliol; G. B. Downs, Magdalen; C. C. Gaunt, St. John's; H. O. S. Gibson, New College; G. D. Knox, Balliol; E. L. Pearce-Gould, Christ Church; A. S. Roe, Balliol; H. W. Scott Wilson, Queen's; G. E. Thornton, Oriel; W. W. Wagstaffe, New College; R. O. Ward, Queen's; R. C. Wingfield, Trinity; and T. S. Wright, Brasenose.

UNIVERSITY OF EDINBURGH.—The following degrees and certificates were conferred on July 28th:—

Doctor of Medicine.—Francis John Harvey Bateman, England, M.B., C.M., 1893; Charles Mackie Begg, New Zealand, M.B., Ch.B., 1903; ‡Raphael Aaron Belilios, India, M.B., Ch.B., 1901; John Francis Gibbs Bent, England, M.B., C.M., 1893; Harry Edward Bower, England, M.B., C.M., 1887; George Edward Bowker, England, M.B., C.M., 1891; Arthur John Brock, Scotland, M.B., Ch.B., 1901; ‡Robert Dods Brown, Scotland, M.B., Ch.B., 1902; †James Burnet (M.A.), Scotland, M.B., Ch.B., 1898; Osmund Harry Chapman, England, M.B., C.M., 1894; ‡Harry Lovett Cumming, Scotland, M.B., Ch.B., 1902; †James Davidson, Scotland, M.B., Ch.B., 1903; †George Augustus Davies (B.A.), England, M.B., Ch.B., 1903; †Frank Inglis Dawson, Scotland, M.B., Ch.B., 1902; *William Elliot Carnegie Dickson (B.Sc.), Scotland, M.B., Ch.B. (with first class honours), 1901; †Thomas George Boswall Dodds, Scotland, M.B., Ch.B., 1901; †Henry John Dunbar, Scotland, M.B., Ch.B., 1902; ‡John Munro Dupont, England, M.B., Ch.B., 1901; *John Eason, Scotland, M.B., C.M. (with first class honours), 1895; *Duncan Campbell Lloyd Fitzwilliams, Wales, M.B., Ch.B., 1902; Edmund Frost, England, M.B., C.M., 1893; *Robert Valpy Fulton, New Zealand, M.B., C.M., 1889 (*in absentiâ*); Robert Gibson, Scotland, M.B., Ch.B. 1898; Charles Francis Giddy, England, M.B., C.M. 1886 (*in absentiâ*); Roderick M'Kenzie Grant, Scotland, M.B., Ch.B., 1901; †Edward David Wilson Greig (B.Sc.), Scotland, M.B., Ch.B., 1895; †Patrick Stevenson Haldane, Scotland, M.B., Ch.B., 1900; *Andrew Alexander Hall, Scotland, M.B., Ch.B. (with first class honours), 1903; Arthur Rupert Hallam, England, M.B., Ch.B., 1901; †Percy William Hampton, Isle of Man, M.B., Ch.B., 1899; ‡Robert Hardie, Scotland, M.B., C.M. 1892 (*in absentiâ*); ‡Irvine Kempt Hermon, Scotland, M.B., Ch.B., 1899; ‡Alice Marion Hutchison, Scotland, M.B., Ch.B., 1899; Andrew Edwin Hunter, Scotland, M.B., Ch.B., 1901; Hugh Jameson, Scotland, M.B., C.M., 1885; ‡Peter Jones, Wales, M.B., C.M., 1889; ‡Clement Thomas Cory Kingdon, England, M.B., C.M., 1893; ‡Robert Murray Leslie (M.A., B.Sc.), Scotland, M.B., C.M. (with first class honours), 1892; ‡William Gordon Little (M.A.), Scotland, M.B., C.M., 1894; Robert John McClelland, Ireland, M.B., Ch.B., 1900; John Cunningham McConaghey, India, M.B., Ch.B., 1895; Alastair MacGregor, Scotland, M.B., C.M., 1885; †William McLachlan (B.Sc.), Scotland, M B, Ch B, 1901, ‡James MacNidder, Scotland, M B, C M, 1889, James Donald Macrae, Scotland, M B, C M (with second class honours), 1901, ‡George Robertson Mill, Scotland, M B Ch B (with second class honours), 1901 (*in absentiâ*), ‡Francis Watson More, Scotland, M B, Ch B, 1897, ‡Upendra Nath Mukerji, India, M B, C M, 1883 (*in absentiâ*), Sarat Kumar Mullick, India, M B, C M, 1897 (*in absentia*), Charles Graham Murray, Barbadoes, M B, C M, 1893, ‡George Stewart Murray, Scotland M B, Ch B, 1901 ‡Alexander Nasmyth, Scotland, M B, C M, 1889 William Harwood Nutt, England, M B, Ch B, 1903, Thomas Edward Nuttall, England M B, C M, 1892, Alexander Howard Pirie (B Sc), Scotland, M B, Ch B, 1897, Catherine Mary Richardson, England, M B, Ch B, 1900, ‡Robert George Riddell, Scotland, M B, Ch B, 1897, ‡Hugh Moreton Roberts Wales M B, Ch B, 1901, ‡John Keith Alexander Robertson, Scotland, M B, Ch B, 1901, ‡William Robertson, England, M B, C M, 1893, William Arthur Robinson (M A, B Sc), New Zealand, M B, Ch B 1901 Robert George Robson (M A), Scotland, M B C M, 1905, ‡Thomas William Edmondston Ross Scotland, M B, Ch B (with Second class Honours) 1902 ‡William Elmsley Scott-Moncrieff, Scotland, M B, C M, 1893, James Scott Sewell, England, M B, Ch B (with Second class Honours), 1902, ‡Samuel Ramsay Sibbald, Scotland, M B, Ch B, 1900, ‡George Freeland Barbour Simpson Scotland, M B, Ch B, 1898 Alan Butler Slater, England, M B, Ch B, 1899, ‡Frederic Skey Stanwell, England, M B, C M, 1895, Cecil Edward Stephens, England, M B, C M, 1892 ‡Donald Alexander Stewart (M A) Scotland M B, Ch B, 1901, Arthur Henry Thompson England M B Ch B, 1898, Charles Percivale Bligh Wall England M B, Ch B 1897 (*in absentia*), ‡Ward Ward Smith, England, M B, Ch B, 1898, and *Benjamin Philip Watson, Scotland, M B Ch B (with first class honours), 1902

Master of Surgery—†Lionel Charles Peel Ritchie, Scotland, M B, Ch B, 1900

* Awarded gold medals for their theses
† Highly commended for their theses
‡ Commended for their theses

Bachelor of Medicine and Master in Surgery—John Clark, Scotland, Harold Downes, England George Arthur Grierson, Scotland, and Robert Whitson Telford, Australia

Bachelor of Medicine and Bachelor of Surgery—Thomas Addis, Scotland, Francis Aitken, Scotland, James Cyril Dalmahoy Allan, Scotland, Arthur Cecil Alport, England, Alexander Grant Anderson, M A., B Sc, Scotland, William Anderson, Scotland, Mukhtar Ahmed Ansari, B A, India, Francis Baillie Ireland, George Smith Banks Scotland, §Duncan M'Farlan Barker, Scotland, James Morgan Barkley, Ireland George Galen Bartholomew, Scotland, Benjamin Baty, England, Whiteford John Edward Bell, Scotland, Norman Black, Scotland, Richard Bladworth, Scotland, Charles Edward Blair, Ireland, George Blair Scotland, Richard Alfred Blake, England, Herbert Maughan Brown, England, James William Cairns Scotland, Thomas Campbell Scotland, ‖Herbert Macpherson Cargin, Ireland (*in absentia*), Norman Scott Carmichael, Scotland, John Chisholm, Scotland, Henry Pattullo Cook, Scotland (*in absentia*), Grancis William Cragg England, John Gibson Craig, Scotland, James Alexander Cruickshank Scotland, William Henry Cusack, Ireland, Arthur Dangerfield Scotland, Thomas Davidson M A, Scotland, ‖James Mollison Dickson, Scotland, Marcus Graham Dill, Scotland, David Eakin, Ireland Hugh Anderson Edwards, Scotland, Edward Alexander Elder M A B Sc Scotland, Chatterton Eric Elliston, England, Henry Felix Fenton, England, Francis Edwin Field, British Guiana, Charles Napier Finn, New Zealand, Noel Constable Forsyth, Scotland, ‖Robert Skeoch Frew, Newfoundland, Willy Gerson Frohlich, Switzerland, John Frederick Gallaher, Ireland, Louis Patrick Mackenzie Gardner, Scotland, Hugh Selwyn Gaskell, England, William Gemmill, M A., Scotland, Ernest Gardiner Girdwood, South Africa, James Anderson Glover, M A, Scotland, John Macpherson Grant Scotland, Joseph Green, England, §Charlotte Rose Greenfield, England, John Caldwell Grieve Scotland, Ernest Joseph Clifford Groves, England, §James Andrew Gunn, M A, B Sc, Scotland, James Turner Gunn, Scotland, George Hadden, Ireland, John Daniel Harmer, Scotland, Ada Annie Hatchard, England, Alfred Stirling Hendrie Scotland, William Morton Hewetson, England, Henry Scott Anderson Hogg Scotland, Jean Smith Hogg, Scotland, John Richard Holgate, England, John Hamilton Hume, Scotland, Joseph Ings New Zealand, Ada Jackson, England, James Peter Speid Jamieson, Scotland, Solomon Ezekiel Kark, Cape Colony, James Robertson Kerr, Scotland, Ethel Landon, England, John Mure Lauder, Scotland, James Lindsay, Scotland, John Lindsay, Scotland, Alexander Patrick Gordon Lorimer, Scotland James Anderson Loughridge, Ireland, Donald Hector Colin MacArthur, England, Peter M'Diarmid, Scotland, §Peter M'Ewan M A, Scotland, Thomas Arthur MacGibbon, B A, B Sc, New Zealand, John Douglas M'Kelvie England, James Mackenzie Scotland, Kenneth William Mackenzie, Scotland (*in absentiâ*), Murdo MacKinnon, Scotland, Archibald Cotterell M'Master, New Zealand, Stewart M'Naughton, England, §Charles M'Neil, M A, Scotland, Norman Neil George Cowan M'Vean, Scotland, William Magill, Ireland, §William Joseph *Maloney, Scotland* Samuel Edgar Martin Ireland, Edward Seys Massiah, British Guiana, ‖George Douglas Mathewson B Sc Scotland, Alexander Mathieson, Scotland, David Morley Mathieson, M A, Scotland, Archibald Ingram Miller, Scotland Harley Patterson Milligan, England, Charles Edward Sawers Mitchell, Scotland, John Stevenson Mitchell, Scotland, Carel Theodorus Moller, Cape Colony, Hector Baird Morris, Scotland, David Lyall Morrison, Scotland, Howard Mowat, Scotland, Robert Esmond Moyes, Scotland, Edmund Brodie Munro, Scotland, Alexander William Neill, Scotland, Robert Howard Nolan Ireland, George Percy Norman, England, Arthur John Rushton O Brien, England, Charles Richard O Brien, India, Arthur Adolphus Ollivierre Trinidad, James Stewart Orwin England, David Hutcheon Paul Scotland, John Lindesay Pearce, Scotland, §Harold Ernest Rawlence England, Douglas Gavin Reid Scotland, Arthur Owen Playford Reynolds, England, William Edward Reynolds, Portugal, James Robert Robertson Australia, William George Robertson, M A, Scotland, William Latto Robertson, M A, Scotland, §Johannes Zaccharias Human Rousseau, B A, Cape Colony Henry Marcelin Sauzier, Mauritius Thomas Scoresby Jackson, England, §William M'Donald Scott, Scotland, William Joseph Burns Selkirk, M A Scotland, Alfred Irving Shepheard Walwyn England, Douglas William Sibbald, New Zealand, Eustace Melvin Simmers, England, Archibald Simpson, Scotland, Edward Swan Simpson, Scotland, Oliver Smith, England, Stanley Alwyn Smith, England, Thomas
Ronaldson
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am Standley Mauritius
Robert Char
England, William John
Taggart, Ireland William Bow Tannahill, Scotland Annie Florence Theobalds England James Alexander Richard Thompson Scotland Edward Francis Valenzia Egypt, Fernand Louis de Verteuil, Trinidad (*in absentia*)
land, Helen Randall Vickers E
England, Robert Clive Walke
Washbourn, New Zealand, Hu
Joseph Douglas Wells England
Andrew Wight, Scotland, Elsi
Wilkins, England Hugh Cameron Wilson, Scotland, §James Young, Scotland James Theodore Young Cape Colony

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Special University
mates—Arthur Cecil Alport, M B, Ch B, Alexander Grant Anderson, M A, B Sc, M B, Ch B Mukhtar Ahmed Ansari B A, M B, Ch B Francis Baillie, M B, Ch B George Smith Banks, M B, Ch B Duncan M'Farlan Barker, M B, Ch B, Norman Black M B Ch B, Charles Edward Blair, M B Ch B, Richard Alfred Blake M B, Ch B, Herbert Maughan Brown, M B, Ch B Thomas Campbell, M B, Ch B, John Walker Cathles M B, Ch B, Duncan MacDonald Cochrane Church M B, Ch B ((*in absentiâ*) John Clark M B, C M, *Henry Pattullo Cook,* M B, Ch B (*in absentiâ*) Thomas Davidson M B, Ch B, James Mollison Dickson, M B, Ch B, Robert Skeoch Frew M B, Ch B Louis Patrick Mackenzie Gardner, M B, Ch B, Hugh Craigie Gibson M B, C M (*in absentia*), Ernest Gardiner Girdwood, M B, Ch B Vinayak Ramshandra Gorakshakar, M B, Ch B (*in absentiâ*) John Caldwell Grieve, M B, Ch B Elizabeth Catherine Gunn M B, Ch B (*in absentia*), John Daniel Harmer, M B Ch B, Alfred Stirling Hendrie, M B, Ch B, William Morton Hewetson, M B Ch B, Henry Scott Anderson Hogg M B Ch B Jean Smith Hogg, M B, Ch B, Ada Jackson, M B Ch B Solomon Ezekiel Kark, M B, Ch B James Robertson Kerr, M B, Ch B Ethel Langdon, M B, Ch B, James Lindsay, M B, Ch B James Anderson Loughridge M B Ch B, Peter M'Ewan, M A M B, Ch B, Kenneth William Mackenzie, M B, Ch B (*in absentia*) Archibald Cotterell M'Master, M B, Ch B, Norman Neil George Cowan M'Vean, M B, Ch B William Joseph Maloney M B, Ch B, Samuel Edgar Martin, M B, Ch B Edward Seys Massiah, M B, Ch B, Alexander Mathieson, M B, Ch B, Charles Edward Sawers Mitchell, M B, Ch B, Edmund Brodie Munro, M B, Ch B, Alexander William Neil, M B, Ch B George Percy Norman M B, Ch B, Arthur John Rushton O Brien, M B, Ch B, Arthur Adolphus Ollivierre M B, Ch B William Edward Reynolds M B, Ch B, William George Robertson M A, M B, Ch B, Henry Marcelin Sauzier, M B, Ch B William McDonald Scott, M B, Ch B, Douglas William Sibbald
M B, Ch B, Edward Swan Si
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Ronaldson Smith, M B, Ch B,
van
Someren, M B, Ch B, Daniel W
B
Kenneth Andrew Moody Stuart, M
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Florence Theobalds, M B, Ch B, James Alexander Richard Thompson, M B, Ch B, Edward Francis Valenzia, M B Ch B Vattaparampil Sankara Valiathan, B A, M B, Ch B, Fernand Louis de Verteuil M B, Ch B (*in absentiâ*), Robert Clive Walker, M B, Ch B, Hubert Clinton Weber, M B, Ch B, Joseph Douglas Wells, M B, Ch B, Frank Phillips Wernicke M B, Ch B, Andrew Wight, M B, Ch B, and Hugh Cameron Wilson, M B, Ch B

The following Fellowships, medal, scholarships, and prizes have been awarded —Goodsir Memorial Fellowship, Duncan Campbell Lloyd Fitzwilliams M D., Ch B, Syme Surgical Fellowship, Frank Inglis Dawson, M D, Ch B., Milner Fothergill Medal in Therapeutics, John Eason, M D, C M, Ettles Scholarship, William Joseph Maloney, M B, Ch B, and William M'Donald Scott, M.B, Ch B, equal, Allan Fellowship in Clinical Medicine and Clinical Surgery, Harold Ernest Rawlence, M B, Ch B, Buchanan Scholarship in Gynæcology, Peter M Ewan, M A, M B, Ch B, James Scott Scholarship in Midwifery, William Joseph Maloney, M B, Ch B, Mouat Scholarship in Practice of Physic, George Douglas Mathewson, B Sc, M B., Ch B ; Charles Murchison Memorial Scholarship in Clinical Medicine, John Pool M'Gowan, M A, M B, Ch B ; M Cosh Graduate's and Medical Bursaries, William Joseph Maloney, M B, Ch B, Beaney Prize in Anatomy and Surgery, William M'Donald Scott, M B, Ch B., Conan Doyle Prize, Johannes Zacharias Human Rousseau, B A, M B, Ch B ; Dorothy Gilfillan Memorial Prize, Charlotte Rose Greenfield, M B, Ch B, Gunning Victoria Jubilee Prize in Zoology, Alexander Ninian Bruce, B Sc ; Whiteman Prize in Clinical Medicine, Charles M Neil, M A, M B, Ch B, and the Pattison Prize in Clinical Surgery, Fleet Floyd Strother Smith.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the sittings of the Scottish Conjoint Board held in Glasgow the following candidates passed the respective examinations —

First Examination (five years' course)—Robert Henry Jones, Pen y-groes, Dennis Cogan, Cork, Thomas Sholto Douglas, Glasgow, Jehangir Cawasji Balsara, Portobello, William George Hugh Brooks, Portobello, Robert Stobo Watt, Glasgow, Phiroza Malabari, Glasgow, and Daniel Murphy, Edinburgh.

Second Examination (five years' course).—Matthew H Fleming, Glasgow, Walter Biddell Glasgow; George Lindsay Irwin, Glasgow, Alexander Paul Dias, Portobello, and Abraham David Woolf, London.

Second Examination (four years' course).—George Munro Macleod, Glasgow.

Third Examination.—Hugh Graham Anderson, Newlands, Glasgow, James Logan, Maryhill, John Dawson, Queenstown, Ireland, Andrew Baxter, London, Alexander Dick, Belfast, John Arthur Smith, Kelvinside, and Kenneth James Logan Bannerman, Partick.

Final Examination (and admitted Licentiate of the Three Cooperating Authorities).—William Noble Walker, Greenock, William Wallace Dempster, Belfast; William Patrick Timmon, Navan, Meath, Ireland, Whitfield de Witt Henty, Edinburgh, Joseph Owens, Glasgow, John [illegible] ck on Shannon, Lorris Elijah Bor[illegible] olas Alexander, Dublin Herbert [illegible] awsajee Balsara, Portobello Juliu[illegible]. John Priestley Newton, Glasgow, [illegible] ech, Edinburgh, James Taylor, Dunalister, Castlehead, Paisley (with honours), Alexander Dick, Belfast, and John Gilbert Heathcote, Ardwick, Manchester.

CLERICAL, MEDICAL, AND GENERAL LIFE ASSURANCE SOCIETY.—Mr. Arthur Digby Besant, B.A., F.I.A., has been appointed secretary of this society and Mr. W. J. H. Whittall remains principal officer with the title of actuary.

NOISY DOGS.—At the Exeter police-court on July 25th a butcher was fined £1 and costs, under the new by-law, for keeping noisy dogs to the annoyance of his neighbours.

DONATIONS AND BEQUESTS.—Mr. J. Storrs Fry has given £1000 towards the cost of the isolation wards of the Bristol General Hospital, which are shortly to be erected at an estimated cost of about £5000.—The Royal Dental Hospital of London, Leicester-square, has received a donation of £100 from the Worshipful Company of Grocers.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Bills Withdrawn.

Two Bills have been withdrawn this week of which a word may be said. One was to prohibit persons who are not by examination and registration legally qualified to practise medicine and surgery from carrying on business as medical practitioners by means of companies formed under the Joint Stock Companies Acts. The other was to prohibit the carrying on of dental practice by unqualified persons by means of limited companies. Both were presented by Sir JOHN BATTY TUKE and supported by Sir JOHN BRUNNER, Mr. JAMES CAMPBELL, Mr. CATHCART WASON, Sir MICHAEL FOSTER, and Sir WALTER FOSTER. To have had any chance of success they should have been introduced in the early days of the session, they were not brought forward till a few weeks ago. The only advantage obtained, and, of course, it is one that is not to be ignored, is that the Bills have been printed and circulated.

The Registration of Nurses.

The Select Committee of the House of Commons appointed to consider the question of providing for the registration of nurses has shown expedition in agreeing upon its report. Elsewhere the text is given. It is probable that an effort will be made early in next session to secure Government action upon the lines of the report.

HOUSE OF COMMONS.

WEDNESDAY, JULY 26TH.

Midwifery Orders for Poor Women.

Sir WALTER FOSTER asked the President of the Local Government Board whether he had considered the difficulty which poor women might experience in getting assistance in their confinements in consequence of unregistered midwives being afraid to attend, as in the Smallburgh union, and whether he could take steps to point out to boards of guardians the duty of the relieving officer to grant midwifery orders to women destitute of the means of procuring medical attend- [illegible] t present I am not aware [illegible] cers generally do not realise [illegible] some inquiry on the subject [illegible] union.

THURSDAY, JULY 27TH.

The List of Poisons.

Sir JOHN LENG asked the Home Secretary whether, in view of the fact that the Council of the Pharmaceutical Society of Great Britain recently resolved that each of ten different articles should be declared a poison within the meaning of the Pharmacy Act, 1868, and that, in conformity with the report of the Departmental Committee on Poisons and the views of coroners and medical men these ten articles included acetanilide, soluble salts of oxalic acid, and sulphonal, he would explain why these three articles were excluded from the list of poisons approved by the Lords of the Privy Council and advertised accordingly in the *London Gazette* of July 18th.—Mr AKERS DOUGLAS answered: I have communicated on this matter with the Lord President of the Council, who informs me that the Lords of the Privy Council, after consideration of the substances covered by the terms of the resolution of the Pharmaceutical Society, and after taking expert advice upon the subject, decided, in the exercise of the discretion with which they are invested by Section 2 of the Pharmacy Act, 1868, to exclude from their approved list the three substances named in the question.

Roman Catholic Nurses in Southern Nigeria.

Mr SLOAN asked the Secretary of State for the Colonies whether the High Commissioner of Southern Nigeria acted on his own initiative in inviting at the beginning of the present year a sisterhood of French nuns to Calabar to take charge of the native Government hospital, where the inmates were non Catholic; for what period these nuns had been engaged, and whether it was intended to retain their services in preference to nurses who were not connected with religious orders.—Mr. LYTTELTON answered: The proposal that two Roman Catholic sisters should be employed as nurses in the native hospital at Calabar (which is a separate institution from the European hospital) was originally made to the Protectorate Government by the head of the Roman Catholic Mission at Calabar in September, 1903. There had previously been no women nurses at the native hospital and, as the proposal received the support of the principal medical officer and of the Acting High Commissioner, it was accepted on terms which were referred to, and approved by, me. It was stated in the terms of agreement that no undertaking could be given that the sisters would be employed for any stated period but if the system is found to work well I see no reason, on the information before me, why it should be changed.

Mosquito Nets and Fever.

Mr. CATHCART WASON asked the Secretary of State for the Colonies whether he was aware that railway employés in West Africa were constantly stricken with fever through old and defective mosquito nets and whether he would give instructions that the nets in use should be constantly reported on and that any employé refusing or neglecting to use the same should be liable to instant dismissal.—Mr LYTTELTON replied: I am not in a position either to corroborate or to deny what the honourable Member alleges as to the causing of fevers. I cannot, however, undertake to direct the holding of inquisitions as to whether railway employés use their nets or not. These employés are adult skilled workmen and must be regarded as having some personal intelligence and responsibility.

THE REGISTRATION OF NURSES: REPORT OF THE SELECT COMMITTEE.

The Select Committee of the House of Commons appointed to consider the expediency of providing for the registration of nurses has presented the following report to Parliament:—

The committee has examined 34 witnesses, among whom are included members of the medical profession, matrons of hospitals, superintendents of nursing institutions, nurses whose experience has been gained abroad as well as nurses who carry on their occupation in this country, a representative of the male nurses, representatives of various institutions and public bodies, including the Civil Service, besides ladies and gentlemen who are not professionally employed but who have given much time and work to the management of hospitals and asylums and to the study of nursing questions both in the centres of population and in the rural districts. Amidst many divergent views met with in this evidence there is a general opinion in favour of some change in the conditions under which nursing is carried on. The committee has observed this tendency in the evidence of the medical profession and in that of the nurses themselves. The evidence shows that a considerable improvement has taken place of late, both in the class of persons who undertake nursing and in the conditions under which they obtain their training and carry on their occupation. It has been asserted in some quarters that registration is rendered requisite by reason of the amount of illegality, immorality, and scandal which at present continues undiscovered and unchecked. It is contended that registration would be an efficient instrument against these scandals and would safeguard the public. In the judgment of the committee, while registration might prove a means towards checking some abuses no evidence which has been brought forward substantiates a general charge of moral delinquency. On the other hand, there is a general concurrence of opinion that in the interests of the nurses and of the public further improvement is both desirable and practicable and the committee considers that the desire for coordination of the various training schools, although not universal, is widespread. Upon the question of what changes in the conditions of nursing are desirable strong opinions are held and vigorous expression has been given to them. In these circumstances unanimity could not be looked for. The principal suggestions laid before the committee are:—(*a*) Registration of individual nurses, (*b*) registration of training schools for nurses, and (*c*) licensing of nursing homes, institutions, and societies which supply or employ nurses. The committee is agreed that it is desirable that a register of nurses should be kept by a central body appointed by the State and that, while it is not desirable to prohibit unregistered persons from nursing for gain, no person should be entitled to assume the designation of "registered nurse" whose name is not upon the register. It recommends that this central body should be set up by Act of Parliament and that its constitution should be defined in the Act, as was done in the case of the Central Midwives Board. The central body should consist of matrons, nurses, and representatives of the medical profession, of training schools for nurses, and of the public. The committee considers it desirable that the number of representatives should be kept within reasonable limits, it suggests 11 as a convenient number and recommends that it should never exceed 15. The committee recommends that the central body should admit to the register of nurses such nurses as have had a training at a recognised training school for nurses for a period to be determined by such body, and have satisfied their training school, whose certificate they must hold, stating that they are equipped with the knowledge and experience requisite for nursing and that they are of good character. It also recommends that the central body should decide what constitutes a recognised training school for nurses, taking into consideration the number of beds, the accommodation for probationers, the facilities afforded for learning, and the general standard and conduct of the examination, for this purpose the central body should have the power of inspection The committee further recommends that the examination be held at, and by, the training school For the purpose of defraying the expenses of the central body a small registration fee should be charged The committee considers that this fee should not exceed one guinea The committee has heard a large amount of evidence on the subject of the necessary period of training at a school The great bulk of this evidence points to three years as the requisite period of training It is impressed with the advisability of such a period but it recognises that a stereotyped rule might operate unfortunately It therefore recommends that the minimum period should not be fixed by Act of Parliament but should be left to the discretion of the central body There should be an annual publication of the register of nurses For this purpose the central body should make provision for striking off the register the names of those nurses who have died or who have ceased nursing, and also of those nurses who, in the opinion of the central body, have been guilty of serious misconduct in the discharge of their duty or of moral delinquency With regard to existing nurses the committee is of opinion that those who can produce evidence satisfactory to the central body both as regards efficiency and character should be placed upon the register on payment of the registration fee The committee is of opinion that it should be the duty of the central body at a date not later than four years after the passing of any Act for the registration of nurses to submit a report to the Privy Council on the advisability of instituting a separate register of nurses whose training is of a lower standard than that laid down for "registered nurses" The claims for registration of mental or asylum nurses have been laid before the committee It is of opinion that a separate register of "registered asylum nurses should be kept by the central body to which should be admitted the names of nurses who have served for not less than three years (in not more than two asylums), and have received the certificate of the Medico Psychological Association, and can produce satisfactory certificates of good character An analogous but separate question has come before the committee—namely, the treatment of nursing homes [illegible] homes are deemed to include all homes and [illegible] where patients are taken in for treatment [illegible] meant those societies or bodies which supply nurses to the public. The evidence laid before the committee has led it to consider the licensing of such homes and institutions to be highly desirable The licence should be issued by the county or county borough authority in whose area the home or institution is situated, and no such home or institution should receive the licence unless it is conducted in conformity with requirements to be laid down by that authority The county or county borough authority should be empowered to draft regulations to be approved by the Local Government Board and to appoint inspectors who should have the right of entry and inspection It should be a condition of such licence that when a nurse employed in a nursing home or sent out by a nursing institution is not a "registered nurse" the fact shall be definitely stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub Editor, not later than 9 o clock on the Thursday morning of each week, such information for gratuitous publication*

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[illegible] M B M S Edin, has been appointed [illegible] geon to the Huddersfield Infirmary

[illegible] Ch, D P H Vict, has been appointed Certifying Surgeon under the Factory and Workshop Act for the Prescot District of the county of Lancaster

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For further information regarding each vacancy reference should be made to the advertisement (see Index)

ALDERSHOT URBAN DISTRICT COUNCIL —Medical Officer of Health and Superintendent of the Isolation Hospital Salary £300 per annum (being £275 as Medical Officer of Health and £25 as Medical Superintendent of the Isolation Hospital, &c)

BIRKENHEAD BOROUGH HOSPITAL.—Senior and Junior Resident House Surgeons Salaries £100 and £80 respectively, with fees

BOURNEMOUTH, ROYAL VICTORIA HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging

BOURNEMOUTH, ROYAL NATIONAL SANATORIUM —Resident Medical Officer Salary £10 per month, with board residence and washing

BURY INFIRMARY —Senior House Surgeon Salary £110 with board, residence, &c.

DOUGLAS, ISLE OF MAN, NOBLES ISLE OF MAN HOSPITAL AND DISPENSARY —Resident House Surgeon, unmarried Salary £90 a year, with board and washing

EXETER CITY ASYLUM —Assistant Medical Officer Salary £150 a year with board, lodging, and washing

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £100, with board, residence, and laundry Also Assistant House Surgeon Salary £50, with board, residence, and laundry

IRELAND, MEDICAL SCHOOL, ROYAL COLLEGE OF SURGEONS.—Senior Demonstrator of Anatomy Stipend £100 per annum

KENSINGTON WORKHOUSE AND INFIRMARY —Second Assistant Resident Medical Officer Salary £80 per annum, with apartments, board, and washing

[illegible] ENTIVE MEDICINE.—Assistant Bacteriologist.

[illegible] COLLEGE OF MEDICINE (UNIVERSITY OF DURHAM) —Lecturer in Medical Jurisprudence

ROXBURGH DISTRICT ASYLUM, Melrose, N B —Assistant Medical Officer Salary £140 per annum, with board, rooms &c

SALOP INFIRMARY, Shrewsbury —House Surgeon Salary £100 per annum, with board, washing, and residence

SHEFFIELD ROYAL INFIRMARY —Junior Assistant House Surgeon. Salary £65 per annum, with board lodging, and washing Also Junior House Physician Salary £60 per annum, with board, lodging, and washing

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician Salary £100 per annum, with rooms, board and washing

STRAITS SETTLEMENTS, MUNICIPALITY OF THE TOWN OF SINGAPORE.—Assistant Municipal Health Officer. Salary £400 per annum, rising to £450

THE Chief Inspector of Factories, Home Office, S W, gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Westbury, in the county of Salop, and at Gargrave, in the county of York

Births, Marriages, and Deaths.

BIRTHS.

BABTIE —On July 31st, at Carlisle mansions, S W, the wife of Lieutenant Colonel W Babtie, V C, C M G, Royal Army Medical Corps, of a daughter

MICHÔD —On July 26th, at Roma, Queensland, the wife of F A Hope Michod, M B Lond, M R C S, L.R C P, of a son

MARRIAGE.

BATESON—GLADSTONE —On July 26th, at Childwall Parish Church, Surgeon Major John Francis Bateson, Coldstream Guards to Helen Steuart, daughter of Robert Gladstone, of Woolton Vale, near Liverpool

DEATHS.

BLAKE —On July 31st, at Seymour street, W, Edward Thomas Blake, M D, M R C S Eng, aged 63 years

FRAZER On July 26th, at Elmhurst, Bournemouth, William Frazer, M D, aged 54 years

GRANT —At 26, Dundas street, Edinburgh, on July 27th, Louisa Elizabeth, widow of the late James Dundas Grant, Advocate, and mother of J Dundas Grant, Leonard Grant, C Graham Grant, and Hope Grant, London, in her eighty first year

MORRIS —On July 30th, at Hamilton House, Leamington, Joseph Morris, M R C S L R C P, L S A, aged 70 years

OAKESHOTT —On July 27th, of pneumonia, Walter Field Oakeshott, M.D, M R C S, L R C P, of Lydenburg, Transvaal

N.B.—A fee of 5s is charged for the insertion Notices of Births, Marriages, and Deaths.

afforded for learning and the general standard and conduct of the examination, for this purpose the central body should have the power of inspection The committee further recommends that the examination be held at, and by, the training school For the purpose of defraying the expenses of the central body a small registration fee should be charged The committee considers that this fee should not exceed one guinea The committee has heard a large amount of evidence on the subject of the necessary period of training at a school The great bulk of this evidence points to three years as the requisite period of training It is impressed with the advisability of such a period but it recognises that a stereotyped rule might operate unfortunately It therefore recommends that the minimum period should not be fixed by Act of Parliament but should be left to the discretion of the central body. There should be an annual publication of the register of nurses For this purpose the central body should make provision for striking off the register the names of those nurses who have died or who have ceased nursing, and also of those nurses who, in the opinion of the central body, have been guilty of serious misconduct in the discharge of their duty or of moral delinquency With regard to existing nurses the committee is of opinion that those who can produce evidence satisfactory to the central body both as regards efficiency and character should be placed upon the register on payment of the registration fee The committee is of opinion that it should be the duty of the central body at a date not later than four years after the passing of any Act for the registration of nurses to submit a report to the Privy Council on the advisability of instituting a separate register of nurses whose training is of a lower standard than that laid down for "registered nurses The claims for registration of mental or asylum nurses have been laid before the committee It is of opinion that a separate register of "registered asylum nurses should be kept by the central body to which should be admitted the names of nurses who have served for not less than three years (in not more than two asylums), and have received the certificate of the Medico Psychological Association, and can produce satisfactory certificates of good character An analogous but separate question has come before the committee—namely, the treatment of nursing homes . . . homes are deemed to include all homes and where patients are taken in for treatment meant those societies or bodies which supply nurses to the public. The evidence laid before the committee has led it to consider the licensing of such homes and institutions to be highly desirable The licence should be issued by the county or county borough authority in whose area the home or institution is situated, and no such home or institution should receive the licence unless it is conducted in conformity with requirements to be laid down by that authority The county or county borough authority should be empowered to draft regulations to be approved by the Local Government Board and to appoint inspectors who should have the right of entry and inspection It should be a condition of such licence that when a nurse employed in a nursing home or sent out by a nursing institution is not a "registered nurse' the fact shall be definitely stated.

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EXETER CITY ASYLUM —Assistant Medical Officer Salary £150 a year, with board, lodging, and washing

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £100, with board residence, and laundry Also Assistant House Surgeon Salary £50, with board, residence, and laundry

IRELAND, MEDICAL SCHOOL, ROYAL COLLEGE OF SURGEONS —Senior Demonstrator of Anatomy Stipend £100 per annum

KENSINGTON WORKHOUSE AND INFIRMARY —Second Assistant Resident Medical Officer Salary £80 per annum, with apartments, board, and washing

LISTER INSTITUTE OF PREVENTIVE MEDICINE.—Assistant Bacteriologist. Salary £150 per annum

NEWCASTLE UPON TYNE, COLLEGE OF MEDICINE (UNIVERSITY OF DURHAM) —Lecturer in Medical Jurisprudence

ROXBURGH DISTRICT ASYLUM, Melrose, N B —Assistant Medical Officer Salary £140 per annum, with board, rooms, &c

SALOP INFIRMARY, Shrewsbury —House Surgeon Salary £100 per annum, with board, washing and residence

SHEFFIELD ROYAL INFIRMARY —Junior Assistant House Surgeon. Salary £65 per annum, with board lodging, and washing Also Junior House Physician Salary £60 per annum, with board, lodging, and washing

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician Salary £100 per annum, with rooms, board, and washing

STRAITS SETTLEMENTS, MUNICIPALITY OF THE TOWN OF SINGAPORE —Assistant Municipal Health Officer Salary £400 per annum, rising to £450

THE Chief Inspector of Factories, Home Office, S W , gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Westbury, in the county of Salop, and at Gargrave, in the county of York

Births, Marriages, and Deaths.

BIRTHS.

BABTIE —On July 31st, at Carlisle mansions, S W , the wife of Lieutenant-Colonel W Babtie, V C , C M G , Royal Army Medical Corps, of a daughter

MICHOD —On July 26th, at Roma, Queensland, the wife of F A. Hope Michôd, M B Lond , M R C S , L R C P , of a son

MARRIAGE.

BATESON—GLADSTONE —On July 26th, at Childwall Parish Church, Surgeon Major John Francis Bateson, Coldstream Guards to Helen Steuart, daughter of Robert Gladstone, of Woolton Vale, near Liverpool

DEATHS.

BLAKE —On July 31st, at Seymour-street, W , Edward Thomas Blake M D , M R C S Eng , aged 63 years

FRAZER On July 26th, at Elmhurst, Bournemouth, William Frazer, M D , aged 54 years

GRANT —At 26, Dundas street, Edinburgh, on July 27th, Louisa Elizabeth, widow of the late James Dundas Grant, Advocate and mother of J Dundas Grant, Leonard Grant, C Graham Grant, and Hope Grant, London, in her eighty first year

MORRIS —On July 30th, at Hamilton House, Leamington, Joseph Morris, M R C S L R C P L S A , aged 70 years

OAKESHOTT —On July 27th, of pneumonia, Walter Field Oakeshott, M D , M R C S , L R C P , of Lydenburg, Transvaal

N.B —A fee of 5s is charged for the insertion Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 3rd, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
July 28	29 98	N.E.	0·04	101	74	58	60	64	Fine
„ 29	29 95	S.	...	126	76	62	62	66	Cloudy
„ 30	29 92	W.	...	130	76	60	60	62	Cloudy
„ 31	30 00	W.	...	129	72	57	57	64	Cloudy
Aug. 1	29 92	S.W.	...	122	73	57	55	62	Overcast
„ 2	29 91	W.	...	125	75	54	55	62	Fine
„ 3	29 57	S.W.	0·10	63	61	59	59	61	Raining

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.).

ESDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

EDNESDAY (9th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.) Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M., National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.).

HURSDAY (10th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.).

RIDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

ATURDAY (12th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

THURSDAY (10th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—4 P.M. Mr. Armour: Surgical Cases.

FRIDAY (11th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W).—5 P.M. Mr. Baldwin: Treatment of Injuries of Tendons, Muscles, and Nerves.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1905, which was completed with the issue of June 24th, and the Title-page to the Volume, were given in THE LANCET of July 1st.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1905 are now ready. Bound in cloth, gilt lettered, price 18*s*., carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s*., by post 2*s*. 3*d*.

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are :—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
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Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTICE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

During the week marked copies of the following newspapers have been received:—*Exeter Flying Post, British Food Journal, British Australasian, Birmingham Post, Halifax Guardian, Whitehaven News, Dewsbury District News, Morning Post, Western Times (Exeter), Manchester Courier, Dublin Independent, Cardiff News, Daily News, Times, Truro Gazette, Durham Chronicle, St. Austell Star, Bangor Observer, Morning Leader, Dublin Express, Bolton Chronicle, Middlesbrough Gazette, Leeds and Yorkshire Post, Manchester Evening News, Limerick Chronicle, Yorkshire Herald, Crusader, Notts Guardian, Darlington Star, Leicester Mercury, Norwich Eastern Daily Press, &c.*

"DR. WALFORD BODIE" AND HIS TITLES.

The following amusing letter has appeared recently in the Aberdeen *Evening Express* :—

> Sir,—I have just received a copy of your issue of the 11th inst. containing a report *re* the above. As your correspondent has not given you all the facts and as I am anxious that my fellow-townsmen should know the full particulars of the case I should feel obliged if you would grant me space in your valuable paper to allow me to give your readers a full explanation.
>
> In the first place I may tell you that I instructed my counsel, Mr. Avory, K.C., to admit that I had committed a technical offence, as my manager had omitted to add "U.S.A." after my M.D. degree when he sent the bill matter to the Camberwell Palace of Varieties. Still this omission does not take away the fact that I am a duly-qualified M.D. of a recognised university of America, chartered by the United States Government to confer degrees—a university of which several of our biggest practitioners hold degrees, the college in question being the Barrett College, Carolina, U.S.A. I hold my diplomas from said college as M.D. (Doctor of Medicine) and C.M. (Master of Surgery). I also hold diploma as D.Ph. (Doctor of Philosophy) and D.Sc. (Doctor of Science) and Medical Electric Therapeutics of the Chicago College of Medicine and Surgery. My English degrees and titles are are follows: F.R.C.I. (Fellow of the Royal Colonial Institute, London), F.R.M.S. (Fellow of the Royal Meteorological Society, London), F.R.W.S.M. (Fellow of the Royal Worshipful Company of Spectacle Makers, London), F.S.Sc. (Fellow of the Society of Arts, Letters and Literature of London), M.S.A. (Member of the Society of Arts, London), of which society the Prince of Wales is president, the last to receive the honorary title being the King of Spain.
>
> I have also attended the Guildhall, London, and have paid my fee and been nominated, and hope, when I return to town, to be granted the freedom of the City of London, my name on the list being next to Lord Curzon's. I was elected F.R.C.I. along with Lord Tennyson and several other men of note, so you will see, sir, that, in my short professional career, I have done nothing that any of my fellow-townsmen need be ashamed of. I have tried to uphold the dignity of my country and my native town; and I think, sir, that as a young man, you must admit I have been fairly successful. The sensation I have created in the great metropolis as a public demonstrator of the science of hypnotism, electricity, and bloodless surgery has been admitted by the press and public of London to be unprecedented.
>
> I return to London in October and am booked at all the leading West-End halls at the biggest salary ever paid to any artiste, and also specially engaged by Oswald Stoll, Esq., of the Coliseum, London, to appear at all his Empires, &c.
>
> And, now, sir, as you are a lover of fair play and having a little claim on you as a native of the Granite City, I trust you will kindly grant me space in your widely-read paper to insert this letter to show my fellow-townsmen my true position under the circumstances.—Thanking you in anticipation,
>
> I am, &c.,
> Walford Bodie,
> M.D., C.M., D.Ph., D.Sc., U.S.A.; F.R.C.I.,
> F.R.M.S., M.S.A. Lond.
>
> 11, Arundel-place, Leicester-square, London, July 12th, 1905.
>
> P.S.—Your report did not state that I was so pleased with the magistrate's decision that, in addition to the fine, I handed the clerk of the court £5 for the poor-box.

Re the above, Mr. P. J. Anderson, M.A., LL.B., librarian, University of Aberdeen, says in the course of a letter published by our contemporary on July 15th:—

> "As this is not the first occasion on which a 'degree' of 'Barrett College' has been obtruded on the notice of the readers of the *Express* it seems fitting to give publicity to the appended deliverance on the subject by the Commissioner of Education of the United States: 'The name of Barrett College in North Carolina does not appear on any of the lists of educational institutions published by this office and I have no information concerning it. The Barrett College and Industrial Institute at Pee Dee, North Carolina, is an institution for the education of coloured persons. All of its teachers are of the coloured race and it does not have any students in college classes. ...... The institution is classed as a secondary school.'"

GARBAGE FOR THE CONSUMPTION OF CHILDREN.

Salvatore Alloca, described as an ice-cream manufacturer, was ordered recently at Deptford police-court to pay fines amounting to £3, with 4*s.* costs, for storing "ice-cream" on premises which were in a dirty and insanitary state and for causing "ice-cream" to be manufactured in a room used as a living room. The evidence showed that in the room where the concoction was manufactured meals were eaten and as many as six men at a time smoked their pipes. The evidence of the medical officer of health dealt with the place of storage where he had seen cans of milk standing. It consisted of a small shed opening on to a yard with broken pavement and with water standing in the crevices. It was shown, also, that the defendant had previously been convicted of a similar offence. Prepared under the best conditions conceivable the "ice cream" sold to children in halfpennyworths from barrows in the street can scarcely be anything but an unwholesome mess and it would be a benefit rather than a loss to the community if its sale were forbidden altogether or subjected to such continual restrictions of inspection and analysis as to render a profitable trade in it impossible. Wise parents reading the reports of such cases as that referred to will forbid their children to buy "halfpenny licks" and will refuse to provide them with money to purchase such indulgences.

A MISLEADING DESCRIPTION.

To the Editors of The Lancet.

Sirs,—A firm of surgical instrument makers, Messrs. Hockin, Wilson, and Co., of 13 to 16, New Inn Yard, Tottenham-court-road, London, W., has been advertising and sending round a pamphlet advertising an all-metal hypodermic syringe of five minims capacity. A hypodermic syringe of that capacity would be a desirable instrument, the capacity being the usual recognised dose. I obtained one and a fortnight afterwards had occasion to use it when I found to my surprise that the syringe, which is not graduated, contained not five minims as stated, but ten minims or more. The result was an almost fatal effect to the patient. After testing the capacity of the syringe I at once wrote to Messrs. Hockin, Wilson, and Co., and their reply was that the error was made in printing their circular and that they much regretted it. Upon receiving their letter I suggested that they should let the press know to whom they had supplied the syringes and their reply was that they could not send another circular round. As this might have a serious result, in the interest of the medical profession and of the public, I feel bound to write this letter to you and the other medical papers to call attention to it.

I am, Sirs, yours faithfully,
Arthur Joseph O'Leary,
Honorary Anæsthetist, Liverpool Royal Infirmary.
Liverpool, July 22nd, 1905.

FASHIONABLE INTELLIGENCE!

To the Editors of The Lancet.

Sirs,—The following notice appears in the *Daily Telegraph* of to-day.

> "Dr. John H. Clarke, of 8, Bolton-street, Piccadilly, will leave London on Saturday next, August 5th, for Walcot, Norwich. He will be absent until August 30th."

I cannot think that the movements of Dr. Clarke or of any other practitioner should be publicly notified as above.

I am, Sirs, yours faithfully,
August 1st, 1905. Innocence.

⁂ Such a notice is much to be deprecated.—Ed. L.

MEDICAL WITNESSES AT CORONERS' INQUESTS.

To the Editors of The Lancet.

Sirs,—Are honorary medical officers to a hospital entitled to a fee for giving evidence before coroners in cases where the death takes place in the hospital, or does the Act only apply to paid medical officers? Thanking you in advance, I am, Sirs, yours faithfully,
July 29th, 1905. S. J.

⁂ The section of the Coroners Act dealing with the question our correspondent asks is Section 22. After mentioning the fees payable in the case of giving evidence at an inquest without making a post-mortem examination and for giving evidence as well as having made a post-mortem examination, the section goes on to state: "Where an inquest is held on the body of a person who has died in a county or other lunatic asylum, or in a public hospital, infirmary, or other medical institution, or in a building or place belonging thereto, or used for the reception of the patients thereof, whether the same be supported by endowments or by voluntary subscriptions, the medical officer, whose duty it may have been to attend the deceased person as a medical officer of such institution as aforesaid, shall not be entitled to such fee or remuneration."—Ed. L.

BOVININE AS A DRESSING.

To the Editors of The Lancet.

Sirs,—A gentleman who was under my care recently had suffered from very extensive necrosis of the right tibia. This when I saw him was completely healed, a deep furrow extending practically the whole length of the bone being present, the bottom of which was covered by thin shiny skin. The interest of the case lies in the point that, according to his statement, and I have no reason to doubt him, this healing process was brought about by means of bovinine, an extract of beef, with which it had been freely dressed. He told me that this preparation is extensively used in the United States (where he had been staying) as a dressing for callous cavities such as his, indolent ulcerating surfaces, &c. Whilst under my observation his scar broke down at its lower part, but was induced rapidly to heal by the above means. One feels tempted to inquire whether the meat extract acts as a phagocytic nutrient or merely as a stimulant to granulation formation; at any rate, it seems worthy of trial in suitable cases. I pen this note with some diffidence, for though new to me the subject-matter may be well known to others.

I am, Sirs, yours faithfully,
C. Francis Steele, M.B. Lond.
Matlock.

◆

J. V.—Our correspondent, though not medical, takes such an intelligent interest in the problem that we advise her to send a subscription to the Cancer Research Fund, Laboratory of the Conjoint Board, Thames Embankment, W.C., and ascertain what has been done by that fund.

The Croonian Lectures

ON

THE CHEMICAL CORRELATION OF THE FUNCTIONS OF THE BODY.

Delivered before the Royal College of Physicians of London on June 20th, 22nd, 27th, and 29th, 1905,

BY ERNEST HENRY STARLING, M.D. LOND., F.R.S.,
FELLOW OF THE COLLEGE; JODRELL PROFESSOR OF PHYSIOLOGY, UNIVERSITY COLLEGE, LONDON.

LECTURE II.[1]

Delivered on June 22nd.

THE CHEMICAL REFLEXES OF THE ALIMENTARY TRACT.

MR. PRESIDENT AND GENTLEMEN,—With the first appearance of multicellular animals and the setting apart of a distinct layer of cells, the hypoblast, for digestion and assimilation the activity of the cells is at first largely analogous to that of the previous unicellular organisms, each cell of the alimentary epithelium seizing and ingesting the food particles which reach the cavity of which the cells are a lining. The digestion is therefore at first largely intracellular and the ingestion of food particles must be determined partly by chemical and partly by tactile or mechanical stimuli arising in the food particles themselves. In the lowest of metazoa, however, cells are found which exercise their influence on external organisms by the production and excretion of poisonous material and a similar mechanism is soon evolved in the alimentary tract for the production of digestive fluids. An elementary type of digestive apparatus would therefore be a cavity lined with epithelial cells which are stimulated to the secretion of digestive juices by the chemical and mechanical stimuli arising from food which has been introduced into the cavity. The increase in these digestive cells necessitated by the greater bulk and greater activity of the animal arising with the elevation in type is procured in all the higher animals by the formation of outgrowths of cells from the lumen of the alimentary canal, outgrowths which give rise to the structures which we know as glands. The cells composing these glands are no longer subject to direct stimulation by any food present in the alimentary canal. Each act of secretion of digestive juices must therefore involve the transmission of a message of some sort or other from the lining epithelium of the alimentary canal to the gland in question—a transmission which is apparently analogous in all respects to the mechanism for the production of movements in response to external stimulation. In the higher animals all the motor reactions affecting skeletal muscles are carried out by reflex actions and involve the coöperation of the central nervous system. It is natural to suppose that the similar reactions affecting the chemical activity of glands should be carried out in the same way and the earliest investigations of the influence of the nervous system on glandular activity corroborated in all respects this supposition. The taking of food into the mouth, for instance, is at once followed by a flow of saliva due to an induced activity of the various salivary glands. This reaction was studied by Ludwig in the first half of the last century and the experiments of this investigator showed conclusively that the normal path for the message from mucous membrane of mouth to gland lay through the central nervous system. The nerves involved in the reflex secretion of saliva were determined, as well as their central connexions. In such a case as this, where all kinds of material—dry, fluid, pleasant, or harmful—may be taken into the mouth, a rapid response of the salivary glands is necessary to provide for the speedy swallowing of the food or to facilitate its expulsion from the mouth. When the food has once undergone a preliminary warming and moistening in the mouth and has been passed, so to speak, by the critical organs of taste and smell placed at the commencement of the alimentary tract a rapid reaction of the other glands of the alimentary canal—i.e., one occupying fractions of a second—would not seem to be absolutely necessary. The predominant part, however, played by the central nervous system in all the most direct reactive phenomena of the body led physiologists to search for similar reflex nervous mechanisms of secretion through the rest of the alimentary canal, and the firm faith that such nervous mechanisms existed was in no way damped by the difficulties experienced in the attempts to determine their existence and their paths. Thus for many years the only known method of exciting gastric secretion was the introduction of irritant substances into the stomach, apart, that is to say, from the taking of a meal which would excite in physiological fashion a secretion of gastric juice. In the case of the pancreas Heidenhain observed on a few occasions a scanty secretion from stimulation of the medulla oblongata but could not obtain this result at will. Succus entericus was obtained by some observers from intestinal fistulæ by mechanical stimulation of the mucous membrane and the so-called paralytic secretion of succus entericus was produced in certain circumstances in a denervated loop of intestine.

These were the sole indications of any influence of the nervous system on the secretions below the mouth until the subject was taken up by Pawlow at St. Petersburg. This observer realised that the last word could not be said on any physiological question until experiments had been made on an animal in an absolutely physiological condition—i.e., with normal blood pressure, free from fear or pain, and unpoisoned by anæsthetics. To effect this aim Pawlow has enriched physiologists with a new technique. By the exercise of scrupulous asepsis, and aided by his great surgical skill, he has succeeded in making observations on the digestive process in animals by providing them with fistulous openings into different parts of the alimentary canal, or with culs-de-sac which were in nervous and vascular continuity with the rest of the canal and whose activity could be taken as samples of the activity of the whole organ from which they were cut off. The results obtained by this physiologist seem at first to point to an extension throughout the alimentary canal of processes similar to those occurring in the mouth and to prove that every gland in the canal is excited reflexly through the central nervous system by the presence of the foodstuffs in different stages of digestion at the appropriate part of the lumen of the canal.

Thus the mere sight of food or the taking of pleasant food into the mouth excites reflexly through the vagi a reflex secretion of gastric juice and this secretion can be also evoked by artificial stimulation of the peripheral end of a cut vagus. The passage of acid chyme, of water, or oil, from the stomach into the duodenum excites the flow of pancreatic juice, the efferent channels, according to Pawlow, for the reflex being both the vagi and the splanchnic nerves, since secretion of pancreatic juice can be evoked by stimulation of either of these nerves. The secretion of succus entericus is less distinctly due to the intervention of a distant nervous system, since it is evoked in two circumstances—namely, (1) mechanical distension of the gut; and (2) introduction of inert pancreatic juice.

Previously to the publication of Pawlow's results no physiologist had succeeded in obtaining an invariable secretion of either gastric or pancreatic juice as the result of stimulation of any nerves. A few years after the description by Pawlow of the production of pancreatic secretion by stimulation at some point in the long reflex path—viz., from intestinal mucous membrane, through medulla and vagus or splanchnics to pancreas—it was shown by Wertheimer in France and by Popielski in Russia that the introduction of acid into the duodenum evoked a reflex flow of pancreatic juice even after division of the vagi and splanchnics or complete destruction of the spinal cord. These observers, therefore, regarded the reaction as belonging to the type of peripheral reflexes, the centre being located by them in the ganglion cells, somewhere in the wall of the intestine or the pancreas itself. Previous observations by Bayliss and myself had shown that the normal peristaltic movement of the intestine was a peripheral reflex, the paths of which lay wholly within the walls of the alimentary canal; and we were therefore interested to determine the conditions of the similar supposed reflex affecting the glandular activity of the pancreatic outgrowth of the canal. A few experiments sufficed to show that the so-called peripheral reflex secretion of pancreatic juice evoked by the introduction of acid into the duodenum or upper part of the small

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[1] Lecture I. was published in THE LANCET of August 5th, 1905, p. 339.

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answer to this question we are inclined to believe that the chemical mechanism is the only one involved in the secretion of pancreatic juice and that in all Pawlow's experiments where secretion was excited by the stimulation of nerves such as the vagus or splanchnics the effect on the pancreas was really a secondary one due to movements of the stomach arising as a result of the nerve stimulation and squeezing some of its acid contents into the first part of the small intestine. Other workers, however, such as Fleig and Wertheimer, believed that both mechanisms are at work—namely, that through the mucous membrane of the intestine the pancreas can be excited to secrete by both nervous and chemical means. We ourselves have never been able by nervous means to obtain secretion of pancreatic juice provided that we excluded all possibility of entry of acid into the upper part of the small intestine.

The discovery of this simple chemical nexus between alimentary canal and pancreas suggests at once the possibility of other mechanisms of the same description taking part in the complex chain of events involved in the digestion of our foodstuffs. Investigations on this point, carried out partly in my laboratory and partly by independent observers, have shown this belief to be justified and I propose in my third lecture to deal with the facts at present ascertained which point to a whole chain of such chemical reflexes throughout the alimentary tract.

NOTES ON AFRICAN PYGMIES.

BY G. ELLIOT SMITH, M.A. CANTAB., M.D., CH.M. SYD.,
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With a Note on Intestinal Worms found in African Pygmies by Dr. A. LOOSS, *Professor of Parasitology, the School of Medicine, Cairo.*

DURING their sojourn of the greater part of a month in Cairo the party of six pygmies brought by Colonel Harrison from the Ituri Forest in the Congo Free State lived in the School of Medicine and the adjoining Kasr-el-Aini Hospital where they were treated for the interesting form of ankylostomiasis described by Professor Looss in the note which accompanies this account. During the whole of this time the pygmies practically lived in the anatomical department of the School of Medicine, so that I have had ample opportunities for examining them and studying their behaviour. With the full consent of Colonel Harrison I have made a large series of measurements and have had numerous photographs and skiagrams made. For the excellent series of skiagrams used in this investigation I am indebted to Dr. Khayatt and I have to thank Mr. Herbert M. Nelson Milton for permitting these photographs to be taken in the Victoria Nursing Home.

Although the literature relating to pygmies is now quite voluminous I make no apology for adding these notes, scanty as they are, because they will clear away some of the confusion arising from the many conflicting statements and the errors of observation recorded in the earlier accounts. The arrival of these six individuals has afforded most of us who have seen them the opportunity of becoming personally acquainted for the first time with a race long known to us in fable and what has often been supposed to be a mere tradition as old as the oldest human civilisation—a race, moreover, of the greatest biological interest as being the smallest of mankind. The ancient history of this race has been so often and so fully discussed—whole treatises such as that written by De Quatrefages (1887) have been devoted to the subject—that it would be quite unnecessary to attempt to deal with this aspect of the question at any length. There are, however, one or two of the most crucial problems in the disputed interpretations of these early records that seem to be solved by the information now available.

It is not infrequently supposed that this is the first visit of any members of the true pygmy race to Egypt (or Europe), but this idea is quite erroneous, as everyone acquainted with the writings of Professor Schweinfurth, Sir William Flower, and Professor Stuhlmann must be aware. These little people have been preceded by several parties of their kinsmen within recent years and probably by numerous representatives of their race in ancient times. Professor Schweinfurth discovered (or rather rediscovered after a lapse of two centuries) the Akka pygmies in the Monbuttu country in 1870[1] and obtained from Munza (the king of the Monbuttu) an Akka boy in exchange for a dog. This boy died at Berber on his way to Egypt as the result, so Professor Schweinfurth tells me, of an excessive meal of macaroni. (I should mention here that in the study of these pygmies I have had the help of Professor Schweinfurth who also kindly gave me a most useful photograph of a group of 23 Mbute pygmies taken in their native Semliki forest by Dr. J. David last year.) The Italian traveller Miani was more successful in accomplishing his purpose of sending pygmies to Europe, although he himself succumbed in the effort. In the writings of Professor Schweinfurth and Sir William Flower[2] is a full account of all that Miani's two Akka boys had to submit to at the hands of a swarm of enthusiastic European anthropologists and others in Cairo and afterwards in Verona and other parts of Italy. In 1876 another Italian, Gessi Pacha, who was one of Gordon's lieutenants in the Soudan before the Mahdist rebellion, obtained in the Bahr-el-Gebel a slave girl who was supposed to belong to the Akka race and took her to Trieste, where she was living in 1888 as a servant to Madame Gessi. But according to Mateucci[3] the racial purity of this girl is open to question. In 1893 Dr. Stuhlmann is said to have taken two dwarfs from the Ituri river to Germany.[4]

Amongst the heterogeneous population of Cairo there are found representatives of almost all the Nilotic and even central African tribes. Many of these people have been slaves who have been recaptured from their captors and liberated by the Government's agents. It thus happens that the unclaimed bodies of persons dying in the Kasr-el-Aini Hospital in Cairo which eventually come to the anatomical department of the School of Medicine, include the most varied assortment of Nilotic peoples. Within the last three years the bodies of two small Negroid women, one 1436 millimetres in height and the other slightly smaller, have been dissected in my department. They presented none of the mutilations of face, teeth, and pudenda which are almost invariably—at least, so far as the genital organs are concerned—found in Nilotic Soudanese women; in the proportions of their limbs, the form of their heads and lips, and in many other respects, they closely resembled the Negritoes. But as nothing was known of their provenance and as their noses lacked that peculiar development of the alæ nasi which at that time I imagined to be the invariable characteristic of true pygmies, I came to the conclusion that they could not belong to that group; and as their nature was so uncertain I did not devote to their study that amount of attention which I should have done had I known, as the examination of this group of pygmies has shown me, that their facial features might well be (and probably are) those of true pygmies. However, as a matter of routine I fully examined their skeletons and brains and the students who dissected the bodies have recorded a number of departures from the normal structure of the body. From the characters of the skeletons I believe that these two individuals belonged to the group of Equatorial African pygmies whose osteological features have been described by the late Sir William Flower[5] and Dr. Frank C. Shrubsall.[6] I shall refer to the structure of these individuals further on in this account. I refer to the matter now to indicate the possibility or probability that true pygmies may reach this country by other means than the agency of European travellers.

The fact that some of the pygmy people now live in close proximity to the sources of the Nile and that, according to those anthropologists who have studied the question on the spot, their domain probably extended over a much wider area in former times, renders it highly probable that at various times the ancient dwellers on the banks of that river may have heard, or perhaps even seen, some of these little people in the course of their numerous expeditions to the south. But even if this fact were established with absolute certainty it would not justify us in intestine occurred absolutely independently of any nervous channels whatsoever and that it was possible to isolate the pancreas from the duodenum, to divide all the nerves going to a loop of the small intestine, and then by injection of acid into this loop to evoke secretion of pancreatic juice. Further observations showed us that the reaction instead of being nervous was in reality a chemical one. The entry of acid into the duodenum or upper part of the small intestine causes the production in the mucous membrane of a chemical substance which we call secretin. Since, as I shall show later, there are other secretins, we may speak of this as the pancreatic secretin. This pancreatic secretin is rapidly absorbed into the blood and travels with the blood to the gland, the cells of which it excites to secrete.

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[1] Im Herzen von Afrika, 1878, pp. 304 et seq.

[2] Journal of the Anthropological Institute, 1889, p. 88.

[3] "Gli Akkah e le Razze Africane," Bologna, 1877. Quoted by Schweinfurth.

[4] Robert Brown, "The Story of Africa," vol. ii., 1894, p. 37.

[5] Journal of the Anthropological Institute, 1889.

[6] Sir Harry Johnston's "Uganda Protectorate," vol. ii.

In order to obtain secretin the method we have always adopted has been to scrape off the mucous membrane of the duodenum and upper two feet of the small intestine, to pound this up in a mortar with sand with the addition of 0·4 per cent. hydrochloric acid and then to boil the mixture over a free flame, the liquid when boiled being neutralised with caustic potash. All the proteids of the decoction are precipitated and if the mixture be thrown on a filter a clear fluid filters through. This fluid contains the secretin. In order further to free it from traces of gelatin and proteid it may be precipitated by absolute alcohol and ether; the secretin is not thrown down and can be recovered from the alcohol-ether solution by evaporation of the latter. A few cubic centimetres of the original filtrate from the boiled mucous membrane or of a watery extract of the residue left on evaporating the alcohol-ether solution on injection into the veins of an animal evoke a plentiful secretion of clear pancreatic juice which can be collected by means of a cannula placed in the duct of the gland. The secretin can be obtained in this way from the upper part of the intestine of any member of the vertebrata and a solution of secretin obtained from any animal will on injection into any other animal evoke a secretion in the latter of pancreatic juice. We have, therefore, in secretin a substance of the same general distribution as adrenalin, which, like this latter, is unaltered by boiling, is soluble in alcohol, and, as we have determined by direct experiments, is more or less diffusible. Although secretin has not been further isolated and we have therefore no clue as to its chemical characters there can be little doubt that it belongs, like adrenalin, to the drug class of substances which exercise an influence on the physiological workings of the body. The limited seat of production of secretin and the definite response evoked by its injection determine a chemical reflex which is as adapted to the needs of the organism as are the muscular reflexes carried out by the central nervous system. The acid chyme entering the duodenum excites the formation of secretin in the mucous membrane, which in its turn causes a flow of alkaline pancreatic juice. The formation and absorption of secretin will proceed until the chyme is exactly neutralised by the alkaline juice. As soon as this neutralisation occurs the pyloric sphincter, which remains firmly closed so long as the duodenal contents are acid, opens and allows the entry of a fresh portion of acid gastric contents which in their turn will, through the secretin mechanism, call forth a secretion of an exactly corresponding amount of pancreatic juice. It is thus contrived that the further digestion of the foodstuffs in the small intestine will proceed in a medium which is approximately neutral and is at any rate free from any trace of mineral acid.

We may next inquire into the manner in which the contact of acid can give rise to the production of secretin in the mucous membrane. It seems most probable that the action of acid is one of hydrolysis, since although various acids can be used for the preparation of secretin their efficacy is more or less proportional to their strength or rather to their acidity, a weak acid such as boracic having no influence on the production of secretin. Bayliss and I have suggested therefore that the epithelial cells lining the upper part of the small intestine contain a substance, pro-secretin, from which by hydrolytic agents secretin can be split off. This precursor of secretin is quite insoluble since we have been unable to obtain secretin by the actions of acids on filtered extracts of the mucous membrane. It is not destroyed by the death of the cell, since secretin may be obtained by the action of acid upon boiled mucous membrane or upon mucous membrane which has been repeatedly extracted with absolute alcohol and then dried. On the other hand, if the process by which secretin is formed is hydrolytic this change must be able to be effected by the living cells in the absence of such strong hydrolytic agents as dilute hydrochloric acid. Thus Fleig has shown that a secretin similar in all respects to that described can be obtained by the action of soaps on the mucous membrane; and there is no doubt that a similar substance is produced in the mucous membrane and absorbed into the blood when such substances as ether, chloral, or oil of mustard are introduced into the lumen of the gut. It is difficult to imagine that any of these substances can exercise a direct hydrolytic effect and it is certainly impossible by their means to extract secretin from a mucous membrane which has been already killed.

That the secretin formed in the mucous membrane actually gets to the pancreas by way of the blood stream has been shown by Wertheimer. This observer led the blood from the intestinal veins of one dog (A) into the blood stream of a second dog (B) and found that injection of dilute acid into the intestine of dog A evoked a secretion of pancreatic juice in dog B. Although the view given above as to the origin of secretin is most probably correct our failure up to the present to isolate pro-secretin in any way from the mucous membrane forbids us to accept the theory as definitely established. Delezenne has found that digestion of a solution of secretin with a fresh extract of intestinal mucous membrane deprives the secretin of its efficacy. He has therefore advanced the suggestion that secretin is really preformed in the wall of the gut but is accompanied by another body, its physiological antagonist, which he denotes by the name of anti secretin. He imagines that the action of acid is to destroy the anti-secretin, thus unmasking the action of the secretin. The fact, however, that secretin, which is extremely soluble both in water and fairly strong alcohol, is not extracted in any appreciable quantity by these fluids from the mucous membrane until acid has been added is difficult to reconcile with Delezenne's suggestion; moreover, the general characters of secretin, its resistance to proteid-precipitating agents, and so on, point to it as belonging to a class of bodies which would not give rise to anti-bodies when introduced into the organism.

As to the mechanism by which secretin arouses the activity of the pancreatic cells, the expulsion of its preformed ferment or pro-ferments, together with the building up of new protoplasm and ferments which always accompanies normal activity, we have little or no conception. Early in our researches the suggestion was made to us by Dr. A. Walker that the secretion of pancreatic juice was of the nature of the formation of an antibody to the secretin. That this explanation will not hold is shown by the fact that secretin is equally efficacious when it is mixed with a large quantity of fresh pancreatic juice. If, however, the pancreatic juice be activated by the addition of succus entericus so that its trypsinogen is converted into trypsin, it has the power of destroying the secretin. Moreover, as I mentioned in my last lecture, such a localised formation and excretion of an antibody has no analogue among the facts hitherto brought to light by bacteriologists as to the formation of antibodies in general. We are inclined to think that the action of secretin is that of a specific drug—that just as pilocarpin acts on all the glands of the body, including the pancreas, so secretin acts on the pancreas with, perhaps, one or two other glands which are associated with the pancreas in their functions. Its action is not, however, identical with that of pilocarpin. The latter drug induces in the pancreas the secretion of a thick viscid juice containing from 7 to 8 per cent. of solids. Its action is entirely abolished by the injection of a small dose of atropin. On the other hand, secretin produces a juice containing about 3 per cent. of solids, which resembles in every particular the juice obtained from an animal with a pancreatic fistula after it has received food. Its action is not altered in any way by the previous injection of, at any rate, moderate doses of atropin.

The discovery of this chemical reflex which is sufficient to explain the correlation of activities between the mucous membrane of the small intestine and the pancreas must cause us to inquire how far these results are to be reconciled with the previous results obtained by Pawlow. According to Pawlow's original idea the reflex secretion of pancreatic juice was entirely nervous. The question now arises whether both mechanisms function in normal circumstances or whether it is possible to explain all Pawlow's results by the chemical mechanism which I have described. Although we cannot at the present time give a definite the Guinea Coast. These accounts met with little credence at the time and at the beginning of the nineteenth century these stories with those of the classical writers were relegated to the domain of fairy tales. With the growth of a fuller knowledge of natural history and of a more critical inquiry into the facts of nature and the records of history all of these reports were "explained away" as mere travellers' tales or as highly coloured accounts of tribes of apes and monkeys. But from the middle of the nineteenth century onwards numerous travellers in various parts of Equatorial Africa and its neighbourhood began once more to record reports which they had heard of diminutive races of men. Dr. Touchard (1861) and Admiral Fleuriot de Langle (1868) described the rapid extinction of a pygmy race in the Gaboon region. M. Paul du Chaillu (1867) in penetrating the forest behind the French possessions in West Africa came upon a pygmy race in Ashongoland between the Gaboon and Congo rivers. Speke and, at a later period, Stanley (1876) heard of the Batwa or Watwa pygmies along the upper waters of the Congo, whom Lieutenant Wissmann and Dr. Wolff met and described in 1887.

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The age of the individuals.—In discussing the size and relative proportions of the body in pygmy people the question of the age of the individuals studied is of the utmost importance, for all our conclusions may be vitiated if we treat the mensurations of children as those of adults. It is therefore desirable to study the problem of the determination of the ages with the utmost care. As the people themselves have no ideas whatsoever of their age and the statements made concerning them are obviously mere guesswork of the crudest description,[11] we can at the outset put aside all preconceived ideas as to their ages and study the question on the evidence afforded by the state of their teeth and bones. The value of the evidence afforded by the teeth is not so great as that of the osseous tissues, because the dates of eruption of the former are liable to great variation. There is no doubt that there is a definite tendency amongst the African people for the teeth to cut the gums at an earlier period than in Europeans. It is difficult to obtain definite information in support of this contention because so few people in Egypt and the neighbouring countries have any idea of their exact ages or of those of their relatives. It is a common occurrence for the third molar teeth in Egyptians to cut the gums before the eighteenth year and cases in which these teeth had erupted as early as the fourteenth (and even the thirteenth, according to Dr. Harold Nolan) year have been met with. With reference to the second molar teeth I am unable to make any statement as to the date of eruption from my own knowledge, but my friend, Dr. Nolan, who has had occasion frequently to examine the teeth for medico-legal purposes, has the idea that these also (and, in fact, all the teeth) are precocious, judged by the European standard. The difficulty of ascertaining the exact age in all except the rarest cases has so far rendered it impossible to make any more definite statement regarding this important subject.

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If these epiphyses have really joined their shafts—there is, of course, the possibility that a slight obliquity of the bones may have caused the narrow epiphyseal gap to be hidden—it is a most extraordinarily precocious development; but it cannot be distinctive of all pygmies (at any rate, the date of union cannot be so very early) because in the much older boy Matuha the epiphyseal gaps in the metacarpals are distinct in the left hand although they are almost closed in the second, third, and fourth metacarpals of the right hand. In Matuha's right hand the epiphysis of the fifth metacarpal seems to be perfectly fused to its shaft, although the epiphyseal gap is quite open in the corresponding finger of the left hand. All of the phalangeal and metacarpal bones in Mongungu's hands still retain their infantile shapes and in this respect present a marked contrast to all the other concluding, as so many recent writers have done, that every mention of small men in the ancient Egyptian writings referred to real pygmies. On the contrary, we know for certain that at all times in Egyptian history (from the earliest period of which we have any records even up to the present time when His Highness the present Khedive has a dwarf at the Koubbeh Palace who is an honoured sheikh and story-teller) dwarfs have been received with special favour at the court of the ruler of Egypt and have had posts of honour accorded them. Most writers fail to draw a proper distinction between *dwarfs* and *pygmies*—i.e., between those instances of diminutive stature which may occur in any race as the result of pathological causes or, perhaps occasionally, as the mere extreme of variability in size without any definite pathological reason and the smallness which distinguishes a whole population. The diminution of the stature in the former class may be the result of a reduction in size of all parts of the body—true or total nanism or it may be partial—affecting only some parts, so that the body is misshapen and distorted. Many of the representations of dwarfs in the ancient Egyptian wall pictures and statues suggest this partial nanism, but it is quite possible that the idea of the small size and the figure of a dwarf were conveyed by exaggerating the distortion of the body which the actual dwarf presented. Size of body in an ancient Egyptian picture was so often used to represent relative importance of individuals that the mere diminution in size would not necessarily convey the idea of a dwarf, so that something more was necessary—some distortion of the body—to suggest nanism in a picture. It is quite possible that this may be the explanation of the representation of all dwarfs as exhibiting the misshapen head and form of one particular variety of nanism. Perhaps the best Egyptian representation of a dwarf is the statue of the dwarf Khnumhotpu in the Cairo Museum (represented also in Maspero's "Dawn of Civilisation," p. 280). In this statue the idea of "dwarfishness" is conveyed by the plumpness of all parts of the limbs and body and the shape of the head. Professor Maspero, the director-general of the Egyptian Service des Antiquités, tells me that a careful study of all the passages in ancient Egyptian literature which have been supposed to refer to pygmies fails to reveal a single instance of a description which can justify such a belief. The determinative invariably applied to these supposed pygmies is a hieroglyphic sign representing the misshapen figure expressive of partial nanism. Professor Maspero refuses to admit that this hieroglyph may be a conventional sign applied to all persons of diminutive stature. It seems to me highly improbable that all dwarfs should possess a figure in any way resembling the sign invariably used to indicate "dwarfishness"; and if this sign can be applied to a well-proportioned dwarf may it not also be used to indicate a pygmy? I make this suggestion only because it offers a possible explanation of a passage which may be the first historical record of the true Negritoes of Equatorial Africa. In Professor Schiaparelli's memoir, "Una Tomba Egiziana inedita della VIª dinastia," published in Rome in 1893 (for my information regarding this memoir I am indebted to the writings of Maspero, Keane, and Sergi), there is an account of some small people brought to Egypt about 3000 years B.C., which is difficult or impossible to explain unless we admit that it refers to the real pygmy Negritoes.

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[11] A boy of the party who had not reached the state of puberty and whose gums were still red from the irritation caused by the eruption of the second upper molar teeth was said to be 18 years of age.

Somewhere to the south of Egypt was the far-famed land of Punt, a geographical term which has received innumerable explanations. It is clear, however, that it was some African territory far away to the south of Egypt from which negro people came. Professor Maspero tells us that "all that lay beyond Punt was held to be a fabulous region, a kind of intermediate boundary land between the world of men and that of the gods, the 'Island of the Double,' 'Land of the Shades,' where the living came into contact with the souls of the departed." Following the accounts given by Schiaparelli, Erman, and himself, Professor Maspero continues the story in the following most significant sentences: "It [the "Land of the Shades" beyond Punt] was inhabited by the Dangas, tribes of half-savage dwarfs, whose grotesque faces and wild gestures reminded the Egyptians of the god Bes. The chances of war or trade brought some of them from time to time to Punt or among the Amamiu [the people around Wady Halfa]; the merchant who succeeded in acquiring and bringing them to Egypt had his fortune made. Pharaoh (King Assi of the fifth dynasty—about 3300 B.C.) valued the Dangas highly, and was anxious to have some of them at any price among the dwarfs with whom he loved to be surrounded; none knew better than they the dance of the god—that to which Bes gave way in his merry moments. Towards the end of his reign Assi procured one which a certain Biurdidi had purchased in Punt. Was this the first that made his appearance at court, or had others preceded him in the good graces of the Pharaohs? His wildness and activity, and the extraordinary positions which he assumed, made a lively impression on the courtiers at the time and nearly a century later there were still reminiscences of him."[7] 70 years after King Assi "an officer, Heru-Khuf, was sent by Pepi II. (sixth dynasty) to bring back a pygmy alive and in good health from the land of great trees away to the south." "That the Danga came from the South we know from a later inscription at Karnak, and that the word meant dwarf is clear from the accompanying determinative of a short person of stunted growth."[8]

The whole of this account seems to me to be a perfectly straightforward and indubitable reference to the pygmies. But Professor Maspero says the determinative used shows that a *dwarf* and not a *pygmy* is referred to in this account. But we cannot have "a race of dwarfs" because a race of small people can only be pygmies and if the determinative used in this connexion is that of a distorted body this is conclusive proof of the suggestion, which I have already made above, that the same determinative is applied equally to the subjects of partial and complete nanism as well as to pygmies. Then, again, if this Danga was so highly estimated and "placed among the dwarfs" and remembered for nearly a century afterwards, he could not have been an ordinary dwarf; nor is there any obvious reason why they should have specially sent a long distance to the southern land to obtain a mere dwarf. Dwarfs are so common in every population, and certainly not less so in Egypt,[9] that one cannot believe all of these remarks can have been applied to any kind of dwarf but must refer to a pygmy. Professor Maspero offers the further objection that the time which it took—two months by water—to reach Egypt from the Danga's country (beyond the land of Punt) is not nearly sufficient to cover a journey from the present habitat of the pygmies to Egypt. It is not easy to estimate how far this would remove the pygmy country from Egypt. That it was a long way off is probable from the rarity of Dangas in Egypt and the fact that the Dangas obtained in the fifth and sixth dynasties were only stray individuals who had reached the land of Punt or the country of the Amamiu. Then, again, we must not forget the probability that the territory occupied by the pygmies extended much further north in those times than now. I suppose that no one now has any doubt of the essential accuracy of the very detailed and circumstantial account of the pygmies and the geographical features of their country given by Herodotus in the oft-quoted description of the voyages of the adventurous Nasamonians in search of the source of the Nile.[10] My friend, Mr. J. I. Craig, of the Egyptian Survey Department, tells me that the only river which corresponds to the description given by the Nasamonians is the Sobat. If this is so and the habitat of the pygmies reached as far as the Sobat in the third century B.C. one is quite prepared to learn that it extended much farther north in the remote time of the sixth Egyptian dynasty. These speculations are, however, quite futile if we refuse to admit that the very definite and precise reference to the Dangas in Schiaparelli's work is an account of the real pygmies. In the Greek and Roman classical writings there are numerous references to the pygmies, which in the works of Herodotus and Aristotle become so definite and exact that there can be no doubt as to their meaning.

The Englishman Andrew Battel, of Leigh in Essex, described the pygmies which he saw in Angola at the end of the sixteenth century as "little people called *Matimbas*, which are no bigger than Boyes of twelve years and very thicke"; and nearly a century later the Dutch geographer Dapper published the first account of the Akka pygmies under the name Bakke Bakke from reports which he had received from a fellow-countryman trading on the Guinea Coast. These accounts met with little credence at the time and at the beginning of the nineteenth century these stories with those of the classical writers were relegated to the domain of fairy tales. With the growth of a fuller knowledge of natural history and of a more critical inquiry into the facts of nature and the records of history all of these reports were "explained away" as mere travellers' tales or as highly coloured accounts of tribes of apes and monkeys. But from the middle of the nineteenth century onwards numerous travellers in various parts of Equatorial Africa and its neighbourhood began once more to record reports which they had heard of diminutive races of men. Dr. Touchard (1861) and Admiral Fleuriot de Langle (1868) described the rapid extinction of a pygmy race in the Gaboon region. M. Paul du Chaillu (1867) in penetrating the forest behind the French possessions in West Africa came upon a pygmy race in Ashongoland between the Gaboon and Congo rivers. Speke and, at a later period, Stanley (1876) heard of the Batwa or Watwa pygmies along the upper waters of the Congo, whom Lieutenant Wissmann and Dr. Wolff met and described in 1887.

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[7] Maspero's Dawn of Civilisation, pp. 397 and 398.

[8] Keane's Man, Past and Present, p. 118 (quoting from Schiaparelli's Memoir).

[9] During the few weeks of the pygmies' stay in Cairo I saw three fully grown dwarfs all much smaller than these pygmies.

[10] See Flower, op. cit., quotation from Herodotus, Book II., 32, Rawlinson's translation, p. 47.

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Like Mongungu, neither Matuha nor Mafutiminga has been circumcised, Bohani (the only bearded member of the party) being the only one circumcised. Sir Harry Johnston has made the statement that "the males of all the Congo pigmies seen by [him] were *circumcised*."[12] This is clearly not a universal rule among the people; but it is curious that the only one of this party to be circumcised should also be the only one whose bones have reached a state of maturity. This naturally suggests that circumcision may possibly be done as part of the initiation into manhood. But both Matuha and Mafutiminga have reached the age of puberty, as the state of their genital organs and the growth of pubic and axillary hair show; and the latter is said to be the husband of the woman Kuarhe. So that there is nothing to show that the rite of circumcision has any definite significance among these people. The most important piece of evidence as to the age of Matuha is afforded by the internal epicondyle of the humerus, which is still separate. In Cunningham's "Text-book of Anatomy" Professor Arthur Thomson says in one place that this epiphysis fuses with the shaft at 17 or 18 years and elsewhere on the same page (189) he puts it at 18 or 19 years; in Quain's "Anatomy" Professor Thane puts it at 18 years. This would apparently make 18 years as the age limit of Matuha. On the other hand, the head of the radius seems to be perfectly fused to the shaft. Professor Macalister in his text-book (p. 149) says that this takes place at 16 years, Professor Thane puts it at 17 or 18 years, and Professor Thomson allows from 18 to 20 years. According to these estimates Matuha is at least 16 years but may be as much as 20 years of age but the state of the humerus cuts one or two years off the latter estimate. The lower epiphyses of the ulna and radius are, of course, still separate. The proximal epiphyses of the first and second phalanges are still separate, while those of the ungual phalanges appear to be in the act of fusion. These epiphyses may join at any time between 18 or 20 years.

The conclusion to be drawn from these figures is that Matuha (if judged by European standards) would certainly be more than 16 years of age and less than 18 (adopting Thane's figures) or at most 19 years (if we accept Thomson's dates). The probability is that he is not more than 17 or at most 18 years, an inference which is possibly supported by the absence of the third molar teeth. If this is so the ossification of the metacarpus is unusually precocious, though not nearly to such an extent as Mongungu's.

In the case of Mafutiminga, whose third molar teeth have not yet erupted, I have only the evidence of the hand and wrist to go on. The lower ends of the radius and ulna are in the same condition as Matuha's—i.e., the epiphyses are separated from the shafts; the proximal ends of the first and second phalanges are still unjoined, whereas the third phalanges seem to be completely ossified. The epiphyseal line is still visible at the base of the metacarpal of the thumb but whether it is present or absent at the distal ends of the other four metacarpals is doubtful. All of this evidence so closely coincides with that relating to Matuha that any conclusion drawn from the data at my disposal in the case of one must also apply to the other.

In the case of the young woman Kuarhe the hands seem to be fully ossified but the lower epiphyses of the radius and ulna are still separate. Very different estimates of the age at which union takes place in these bones have been given by various writers; the fusion in the case of the radius is said to take place at 19 years (Macalister), about 20 years (Thane), or from 20 to 25 years (Thomson), and in the case of the ulna at 20 years (Thane and Macalister) or 20 to 23 years (Thomson). If we accept Macalister's figures this young woman, even when judged by European standards, is not more than 19 years but according to the estimates given by Thomson there is a bare possibility of her age being as much as 23 years. At the same time there are grounds for the belief that females reach maturity at an earlier age than males, an additional reason for adopting the lower estimate in this case.

We have no standards by which to estimate the ages of the man Bohani and the woman Amooriape. The former looks like a man in the prime of life and might be any age between 30 and 40 years. The woman looks much older than the man and yet she does not exhibit any pronounced signs of senility. Although both the women spent the greater part of a month in Cairo the matron of the Kasr-el-Aini Hospital tells me that neither of them menstruated during that period.

Name.	Sex.	Height.	Weight.
Bohani	M.	1·367 metres.	7 st.
Mafutiminga	M.	1·378 ,,	7 st.
Matuha...	M.	1·311 ,,	4 st. 11 lb.
Mongungu	M.	1·158 ,,	3 st. 7½ lb.
Amooriape	F.	1·286 ,,	3 st. 11¾ lb.
Kuarhe...	F.	1·334 ,,	5 st. 6½ lb.

The average height of 38 Akka pygmies from the Monbuttu country is given as 1·378 metres by Deniker[13]: a series of 30 Akkas measured by Emin Pasha yielded an average height of 1·36 and a series of 98 Watwa pygmies measured by Dr. Wolff gave an average of 1·42 metres.[14] The average height of six male Mbute pygmies measured by Sir Harry Johnston[15] was 1·452 metres and the two women measured yielded the figures 1·292 metres and 1·427 metres. From these figures it will be seen that the two fully grown pygmies in Colonel Harrison's party are small even for pygmies. In fact, the young woman Kuarhe and the young man Mafutiminga are taller than the adult representatives of their respective sexes, although there is still a possibility that they may have not yet finished adding to their stature.[16] In Europeans the average weight in males is doubled between the ages of 12 and 24 and onwards,[17] so that the estimate of 12 years as Mongongu's age and his weight and that of Bohani tally with these figures.

The average weight of a European youth at 18 or 19 years is almost that of a fully grown man. This quite supports the estimate of Mafutiminga's age, although he is a very heavily built, clumsy youth who, when fully grown, will probably be much bigger and heavier than Bohani. The size and weight of Matuha suggest that he is not nearly fully grown and incline to the view that even 18 years is an exaggerated estimate of his age. The average weight of a boy of only 17 years is considerably greater than that of a fully grown woman. Yet the young woman Kuarhe is nine and a half pounds heavier than Matuha.

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[12] Uganda Protectorate, vol. ii., p. 538.

[13] "The Races of Man," Appendix, p. 577.

[14] Deniker, op. cit., p. 456.

[15] Uganda Protectorate.

[16] Donaldson, "The Growth of the Brain," p. 80.

[17] Donaldson, p. 51.

The size of the limbs.—The illustrations appended to this account give a good idea of the proportions of the limbs. A study of the measurements of living individuals made by various investigators shows that a considerable proportion of the figures, even when compiled by trained observers, are quite untrustworthy as an index of the size of the bones. In no other way is it possible to explain the great discrepancies which are found in the recorded sizes of the limbs of living pygmies. In addition to the measurements made on numbers of living pygmies by various travellers we have the exact measurements of the skeletons of two Akkas by the late Sir William Flower[18] and Dr. Frank Shrubsall.[19] In a female Akka pygmy 1·218 metres in height the humerus was 19·8 per cent., the radius 15·7 per cent., the femur 27·5 per cent., and the tibia 22·3 per cent. of the total stature. The most noteworthy feature of these measurements is the great proportionate length of the forearm which is more than 1 per cent. greater than that of Europeans; in this respect the pygmies are distinctly negroid. The other measurements (those of the femur, tibia, and humerus) are almost identical with the average proportions given by Topinard for tall Frenchmen.

In the six pygmies of Colonel Harrison's party the radius is proportionally shorter in the women than in the men, being only 15·2 per cent. in Kuarhe and 15·3 per cent. in Amooriape; in the man Bohani and the boy Mongongu it is 15·6 per cent., in Matuha it is 15·7 per cent., and in Mafutiminga it rises to 16·5 per cent. of the total height. The relatively enormous size of the arm and forearm in the latter youth is well demonstrated in the illustrations. The divergences of the proportions of the other long bones in these six individuals to their body-heights are all within the range of variation given by Topinard for Europeans. There is a noteworthy variety in the size of the feet, as the photographs clearly show. Whereas the feet of the two women (both 195 millimetres long), the boy Mongungu (194 millimetres) and the man Bohani (198 millimetres) are quite proportionate to the body-height, those of Matuha (220 millimetres) and Mafutiminga (235 millimetres) are large and unshapely. Many statements have been made by previous writers in reference to the separation of the great toe from the other four toes and the power of grasping with these toes. Although these statements are true of these pygmies the separation of the toes is no greater than that of many negroes and the power of grasping is equally well developed in other people, even European children, who habitually go barefooted. The limb bones of the two pygmy women dissected in Cairo are all extremely slender—quite disproportionately so, when compared with their length. Most of the characters of the scapula and pelvis agree with those described by Flower and Shrubsall in the case of their pygmies but the pelvis in my cases was not so markedly dolichopelvic as in Flower's case.

The head.—So far as the form of the head is concerned these six people form a remarkably uniform group. All the heads are ovoid in norma verticalis and the length-breadth indices are respectively: 76·5 (Mongungu), 77·7 (Bohani), 78 (Mafutiminga), 78·7 (Amooriape ♀), and 79·1 in both Matuha ♂ and Kuarhe ♀. The heights of four of the crania (measured with Pearson's spanner) are almost identical (135, 137, 139, 139); the two old people have much the loftiest heads, the woman Amooriape's height being 144 millimetres (head length 174) and the man Bohani's cranial height being 155 millimetres (head length 184). The horizontal circumferences of the heads, taking the names in the same order as in the list of cephalic indices, are 514, 544, 533, 518, 514, and 505 millimetres respectively. As a measure of their prognathism the indices expressive of the proportionate lengths of the nasal and prosthionic radii are 111, 104, 115, 110·5, 107, and 108. Bohani is the least prognathous and Mafutiminga the most.

Much stress has been laid by previous writers on the comparative shortness of the crania of pygmies in comparison with their larger negro relatives and the Bushmen population of South Africa. These six individuals exhibit this feature in its characteristic form. The figures quoted above show that the degree of prognathism is a very variable quantity in these people; it is considered to be one of the chief distinctive features of pygmies in contact with Bushmen. The cranium of one of the two pygmies dissected in Cairo is quite orthognathous and even when due allowance is made for the atrophy of the alveolar process, which has followed the loss of the incisor teeth, it does not approach the average condition of pygmy prognathism. When a character exhibits such extreme variability it loses much of its value as a distinctive feature.

In individuals such as these pygmies, in whom the root of the nose is exceptionally flattened and very broad, it is not easy to measure the length of the nose with any degree of accuracy. The nose is exceptionally broad in the four males (varying from 40 millimetres in the boy Mongungu to 49·5 millimetres in Mafutiminga) but is considerably narrower in the women (34 millimetres and 39 millimetres respectively). The characteristic pygmy type of nose is seen in most distinctive form in Matuha and Bohani—the root is broad and very flat, the tip broad and flattened, and the alæ greatly expanded so as almost to equal the tip of the nose in size. The illustrations render any attempt at a detailed description unnecessary. Mongungu's nose represents a youthful phase of the same type. Although actually broader than that of any of the others, Mafutiminga's nose conforms rather to the common negro type, the disproportion between the sizes of the central part and the alæ being much more marked than it is in the other males. The nose of the old woman Amooriape has the characteristic pygmy form but is considerably narrower than that of the men. The root of her nose is so flattened that the broad space between her eyes is almost level. The younger woman Kuarhe's nose exhibits none of the pygmy or even negro form and resembles rather the nasal types so common in Abyssinia and the neighbouring regions, where there is a mixture of Hamitic, Semitic, and negro populations. In profile, however, the flattening of the tip of her nose produces a greater resemblance to that of the old woman than in norma verticalis.

The lips also are quite characteristic. Instead of the massive, fleshy, everted lips of the negro the pygmy has long thin lips the upper of which has a noteworthy subnasal projection. This form of lip with the flattened nose above it gives a strikingly Simian appearance to the features, especially during such acts as drinking and speaking. This is seen to best advantage in the old woman when she is just about to drink: her lips are then pouted out in a tubular manner just like those of a chimpanzee. The lips of the younger woman have been perforated in three places. The ears of all are small; the lobules are poorly developed, especially in the ears of Matuha and Mafutiminga, and in the former the pinna is rather crudely formed. Mongungu's lobules are not perforated but one or both are pierced in the others. The mandible is very narrow and pointed and the chin small in all. Bohani alone has a beard; it consists of a small stubbly growth of short closely rolled hair on the chin and upper lip. The pubic and axillary hair in the two women and the two youths presents similar characters. Bohani has similar hair on his chest and abdomen.

Much has been written by Emin Pasha, Yunker, Stanley, Stuhlmann, and Johnston, among others, of the down-like hairy covering of the whole body of the pygmy people. Such hair is certainly present in these individuals, but I doubt whether, with the possible exception of Mongungu, this hair is developed to any greater extent than in many Europeans. In Mongungu it is distinctly well developed, especially on the back. It is perhaps noteworthy that he is much the youngest of the party. The hair of the head consists in all six of the characteristic discrete "pepper-corn" balls, closely rolled, and of a peculiar dull lustreless appearance, not exactly black but of an indefinite greenish-grey tint. In the youth Matuha the hair was very short on the right side of his head but more abundant on the left side. He had probably at some quite recent period had the right side of his head shaved. In Dr. David's photograph of a group of Mbute pygmies which was given me by Professor Schweinfurth (and has been published, so he tells me, in a reduced form in "Globus") various fantastic methods of dealing with the hair are shown. One woman has the hair removed from the right side and another from the left side of her head; another woman and two men have had the whole of their hair removed except a frontal fringe; several of both sexes have had symmmetrical similar areas denuded of hair on both sides and several men have had their foreheads shaved so as to convert the edge of the hairy-covering into a sharply defined line. Matuha has apparently been subjected to this procedure.

Other features.—A noteworthy peculiarity of all pygmies, both old and young, is the extraordinary prominence of the abdomen. That this is not the result of overfeeding since they have become exiles is shown by the fact that this feature is equally pronounced in those individuals who have been photographed in their native forests (as in Dr. David's photograph). In one of the pygmy women dissected by me this prominence of the paunch was associated with a peculiarity of the colon. The cæcum was placed high up in the lumbar region and from it the colon bent downward into the right iliac fossa; then becoming enormously distended it pursued a sigmoid course across the abdomen, completely filling the anterior part of the cavity and occupying the abdominal bulging. The splenic flexure was separated from the spleen by the pancreas. Practically the whole of the colon was thus constituted by the large stomach-like organ which would by most writers be labelled transverse colon.

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[18] Op. cit., supra.

[19] Op. cit.

Until Stuhlmann exhibited photographs showing definite steatopygia in a pygmy woman it was commonly supposed that this condition never occurred in this race and its absence was regarded as one of the great distinguishing features when the pygmy was compared with the Bushman. In one of the women of Colonel Harrison's party—Kuarhe—there is a very steatopygous condition, whereas in the old emaciated woman there is not only no trace of it but the buttocks are unusually small.

In the pygmy women dissected in the Cairo School of Medicine the facial muscles presented the usual negroid features—an exceptionally reddish colour and a much greater diffuseness than is found in the ordinary European. In one of them a pair of symmetrical sternales muscles were found, their upper tendons being attached in front of the manubrium sterni and the lower tendons in front of the seventh costal cartilages. In the same subject the trapezius muscle gave off a slip to the sterno-mastoid on the left side; neither omo-hyoid muscle had an intermediate tendon but merely an ill-defined tendinous intersection. The brain of this woman, after having been in the body preserved by intravascular injections of 10 per cent. formol for three days, weighed 880 grammes. So that when it was fresh it probably weighed about 850 grammes. But as it had a softening of the motor speech centre in the left hemisphere and a second softening in the parietal area of the right hemisphere its weight in the healthy state may have been nearer 900 grammes. That the brain had shrunk (as the result of old age) was shown by the great enlargement of the frontal air cells as the consequence of the marked inner bulging of the internal table of the frontal bone. The brain of the younger second pygmy woman (the lower femoral epiphysis of whom was still separate) weighed 950 grammes after formalin. The average brain weight of 100 fellahin women weighed by me was 1190 grammes. In European women it is about 100 grammes heavier and in Soudanese women almost as much lighter. Taking into consideration the size of these women a brain weight of 900 grammes compares not unfavourably with that of Soudanese women of bigger stature. At the same time such a small figure for a human being has a considerable significance when it is recalled that it is so little bigger than the brain of pithecanthropus as estimated by Dubois. Perhaps more surprising than the small size is the fact that these brains exhibit no more simian likeness than, if as much as, most negro brains. Symmetrical lunate sulci (Affenspalten) of a moderately large size were present in the younger woman but in the other brain they were very small and not at all pithecoid. The Sylvian fossa was widely open and a large part of the insula was exposed, but this often occurs also in Soudanese and other brains. The characters of the skull of the old woman show a considerable resemblance to those of the Akka woman's skull described by Flower. The nasal bones were fused as in the apes. The spheno-maxillary fissure was widely open. The tip of the great wing of the sphenoid just reached the parietal bone. The temporo-maxillary joints were completely disorganised by severe rheumatoid arthritis.

The abundant secretion from the large sebaceous glands yielded a most powerful and objectionable odour which did not become appreciably less until more than a week of daily ablutions and even up till the last day of their stay in Cairo the odour still clung to them. It may be compared to the well-known "nigger smell" but it was even more pronounced.

These pygmies show a strange indifference to what is going on around them. They seem to be altogether devoid of ordinary curiosity. Even the loud buzzing of a Ruhmkorff coil and the illumination of a Crookes's tube were not sufficient to attract their attention to either. Their sense of modesty was most pronounced, especially when it is recalled that they are said to go naked in their own country. They are extremely shy and reticent until they become familiar with the people around them. Their music differs entirely from the Egyptian and Arabic tunes but is indistinguishable from those of the Soudanese negroes. Unlike the native inhabitants of Egypt they are able to recognise photographs and pictures that are shown them.

Conclusion.—As the late Sir William Flower and many other writers have repeatedly stated, the pygmies are certainly negroid and many of the negro features, such as the projection of the jaws and lips, the flatness of the nose, the elongation of the palate, the large size of the teeth, and the characters of the hair, are even exaggerated—i.e., are ultra-negroid in the pygmies. From the time the pygmies were re-discovered in recent times there have always been writers who have put forward the many points of resemblance between the pygmy and the Bushman—the smallness of stature, the "pepper-corn" hair, the flat, broad nose, the convexity of the subnasal space, and the occasional steatopygia—as arguments in favour of the recognition of a racial affinity, and it must be confessed that this array of resemblances is difficult to "explain away." Deniker has examined all these points of resemblance in some detail and has come to the conclusion that none of them will stand close examination.[20] Shrubsall, on the other hand, as the result of a comparison of the crania of Bushmen and Flower's Akka pygmies, expressed the opinion that "it seems probable that the Negrilloes and the Bushmen are allied." He goes on to state that "the principal objection to such a view is that the phenomenon of steatopygia has as yet not been described among the Negrillo races."[21] This was written, of course, before Stuhlmann showed that this condition does sometimes exist in pygmies. These early comparisons of pygmies with Bushmen probably led observers to exaggerate the lightness of the skin tint of the former. That the pygmies are lighter in colour than many negroes is obvious at a glance, but it cannot be too strongly insisted on that many true negroes have the same chocolate-brown coloured skin as the pygmies. Even this small party of six exhibit a wide range of colour. Mafutiminga, in colour as in many other features, is a dusky negro, whereas the old woman Amooriape is of a comparatively light brown tint and the colours of the other four are intermediate between these two extremes.

If we attempt to sum up the features of these pygmy people we have no reason for regarding them as either more simian or more primitive in structure than ordinary negroes. In comparison with the Bushman they must be considered as much more decidedly negroid. When we take into consideration the many undoubted resemblances of pygmies and Bushmen it is easier to picture these likenesses and their attendant differences as the results of a diverse specialisation of two branches of one stock rather than as the product of a tendency to convergence of two independent races. So far as we know the structure of the pygmy people there is no reason for regarding them as other than merely small negroes. The variability of type exhibited in even this small party probably indicates that the pygmy peoples have considerably intermingled with other races.

NOTE ON INTESTINAL WORMS FOUND IN AFRICAN PYGMIES,

BY DR. A. LOOSS.

I avail myself of the opportunity afforded by the publication of Dr. Elliot Smith's article on African pygmies to make a few provisional remarks on the intestinal parasites found in the six Mbute (Bambute or Wambitti) pygmies described by him. Very little being as yet known of the parasites of man in Central Africa, Dr. H. P. Keatinge suggested that I should examine the stools of the six individuals. When this was done it was found that all of them harboured the eggs of worms. There were altogether five species represented: an ankylostoma, an ascaris, a trichocephalus, schistosoma hæmatobium, and oxyuris vermicularis. The first four genera in this list were recognisable by the presence of their ova in the dejecta and the last named was found later in the shape of some full-grown specimens. The ankylostoma eggs were discovered in all six individuals, two of whom presented them in fairly considerable numbers. The trichocephalus was found in two of the men, the ascaris in one man and one woman. Schistosoma and oxyuris were each found in one male person only. The smallest boy (Mongungu, aged 12 years) harboured all species except oxyuris. The schistosoma eggs were found in this fæces only; they were lateral-spined and rather scanty. In some specimens of urine (very small in amount) none could be discovered.[22]

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[20] The Races of Man, p. 455.

[21] Journal of the Anthropological Institute, 1897, p. 283.

In size, shape, and structure of their contents the schistosoma eggs fully agreed with the ova of the Egyptian bilharzia; thus I have no doubt that they really belong to this species. As to the other kinds of eggs observed in the fæces of the pygmies, I was not so sure of their identity. There was naturally no doubt as to the genera of the parent worms, but all the eggs in their general appearance slightly differed from those of the well-known species infesting man elsewhere. The ascaris eggs, varying between 0·059 to 0·042 millimetre and 0·063 to 0·05 millimetre, and thus coinciding in size with the eggs of ascaris lumbricoides, differed from these by their paler and decidedly less refractive shell. The albuminous envelope raised in the characteristic tubercles was very thin and often quite absent. The protoplasm of the undivided egg-cell seemed to be markedly less granular than in the eggs of ascaris lumbricoides, the entire eggs becoming thus paler than usual. The trichocephalus eggs did not quite reach the size of those of trichocephalus trichiurus. In Egyptian specimens of this species I find the length of the eggs to vary between 0·063 and 0·067 millimetre and the breadth between 0·03 and 0·034 millimetre, whereas the eggs in the stools of the pygmies almost uniformly showed a length of 0·054 and a breadth of 0·025 millimetre. Moreover, their shell which, in trichocephalus trichiurus, is of relatively considerable thickness with strongly refractive outlines, was in the eggs yielded by the pygmies only about half as thick, the polar plugs but feebly developed and less refractive too. The ankylostoma eggs, finally, presented a striking difference of another kind. It is a well-known fact that the eggs of ankylostoma duodenale in fæces immediately after evacuation show the original egg-cell divided into four embryonic cells, eggs with fewer or more cells forming the exception to the rule. In the fæces of the pygmies, even when examined a quarter of an hour after evacuation, the great majority of the ankylostoma eggs exhibited an embryonic body composed of from eight to 16 cells, eggs with four cells being present also but by no means so frequently as in the case of ankylostoma duodenale. Measurements of a number of these eggs showed that, on an average, they also possessed slightly larger dimensions. Apart from some exceptional cases the eggs of ankylostoma duodenale vary in length between 0·056 and 0·061 millimetre and in breadth between 0·034 and 0·038 millimetre. The corresponding figures found on the eggs in the stools of the pigmies were 0·059 to 0·065 millimetre and 0·038 to 0·04 millimetre.

Owing to these peculiarities observed in the eggs it seemed worth while to try to obtain the full-grown worms. At my request Dr. Keatinge kindly agreed that the six people should undergo an anthelmintic treatment in the Kasr-el-Aini Hospital. A first "cure" was made with thymol in the usual way adopted in the hospital, but owing to the small size of the patients only four grammes of thymol were given. The result was almost negative, only two ankylostoma worms being expelled from the six people. Since it did not seem advisable to increase the dose I suggested that the "cure" should be repeated with the "white mixture" recently recommended for ankylostoma duodenale as both efficacious and harmless by Dr. Herman in Mons, Belgium. The mixture is composed of eucalyptus oil, 2 grammes; chloroform, 3 grammes; and castor oil, 40 grammes. The result was, so far as the ankylostoma worms were concerned, very satisfactory. The "cure" produced altogether about 150 worms and a repetition made after three days' interval about 30 worms more. All were still living when voided and thus furnished excellent specimens for anatomical research. Of the other species, the eggs of which had been found in the fæces, only one female trichocephalus was voided in addition to the few oxyurides mentioned above. Owing to this result I am as yet not able to tell whether the differences observed in the ova have their cause in specific differences of the parent worms or whether they represent mere local aberrations.

A close examination of the ankylostoma specimens obtained by the treatment revealed them to belong to the species necator Americanus, the "New World hookworm," which was some years ago recognised by Stiles as a distinct species widely spread, in addition to the true ankylostoma duodenale, among the white and coloured population of the southern parts of the United States. The same species is also very common in South America and represents the "ankylostoma duodenale" mentioned by earlier South American, especially Brazilian, writers. I have made a careful comparison of North and South American specimens of the species with the specimens voided by the pygmies but have not been able to find any specific differences.

It may thus be considered as settled that the "New World hookworm," necator Americanus (Stiles), occurs also in natives of Central Africa. This fact is not without a certain interest from the point of view of the geographical distribution of the species. It is said that the pygmy people live scattered thoughout the forests of the tropical belt of the African continent. The more or less frequent occurrence of "ankylostoma duodenale" has been reported from the eastern as well as from the western coast of Africa (Zanzibar, Uganda, German East Africa, Congo to Senegambia). Now there seems to be no just reason to assume that the necator should be restricted to the pygmies; it is, on the contrary, much more probable that its geographical range comprises the whole native population of the tropical belt of Africa—naturally, so far as the hydrographic conditions of the land allow of the propagation of the worm. If this be true—and I am almost convinced that it is—then it would follow that what, in the reports alluded to above, was considered as ankylostoma duodenale is in reality necator Americanus; if not exclusively, at least to some extent. So far as I can gather from the literature at my disposal in none of the respective cases has a minute examination of the anatomy of the parasite been made, its presence was only stated from the appearance of the ova in the fæces, or after finding the full-grown worms in post-mortem examinations. Since both eggs and parent worms of the two species resemble each other very closely on superficial examination—indeed, their definite distinction by Stiles dates back only three years ago—such a confusion is almost a matter of course. Since I propose to return to the fuller discussion of this subject on another occasion I abstain from entering into further details in this place. The principal object of this note is to state the occurrence of the "New World hookworm" in natives of Central Africa and to attract the attention to its probable occurrence in other parts, especially the coasts of tropical Africa. For physicians practising in these countries it would be an easy matter to settle the question, either by themselves determining the species of the parasite or by sending some well-preserved material for identification to experts. I myself would gladly undertake such work of identification.

Cairo.

FRONTAL SINUSITIS: TWO CASES OF DEATH AFTER OPERATION.[1]

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FORMERLY PHYSICIAN TO THE THROAT HOSPITAL; AND
SURGEON TO THE ROYAL EAR HOSPITAL.

WE in England have learned much from the French School of Laryngology in regard to the treatment of frontal sinusitis and one of the most valuable lessons has been the frankness with which unfortunate results have been put on record. In exploring any hitherto neglected corner of the body and in designing suitable operative relief it has unfortunately been impossible always to avoid a rate of mortality which has been greatly diminished after the region has been thoroughly surveyed. In these early investigations one of the principal helps towards progress has been the record of any fatal cases and we all feel indebted to M. Luc for having published his fatal results, as we also do for the help obtained by the record of his successful cases. I am glad to think that the same frankness has also been shown by several of my British *confrères* and deaths following operation on the frontal sinus have been placed on record by Tilley,[2] Burghard,[3] Lack,[4] Milligan,[5] and Logan Turner.[6] I know that many others have occurred and trust that details of them may be published. It is only in this way that we can advance the subject by determining exactly whether the unfortunate results are due to incomplete diagnosis, selection of unsuitable cases, the order of procedure, defects in methods or technique, or the general condition of patients. In neither of the cases which have occurred in my own practice could death be attributed entirely to the operation. The fatal issue was determined by operative interference but in one case it was precipitated by operation on the maxillary sinus before the frontal sinus was interfered with and in the other by an incomplete operation on the fronto-ethmoidal cells, although the frontal sinus itself was quite satisfactorily dealt with.

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[22] This assortment of species and the relative frequency in which the individual species occur agree fairly well with the results of similar researches recently obtained from natives of Uganda by Castellani and Low (see Parasites and Parasitic Diseases in Uganda, in Archiv fur Schiffs und Tropen-Hygiene, vol. viii., 1904, No. 5).

[1] Translation of a paper read before the Société Française de Laryngologie on May 10th, 1905.

CASE 1.—In August, 1899, a female, aged 27 years, was admitted under my care at the Throat Hospital for bilateral frontal, ethmoidal, and maxillary sinusitis. The Caldwell-Luc operation was first carried out on the left maxillary sinus and the patient left the hospital (Sept. 15th) with the intention of returning later for further treatment. But the day she left she was seized with acute pain round the left eye and on the left side of the head; there were epiphora and swelling of the eyelids on that side and on Oct. 6th she saw a medical man who made an incision below the left eye and evacuated pus. When re-admitted to hospital on the 15th she was very weak and worn out with pain and sleeplessness. Both lids of the left eye were swollen and inflamed. There was a small opening below the left eyelid through which a probe passed into the nose. The skin over both frontal sinuses was swollen and tender but not reddened. On the left side of the bridge of the nose there was a raised, reddened, fluctuating area, tender on pressure, and of the size of a sixpence. The temperature varied from normal to 100·8° F. and the pulse was from 70 to 90. The left frontal sinus was opened by an incision which passed through the swelling on the left side of the nose. This was found to be soft inflamed tissue, beneath which the frontal bone was bare. This was chiseled through and the frontal sinus was found to contain polypoid material. The naso-frontal canal was considerably enlarged and the cavity packed with gauze. The wound was not closed and the packing was changed daily. The operation was followed by what proved to be a deceptive calm. For nearly three weeks the notes report that she was "doing well." The temperature, pulse, and respiration were normal and the wound "looked healthy." Then neuralgia on the opposite—right—side of the face was complained of, the forehead became puffy and œdematous, the right frontal sinus tender, and the right eyelids swollen. The left eyelids were also slightly œdematous. It was evident that extension of mischief was taking place around the already opened frontal sinus and that a subacute infection was spreading from the unoperated one (the right).

On Nov. 16th a second operation was performed. A median vertical incision nearly four inches in length was made in the forehead. This was connected with the wound over the left frontal sinus and with a similar incision made over the right sinus. On reflecting the two triangular flaps the frontal bones were found carious over a semicircular area extending to a radius of one and a half inches from the fronto-nasal suture. In removing all this necrotic bone the rim and part of the roof of each orbit were removed and as part of the posterior wall of the frontal sinus was bare the dura mater over the left orbit was exposed. Polypoid hypertrophies were removed from the right frontal sinus and the recent granulations were scraped from the left. The fronto-nasal ducts were enlarged by freely curetting the ethmoid cells. The frontal septum was not interfered with, although part of it was seen to be carious. The vertical incision only was closed with sutures and each horizontal wound was lightly packed with cyanide gauze. Again there came a period of deceptive comfort. For a week the patient was easy and all went well. Then came pain in the right temporal region and a fluctuating swelling in the right infra-orbital region. On incision pus was evacuated and bare bone detected. Evidently in the right ethmoidal labyrinth there was retention and infection. The ethmoidal cells on the right side were therefore again freely curetted from the frontal wound, part of the os planum being removed. After another week of apparent well-being the temperature rose to 103·4° on Dec. 4th, the patient complained of occipital headache, and became delirious at night and heavy and irritable by day. Still the wounds looked perfectly healthy, there was free drainage into the nose, and no puffiness or tenderness was detected anywhere. It was apparent that the septic process had not only passed through the bones of the skull but was threatening, if it had not already attacked, the meninges. Yet one more attempt was made to limit the septic invasion. On Dec. 5th the median vertical wound was reopened and the skin flaps were reflected. The frontal bones were found carious and were removed in the space included in a semicircular area with a radius of from one and a half to two inches from the root of the nose. This not only cleared away the posterior (cerebral) wall of each sinus but exposed the dura mater containing the superior longitudinal sinus. The septum between the two sinuses was removed as well as the orbital plates of the frontal, so that the contents of the orbit were in contact with the dura mater. No improvement followed this last effort to check infection. Although the large area of the wound looked well and the exposed dura mater began to be covered with small granulations, the symptoms of lepto-meningitis increased and after nine days of irritability, delirium, epileptiform seizures, drowsiness, and coma the patient died on the 13th, three months from the onset of symptoms and two months from the first opening of the left frontal sinus.

There was no post-mortem examination, but it was evident that meningitis was the cause of death following on osteomyelitis, due to septic absorption from chronic suppuration in the frontal and ethmoidal sinuses.

The following points appear noteworthy in the above case: (1) the traumatism caused by the Caldwell-Luc operation performed on the left maxillary sinus stimulated the latent suppuration in the ethmoid and frontal cavities of the same side; and (2) surgical treatment of the left frontal sinus led to septic absorption from the chronic suppuration going on in the frontal and ethmoidal sinuses on the opposite side.

CASE 2.—A girl, aged 17 years, came under my care in King's College Hospital in June, 1902, for chronic suppuration in all the accessory sinuses of the nose. She had previously attended the ophthalmic department, complaining of swelling above and below the right eye, with some pain. She first noticed pain 18 months previously and the swelling commenced nine months later. The pain was sharp and neuralgic but not constant, being sometimes absent for a week at a time. She had neither cacosmia nor anosmia and had paid little attention to the fact that she had a chronic discharge of "matter" from the nose. There was no diplopia. The examination of the eyes was negative but, as is shown in the illustration (Fig. 1), they appeared to be pushed apart by the broadening below the root of the nose. The maxillary sinuses were first drained through the tooth sockets. On June 13th, 1902, the right frontal sinus was opened by an Ogston-Luc operation; numerous polypoid hypertrophies were cleared away (Fig. 2) and the fronto-nasal duct was enlarged. Towards the end of the operation a sudden eruption of pus was noticed near the infundibulum. Its source could not be detected; there was no recurrence of it, and as the frontal sinus had been freely exposed it was concluded that it was simply some pus which had welled up from the nose. The wound was flushed out, only partially closed by stitches, and lightly packed with iodoform gauze, which was left projecting from the inner corner of the wound. As in the previous case, there followed a period of deceptive calm. For ten days the patient continued to eat and to sleep well. The gauze packing was changed daily; the discharge on it rapidly diminished and became mucoid; the drainage into the nose was so free that lotion easily passed down the fronto-nasal canal, and the patient could readily blow air up through it. The sinus was filling with some healthy-looking granulations, the pulse and temperature were normal, the patient got out of bed for a few hours, and nothing could promise better. Then some headache was complained of and tenderness and a puffy swelling were detected over the forehead.

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[2] THE LANCET, August 19th, 1899, p. 534; and Edinburgh Medical Journal, March, 1905 (two cases).

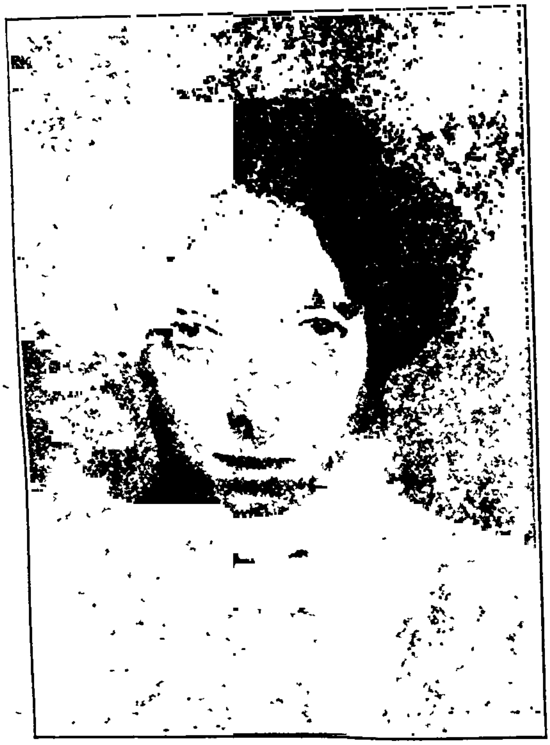
[3] King's College Hospital Reports, vol. vii., 1899–1900, p. 242 (on case).

[4] Edinburgh Medical Journal, 1902 (two cases).

[5] Brit. Med. Jour., Jan. 28th, 1905 (two cases).

[6] Edinburgh Medical Journal, March, 1905 (one case).

FIG. 1.

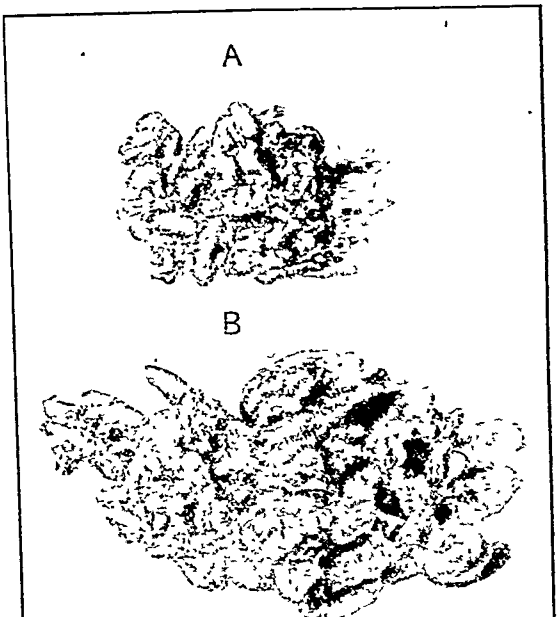


Showing broadening at the root of the nose in Case 2.

On June 26th—i.e., 13 days after the first operation—the patient was anæsthetised and a vertical median incision was made (as in the first case) so as to reflect up a triangular flap of skin from the right side of the forehead. The puffy swelling was found to be simply œdema; there was no collection of pus. The fronto-ethmoidal region was therefore more carefully explored and two long tunnels were discovered, one running backwards below the floor of the frontal sinus as far as the sphenoid and the other running outwards below the floor as far as the external angular process. They were lined with polypoid hypertrophies and it was evident that it was from one of these digitations that the sudden eruption of pus took place at the end of the first operation. They were well curetted. While the septal wall of the sinus was being cleared a portion of bone broke down and so made an opening into the left frontal sinus. As a large quantity of pus escaped the left sinus was freely opened and treated as the right had been and particular care was taken not to overlook the long fronto-ethmoidal cells. On this side also they were found running outwards and also as far back as the sphenoid, forming a double roof to the orbit, a sort of honeycomb partition between the frontal sinus and the orbit. The fronto-nasal canal on the left side, which was blocked with polypoid growths (Fig. 2), was well cleared and the wound lightly packed but only partially stitched up. Again, there was a period of apparent progress but at the end of another 13 days there was puffiness of the right upper eyelid and on passing a probe along the wound in the direction of the external angular process a pocket of pus was discovered and a piece of bare bone was felt. On July 11th this collection was exposed and the underlying bone was found necrosed and removed. The whole of the orbital plate was loose and was taken away and another ethmoidal digitation was exposed running backwards and outwards behind the one already cleared. The patient again appeared to be doing well but owing to my enforced absence from London I had to transfer her to the care of my colleague Mr. F. F. Burghard. Fortunately she could not have been in better hands, for he is a skilled laryngologist as well as general surgeon. On August 8th he had to perform an operation on the left side similar to the last one I had carried out on the right. The patient remained under Mr. Burghard's care for more than a year, during which time alarming symptoms recurred several times, to be relieved by evacuation of pus in the fronto-ethmoidal regions or even in subdural abscesses.

When I saw her again in the autumn of 1903 the frontal sinuses appeared obliterated, but there was a suppurating sinus at the inner corner of each frontal incision and at the outer corner of the left. I could not think they originated from any ethmoidal cells, so freely had they been dealt with, and my surprise therefore was great when the fronto-ethmoidal area was again laid open to discover more suppurating sinuses far back in the remains of a partition between orbit and frontal sinus, and one large tract low down in the remains of the division between the right and left side—a kind of supernumerary central frontal sinus but really a large fronto-ethmoidal cell. Again I had, for personal reasons, to hand over the case to my obliging colleague. He also was astonished that any ethmoidal recess could have escaped attention. In spite of his care further purulent collections took place, subdural abscesses and meningitis developed, and the patient died about one and a half years after the first operation.

FIG. 2.



Polypoid hypertrophies of the mucous membrane from the right (A) and the left (B) frontal sinuses in Case 2. Life-size drawing.

In this case the maxillary sinuses were drained for some time before the frontal cavities were opened; when the latter were operated on they were opened completely; free drainage was established into the nose; the cavities were lightly packed; and the skin incisions were only partially closed. The complications which occurred therefore could not be attributed to incomplete operation on the frontal sinuses, premature closure of the wound, insufficient nasal drainage, too light packing, nor yet to reaction due to operation on the maxillary sinus. I think it is clear the troubles were all due to the fact that at the time of this operation—it is now three years ago—I had not realised the importance of thoroughly treating the fronto-ethmoidal cells nor was I prepared to meet with such a large, tortuous, and irregular labyrinth. Even had I been prepared for this, I would not have known how to deal with it satisfactorily, for Killian's method of operation was then unknown to me. In both these cases it is clear that the key of the whole matter lies in successfully dealing with the ethmoid. A simple suppuration in the accessible frontal sinus, with its dependent ostium, is much more easily dealt with than suppuration in the deep, irregular, and thin-walled fronto-ethmoidal galleries, and I think our most brilliant cases have been those in which there has been little or no accompanying suppuration in the ethmoid.

The following conclusions may be drawn from these two cases:—1. In cases of multisinusitis it is well to drain the maxillary cavity some time before the frontal is operated upon. Both cavities may be operated on at the same time; but if only one sinus is operated on at a time it should be the frontal sinus, the lower cavity being drained until it can be opened. 2. In spite of free opening of the frontal sinus, the establishment of a large communication with the nose, and the avoidance of closure of the external wound a slow infection of the bone may take place leading ultimately to infection of the meninges. This may even be started in suppurating cavities on the *opposite* side to the one operated on. 3. The local condition of the wound, as well as the pulse, temperature, and feelings of the patient may fail to indicate the onset of mischief. After one to three weeks this is revealed by headache, pain, tenderness, and puffy swelling on the forehead or around the eyes. 4. When septic osteo-myelitis has started the most vigorous measures may fail to arrest it. It may last one and a half years before terminating fatally. 5. The chief danger appears to lie in the ethmoidal labyrinth, owing to its anatomical irregularities and to the difficulty of treating them satisfactorily. 6. Up to the present the operation which best meets these difficulties is that of Killian. In many cases a preliminary endo-nasal operation on the ethmoid is advantageous.

In conclusion I would point out that these two cases occurred six and three years ago and that in the meantime the study of fronto-ethmoidal suppuration has been greatly advanced. At the present time the subject is very much to the fore and I feel we are approaching a time when the condition can be treated with more certainty and safety. Meanwhile it is not free from anxiety and danger. These two cases may serve as a warning and as a guide to those who have not met with such complicated conditions and they go far to confirm the action of Dr. Luc in adopting Killian's modification of his own operation.[7]

Queen Anne-street, W.

A CASE OF PAROTITIS DUE TO THE PNEUMOCOCCUS.

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AND
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ON May 13th, 1905, a man, aged 55 years, attended the out-patient department of the Middlesex Hospital complaining of swelling of the right side of his face. He stated that the swelling commenced with slight pain during the night of May 11–12th and that since that time he had been troubled with a continuous but not severe aching pain in the region of the swelling and, further, that it hurt him to open his mouth. On looking at the patient's face it became clear that the swelling was due to a general enlargement of the right parotid gland and firm pressure on the gland elicited slight tenderness. When the patient opened his mouth the septic condition of that cavity became evident. The teeth, especially the molars, were much decayed and there was a large amount of tartar, notably on both aspects of the lower incisors. In addition there was a certain amount of pyorrhœa with retraction of the gums, more marked in the case of the lower jaw. The left salivary papilla presented a normal appearance, but the right papilla was reddened, bled readily when touched, and was slightly more prominent than that of the opposite side. The patency of Stenson's duct was assured by noticing several drops of saliva exude from the papilla while the mouth was being examined.

On May 15th the patient returned to the hospital; the swelling on the right side of the face was much less but the left parotid was now for the first time noticed to be slightly enlarged. All pain had ceased. The right salivary papilla was only slightly inflamed and the left one seemed quite normal. On the following day all swelling on the right side had disappeared and the enlargement of the left parotid was only just perceptible. The patient's temperature was taken on this occasion and was found to be 98·6° F. and his urine tested for albumin gave a negative result. Five days after his first coming to the hospital all swelling and pain had disappeared from both sides and he seemed to have regained his usual health.

The treatment had been very simple and consisted of a purge, a mouth wash of mercury perchloride solution (1 in 2000), and a fomentation over the swollen parotid gland. Bacteriological examination was made of the saliva from the right gland on May 13th, when the patient first came to the hospital. The saliva was obtained by rubbing an ordinary "throat swab" over the salivary papilla after the inside of the cheek had been carefully swabbed. A nearly pure culture of a diplococcus was obtained from this in 48 hours' incubation at 37° C. It retained the stain when treated by Gram's method and it possessed a capsule. On May 15th, when the patient next attended, the mouth was swabbed out and then some saliva was collected from the right duct directly by passing a sterilised capillary tube into it and expressing the secretion from the gland. A "swab" was also taken from the left cheek over the duct on that side. The fluid from the right side furnished a pure culture of a diplococcus precisely similar to the organism obtained at first. Tubes inoculated from the left cheek remained sterile. Subcultures made from the second set of tubes showed that the organism would not grow upon or in gelatin at 20° C., or on potato or on inspissated horse serum at 37° C. On agar it appeared in the form of numerous discrete, minute, round, transparent colonies; but it would not grow under anaerobic conditions. It failed to ferment glucose but milk was curdled by it. Hanging drop preparations of broth culture after 24 hours showed numerous diplococci and short chains of 4–12 elements. Two experiments of intraperitoneal injection of mice with broth cultures failed to show pathogenic action. A third bacteriological examination of the patient's saliva a few days later showed the presence of the same organism but the colonies obtained were very much fewer in number.

There appeared to be no reason to doubt that the parotid swelling was inflammatory in nature and we would attribute it to the diplococcus which we obtained in pure culture in the secretion of the gland. This organism we recognised as pneumococcus but of a strain possessing little virulence.

ASPIRATION IN DISEASES OF THE EAR AND THE NOSE.[1]

BY DR. MED. R. SONDERMANN.

WHENEVER hollow organs of the human body are attacked by diseases accompanied by suppuration the evacuation of the pus is, beyond any doubt, the most important task of the medical art. If such an evacuation can be fully effected we not only notice an improvement but very frequently recovery ensues without the help of any other measures. The more deeply the pus is situated the more difficult it is, of course, to evacuate it, and especially is this the case in suppurative inflammations of the nose and the ear and their accessory cavities where there has until now scarcely been known a method by which thorough fulfilment of this requirement could be effected. Irrigation, which is employed for this purpose after more or less important surgical interference in cases of empyema in the antrum of Highmore and less frequently in other accessory cavities, is impossible in cases of acute suppurative inflammation of the middle ear and of the mastoid process as long as there only exists a small opening in the membrana tympani. In the same way blowing through the Eustachian tube and through the external meatus to evacuate the pus has proved to be of doubtful success only. Greater advantages may be derived from the aspiration method, although until now it has but rarely been applied in the therapeutics of diseases of the ear. In Politzer's handbook[2] this method has been cited among those of medical investigation and treatment, but according to the passages referred to its employment is rather rare and as regards the treatment of acute suppurative otitis media its use has not been mentioned at all.

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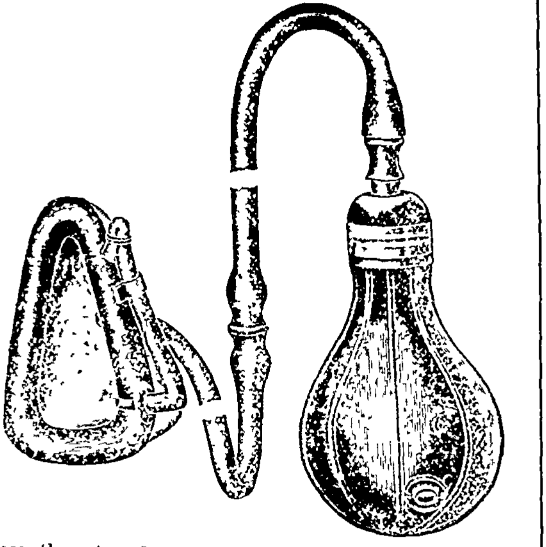
[7] At the meeting at which the above paper was read three other cases of death were reported after operation on the frontal sinus. In one (Dr. Mermod of Lausanne) the patient succumbed to acute lepto-meningitis four days after operation by Killian's method. In the two others (Dr. Castex of Paris) death from meningitis occurred several weeks after operation.

[1] Sondermann: Suction applied to Diseases of Cavities and to Lupus, a paper read [illegible] hysicians and naturalists, Breslau, 1904; Eine [illegible] e der Nasenerkrankungen, [illegible] 1905, i.; Saugtherapie bei [illegible] unde, 64, i.

Hartmann[3] only refers to the rarefaction of air in the external meatus in connexion with the treatment of noises in the ear in cases of chronic otitis media without secretion. Nor do we find it mentioned in the article by Blau[4] in the Encyclopædia of Diseases of the Ear. Ostmann[5] in the same work only states that rarefied air is but little applied in these cases because it has hitherto been used only in an inefficient way and without satisfactory results. In cases of disease of the nose and its accessory cavities the suction method, as far as I know, has not yet been therapeutically applied at all.[6] All suction methods applied to the ear agree in requiring a complete closure of the external meatus. This is attended with many difficulties. The external meatus is very sensitive in suppurative diseases and the introduction of the tube is therefore, especially if repeatedly applied, rather painful, which renders it difficult to make it fit tightly. The space over which the rarefaction of air is extended is very small, so that too strong an effect may easily be produced. All these difficulties are met by my apparatus (*vide* illustration[7]) which not only hermetically closes the external meatus but also covers in the whole ear, including the auricle. It consists of a hollow mask open at one side and surrounded by a hollow ring of hardened rubber, and by means of an elastic tube it is connected with the suction ball. The latter, as well as the elastic tube, possesses a valve by which the air can only pass outwards after the suction ball has been compressed. As the mask is of triangular shape it can also be applied to the nose if required. By a slight pressure it fits almost hermetically on the skin and can therefore be applied easily at any time by the patient himself without the help of another person. There is no contact whatever with the external meatus and its contents and there is scarcely any danger to be feared from too strong a suction, as the rarefaction of air is spread over a relatively large space and cannot exceed the amount corresponding to the elasticity of the suction ball. In cases of acute suppuration a slight aspiration will be found sufficient in order to evacuate the pus from the middle ear and even from the cells of the mastoid process into the external meatus. On the other hand, in cases of chronic empyema a stronger suction ball can be used, and especially when the membrana tympani or the ossicles are partly or entirely missing. Then it will be possible to exert a more intense suction, by which less fluid secretions are discharged if the nidus is connected with the middle ear. To this must be added that the walls of the cavity are artificially rendered hyperæmic. The importance of this process has only been recognised within the last ten years and its recognition is especially owing to the articles of Professor Bier of Bonn. This is not the place to dwell upon his statements in detail but I should like to point to his comprehensive monograph of Bier, Hyperamia als Heilmittel,[8] in which he enters fully into the actual state of our knowledge of this process. The assertion that hyperæmia possesses a great remedial effect in a great many cases can scarcely be disputed any longer, although it cannot yet be definitely stated which kind of hyperæmia—whether active, passive, or mixed—will be applied with the best effect in every individual case. We must suppose that in the forms of disease under discussion both veins and arteries take part in the augmented blood-supply produced in the walls of the middle ear by the negative pressure caused by aspiration. If this be a fact a mixed hyperæmia is doubtlessly effected. Moreover, it must be added that by the suction method very often secretions are loosened and even discharged which, being of a more adhesive nature, are not affected by irrigation at all or only with great difficulty. After suction, however, the irrigation of the ear may be much more effective. These different therapeutical effects, however, are the more valuable as the patient himself is able to manage the application quite comfortably; this fact facilitates in a high degree the use of this method, for in order to be successful the applications must be often repeated. In two cases of acute suppuration of the middle ear in which the mastoid process was also affected by the disease, as was shown by the swelling and the tenderness, and in which the intense pain continued in spite of the free and copious discharge of pus, the aspect of both the cases changed at once after the pus had been evacuated several times a day by aspiration. The pain and tenderness ceased almost directly as well as the discharge and the patients rather liked the aspiration because they felt an immediate relief in both head and ear. Such an instantaneous effect is comprehensible because pus was also evacuated by suction from the mastoid process, for the discharge of pus in one sitting was far too abundant to have been extracted from the tympanic cavity only. This seems also to be proved by the instantaneous decrease of tenderness which can scarcely be attributed only to the "dry-cup" effect of the apparatus. The result of the treatment has also been satisfactory for the condition of the ears after the application was by no means worse than it had been before. It appears from this that the ears had not in any way been injured by the suction method although it had been frequently applied. On the other hand, it is scarcely to be feared that any harm should result as the suction force required for evacuating pus is but slight. There is no doubt but that the patients are treated in this way far more pleasantly than by attempts at removing pus by compressing the air in the Eustachian tube or in the external meatus.



Chronic suppuration of the ear has been treated by me with methodical aspiration in a great number of cases and the advantages mentioned above could always be recognised and the pain was relieved at once and very often disappeared altogether. In several cases where there was no membrana tympani left but the mucous membrane was much thickened and discharged pus a change for the better was noticeable after applying the suction method for three minutes five times a day. All other therapeutic measures, with the exception of syringing with lukewarm water, were intentionally excluded. The condition of the mucous membrane daily improved until after some weeks the discharge entirely disappeared. It is obvious that in cases complicated by a polypus the latter had to be removed by surgical interference. My statements prove that the methodical application of suction can be considered as an effective therapeutic measure in suppurative diseases of the nose and that, moreover, it will henceforth be more frequently possible to effect a satisfactory cure without operation than has hitherto been the case. There is little risk that in this way a necessary operation should be deferred too long because it will soon be easy for the physician to recognise whether by the application of the suction method an essential change for the better can be effected or not. In a similar way an effect may be produced on the middle ear by aspiration from the Eustachian tube. In this case the same apparatus can be used as for application in cases of nose diseases. The rarefaction of air will by no means become so strong as to cause a hyperæmia which might be injurious. But, on the other hand, it is to be supposed that the mucous membrane of the tube, and especially of the entrance of the tube, will be favourably influenced by the suction. How far this method is able to supplement Politzer's method, or even to replace it in some cases, must depend on experience. But it must be considered as an advantage of the former that the patient easily learns how to apply it and that the aspirating power can only be raised to a certain degree which is precisely regulated by the elasticity of the suction ball.

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[2] Lehrbuch der Ohrenheilkunde, 4te Auflage, Stuttgart, 1901.

[3] Hartmann. Die Krankheiten des Ohres und ihre Behandlung, 5te Auflage, Berlin, 1892.

[4] Berlin, 1900.

[5] S. 215.

[6] Having finished my essay, I find in the Medicin Klinik a report on my work concerning this method in which it is stated that Professor Seifert, of Wurzburg, has already mentioned a method for sucking accessory cavities. For this purpose he introduces the olive of a previously compressed balloon of caoutchouc hermetically into one nostril, while at the same time the other must be closed by a finger, and then he uses the act of swallowing for producing a closure from behind. But it seems that this method has not frequently been applied and this has doubtlessly only been the case because, used in this way, it could by no means prove successful.

[7] The apparatus is manufactured by Messrs. Kuhne, Sievers, and Neumann and it is to be obtained from Messrs. Mayer and Meltzer, 71, Great Portland street, London, W.

[8] Leipsic, 1903.

The apparatus used for the suction method when applied to the nose has the same form as the one described above, but, of course, its mask is smaller as the two nostrils and their immediate neighbourhood only need be hermetically closed.

The suction apparatus applied to the nose.—When the apparatus is applied to the ear the tuba Eustachii may be considered as closed and therefore it is only necessary to close the ear outwardly in order to obtain a space where the air is rarefied; when, however, it is applied to the nose it is necessary to effect a thorough closure of the throat as well. Although in this case the application of suction is consequently rendered more difficult, and even requires some practice on the part of the physician to cause a suction effect with every patient, yet even here it will be an exception for the patient not to be able to learn to apply the suction apparatus to his nose himself. This is no less important here than when applied to the ear, for this method can only be crowned by success when sufficiently frequently repeated.

There are two possible ways of closing the nose towards the throat: (1) by making the patient pronounce the vowels, and especially *i* (long German *i* = English ee), and (2) by swallowing, as has been used for the same purpose by Politzer. It is always advisable to try first the former method. The vowel *i* (ee) must be pronounced in a strong manner and as clearly as possible. This latter point is of great consequence as a great many patients are inclined to produce a sound more like *e* (a) than *i* (ee), which very often spoils the effect. Should this method be of no avail, which will more frequently be the case with the old than with the young, it will be advisable to make the patient perform a forcible act of swallowing which is sure to prove successful. Very often it will be noticed that patients claim to perceive at the same time a deaf feeling in the ear. This is caused by the fact that the tube which has been opened at the moment of suction has transmitted the rarefaction to the middle ear. By swallowing without any simultaneous suction this deaf feeling will be removed at once. I can only state that though I have very frequently applied the suction method for more than a year, I never perceived the least injurious influence upon the patient. It happens, it is true, that the suction, especially when applied for the first time, makes itself felt in a disagreeable way to the patients and sometimes even they will complain of a headache caused by the aspiration process but the pain will soon be over. If, however, it should continue on the following day, which will be exceptional indeed, a less effective suction ball should be used.[9] If, on the other hand, the mucous membrane (Schneiderian membrane) should show a slightly bleeding spot and if this bleeding should occur at every sitting an interruption of the application will be required but very often this bleeding ceases the following day.

The apparatus is applied to the nose as follows. A small compress of cotton-wool is applied and then the mask is put on the nose and the ball is compressed, and whilst the patient is pronouncing a long *i* or is swallowing the ball is allowed to regain its former size. The aspiration effect is directly noticeable by a strong suction feeling. The mucous membrane, whatever may have been its condition before, markedly swells, becomes red, and is covered with a thin layer of mucous. Both reddening and swelling soon decrease and in cases in which both symptoms existed before they are frequently reduced after the first suction. Besides, it will soon be found that if there are fluid secretions in one or in several of the accessory cavities they have been discharged through their several openings, not always at once, it is true, but very often after the suction has been repeatedly applied and exceptionally not before the following day.[10]

Except in the rare case of occlusion of the excretory duct this effect fails very seldom and therefore we have in suction a method for diagnosing diseases of the accessory cavities scarcely excelled by any other for certainty, simplicity, and ease; however, this is only of value in connexion with the question whether there exists any disease of the accessory cavities at all. On the other hand, it is rather difficult to decide with certainty which of the accessory cavities has been attacked by disease, because it can only exceptionally be known from which side the pus has been discharged. If, even when other symptoms are missing, we must be satisfied with the general diagnosis this disadvantage need not be considered as one of great importance when the suction method is employed. The frequency of its application depends, of course, entirely on the character of the disease; as a rule it has to be applied the more frequently the more copious the discharge of matter or secretions, say, about five times a day. As soon, however, as improvement takes place and continues the daily applications can be reduced until there is no more discharge. In many cases of empyema which did not improve spontaneously I was in this way able to obtain a thorough cure after applying the suction method for about a fortnight. If, however, the improvement is slow the case unquestionably is an old one which has become chronic; such chronic cases always require a longer treatment. Should there be found a polypus or some bony sequestra surgical interference cannot be avoided. As for the other cases, however, the suction method alone ought at least to be tried.

According to my experience this treatment will always be followed by this amount of success, at least, that the pain will be alleviated at once. Therefore the patient will have no objection whatever to undergoing a longer treatment, because after some time he will only need a few minutes for the daily application of the apparatus. The results obtained hitherto justify the hope that in many cases—if not in all—a long, lasting improvement will be sure to be effected. In the same way this method can also be confidently applied in cases of ozæna due to rhinitis atrophicans fœtida. The removal of crusts, which so very often proves rather difficult, is easily managed by aspiration, for after having been loosened by it they can easily be removed by the patient blowing his nose. This has to be done in a correct way—i.e., each nostril must be blown separately and by no means together. In five cases which I treated with the suction apparatus, applying it several times a day, the crusts not only lessened every day but disappeared in two of the above-mentioned cases altogether after one week's treatment; the patients were also fully freed from an empyema of the accessory cavities. Whilst some of these patients were allowed to stop the treatment for a time after the apparatus had been applied for some weeks only, others had to apply it to the nose once or twice a day for months and even for years in order to guarantee the complete cure of their complaint. Strict individualising in these cases as in many others will, of course, be required according to the character of the disease, which may require a more or less frequent application of the suction apparatus.

It must be mentioned that the hyperæmia caused by the suction treatment of the nose as well as of the ear has a most favourable influence, *especially in cases of rhinitis*; how far, however, the accessory cavities are favourably influenced by it too cannot yet be decided with certainty. Though I am fully aware of the fact that the suction method can scarcely be considered as a never-failing treatment for every disease within so difficult a region as these accessory cavities, I am, however, fully convinced that its advantages are evident enough to range it amongst the medical measures for treating such diseases.

Dieringhausen.

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[9] A weaker ball should always be used with children.

[10] The position of the antrum of Highmore, which is rather unfavourable for the suction method, can easily be corrected, if necessary, by a lateral position of the head. Also it ought to be noticed that the discharged secretions do not always appear at the anterior nares but frequently in cases of disease of the sphenoid cells, and perhaps even of the hinder ethmoidal cells, they flow into the pharynx and are then only discharged by hawking.

DELAYED CHLOROFORM POISONING.

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THE condition of delayed chloroform poisoning has not yet received general recognition by surgeons, though its importance can hardly be over-estimated. Stiles and McDonald[1] in a recent paper have drawn special attention to the subject and have presented a typical clinical and pathological picture of the condition. A case has recently come under our attention which corroborates very largely their observations but which presents also some additional points of interest. The literature on the subject has been so fully gone into in the above-mentioned paper that we deem it unnecessary again to deal with it.

The patient, a girl, aged three and three-quarter years, on the recommendation of Dr. R. Cross of Linlithgow was admitted to McKay Smith ward on April 8th, 1905. Nine months previously there was a history of an injury resulting in stiffness of the right elbow-joint which had become more swollen and painful after treatment by a bonesetter. On admission there were general synovial thickening of the joint and marked enlargement of the olecranon process of the ulna. There was no local abscess or sinus. The joint was excised by a posterior incision on April 11th. the upper end of the ulna and the head of the radius being removed. The total duration of chloroform anæsthesia was 30 minutes, five drachms of pure chloroform being used. No carbolic acid or strong antiseptic was used during the operation. Nothing exceptional was noted in the child's condition after operation, the pulse being, however, somewhat small, 132 per minute. During the afternoon she was sick and vomited once some bilious fluid and remained somewhat restless for the rest of the day. On the 12th the house surgeon (Dr. H. N. Fletcher) noted that she had had a restless night and vomited twice some greenish bilious material. She was very pale and complained greatly of thirst, the pulse being small and weak. The temperature remained slightly subnormal. The wound was examined and appeared to be healthy, there being no sign of hæmorrhage. A saline infusion given per rectum was not retained. A repetition of saline injection on three further occasions was retained. The child continued to be very restless all day and complained greatly of thirst. About 6 P.M. she became comatose, vomiting a considerable quantity of coffee-ground material two hours later. She never regained consciousness up to the time of her death at 5.30 A.M. on April 13th, 42 hours after operation. The temperature remained subnormal from the time of the operation. Although very restless the child did not cry out or shout. Her pupils remained markedly dilated throughout.

Necropsy.—A post-mortem examination was made on April 14th. The body was that of a fairly well-developed child. Rigor mortis was general. The right elbow-joint had been excised by a posterior incision. The upper end of the ulna and the head of the radius had been removed. The external wound looked perfectly healthy. On opening it up the tissues were blood stained but there was no evidence of pus formation in any part. Portions of tissue were excised from various points and the bone marrow was scraped from the open medullary cavities of the bones for microscopic examination. Both pleural and pericardial sacs were perfectly healthy. There was no glandular enlargement in the mediastinum. The thymus was not enlarged. There was a small amount of post-mortem clot in the right side of the heart. The cavities and orifices were not dilated, nor was there any hypertrophy. The valve segments were competent and quite healthy. The muscle was pale but firm. It showed no naked-eye evidence of fatty degeneration, nor was there any evidence of any interstitial changes. There was a tuberculous gland at the root of the right lung. The whole of the lung tissue was congested. There was no trace of consolidation, nor was there any evidence pointing to a bacterial infection. Apart from the congestion, the lung tissue, the pleura, the bronchi, and the vessels showed no abnormal condition. There was no peritonitis or other abnormality in the peritoneal sac. The stomach contained some altered blood, but no trace of ulceration or erosion of its mucous membrane could be detected. The pancreas showed nothing abnormal. The intestines appeared quite healthy. The mesenteric glands were slightly enlarged, pale in colour, but showed no evidence of tuberculosis. The liver was distinctly and uniformly enlarged. The surface was quite smooth and the colour almost of a canary yellow tint. On section there was seen to be an intense degree of fatty change. Throughout the greater part of the organ this was uniformly distributed, the outlines of the lobules were lost, and no separation could be made out between the central and peripheral zones. There were irregular areas in the right lobe, where the fatty change was not so advanced. Here the lobules could be made out and the fatty change was seen to be most intense at the peripheries of the lobules. No other abnormal change could be made out in the liver. The spleen was not enlarged. It was pale but firm and showed practically no pathological change. Both kidneys were slightly enlarged and were very pale. The capsule stripped readily, leaving a smooth surface. The stellate veins were not specially prominent. On section there was slight swelling of the cortex both superficial and deep. It showed an intense pallor, but the yellow tint so marked in the liver was not present. The Malpighian bodies were not prominent. The pyramids showed no abnormal condition. The vessels were quite healthy. There was no evidence of any septic foci or any evidence of tuberculosis. The suprarenal capsules were both enlarged, firm, and of a bright canary yellow tint. On section the yellowish colour extended throughout the cortex and the medulla. The bone marrow was pale but showed no naked-eye change. The brain was not examined.

Histology of the lesions—Portions of all the organs were fixed in a saturated solution of perchloride of mercury or in a 10 per cent. solution of formalin. Sections were stained with hæmatein and eosin, methylene blue and eosin, and specially for fat with sudan iii., scharlach R., and osmic acid. Others were prepared by Marchi's method and counterstained with licht grün or with rubin and orange.

The striation of the fibres of the heart was distinct and there was no segmentation of any of them. At places there was a slight amount of granularity in the body of the fibre but no fat could be demonstrated. There were no excess of pigment and no evidence of any increase in the interstitial tissue. The nuclei of the muscle fibres stained perfectly with hæmatein. The blood-vessels were not congested nor did their walls show any thickening. No fat could be demonstrated in the endothelial lining of the vessels

The capillaries in the alveolar walls of the lungs were dilated to a moderate degree but there was no marked evidence of acute congestion. The alveoli contained a few catarrhal cells but no inflammatory exudation was found in any part of the lung. The bronchi were quite healthy, the ciliated epithelium was intact, there was no desquamation of the epithelium, nor was there any congestion of the vessels in the bronchial walls. Fat was present in the form of minute droplets in many of the cells in the alveolar septa (Fig. 1). It was not easy to determine the exact nature of these cells because many of them were much swollen and obscured by the fat granules. Some of them appeared to be connective tissue cells, but undoubtedly a great number were the endothelial cells lining the alveolar capillaries. In some of the vessels a few free cells containing fat granules were seen but in none of the vessels was there any large accumulation of fat such as one finds in cases of fat embolism. Fat globules were also seen in some of the cells lining the alveolar spaces. Some of the cells containing fat which were found in the alveolar walls were probably cells which had migrated from other parts or which had passed by the lymphatic channels to the lung. That this passage was taking place is seen by a study of the spleen and the lymphatic glands. Still we are forced to the conclusion that a great deal of the fat was a local production formed in the cells by the direct action of the poison.

In regard to the liver, in sections in which the fat had been dissolved out by chloroform there was an irregular swelling of the liver cells, leading to in many places an almost complete closure of the capillaries between the rows of liver cells. The liver cells were markedly vacuolated, and in those in which the cytoplasm was not wholly destroyed it was very granular and formed bridges separating the vacuoles from one another. The nucleus in all of the cells stained perfectly with hæmatein. In freshly prepared sections stained for fat it was seen that all the cells from the centre to the periphery of the lobules were crowded with fat globules. The globules were mostly small but at places large globules almost completely filling the cells were seen. In certain areas where to the naked eye the fatty change appeared less marked it was seen on microscopic examination that all of the cells contained fat but that it was specially abundant in the peripheral zone of cells and that there the globules were larger than at the centre. Fat was also seen in the cells lining the bile capillaries and in the endothelial cells of the blood capillaries. In a few of the hepatic veins there were cells containing a good deal of fat and these cells were undoubtedly secreting cells of the liver. We were not able to detect free fat in any of the vessels. Apart from the fatty change in the liver cells there appeared to be no other abnormal condition of the liver. There was certainly no increase of fibrous tissue nor any cellular increase in the portal spaces—in fact, nothing lending any support to the view that some other pathological change preceded the acute fatty degeneration.

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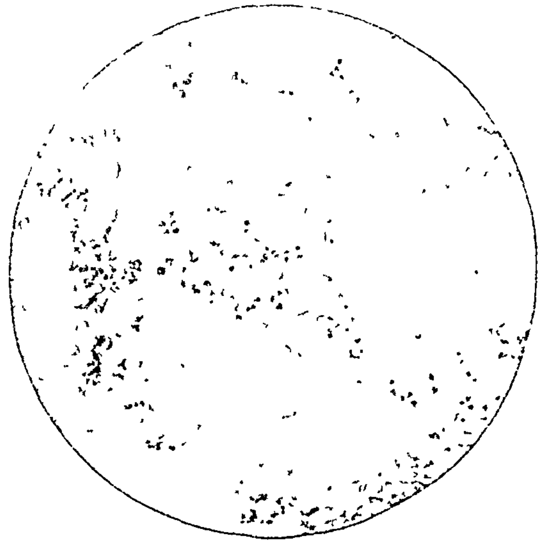
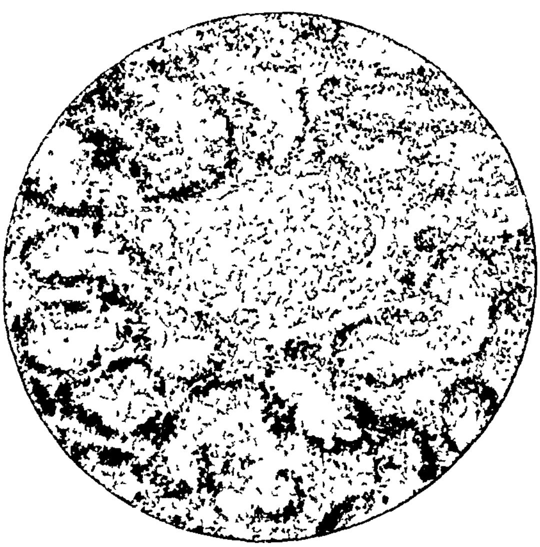
[1] Stiles and McDonald: Scottish Medical and Surgical Journal, August, 1904, p. 97.

FIG. 1.



Lung of child. × 200 diameters.

FIG. 2.



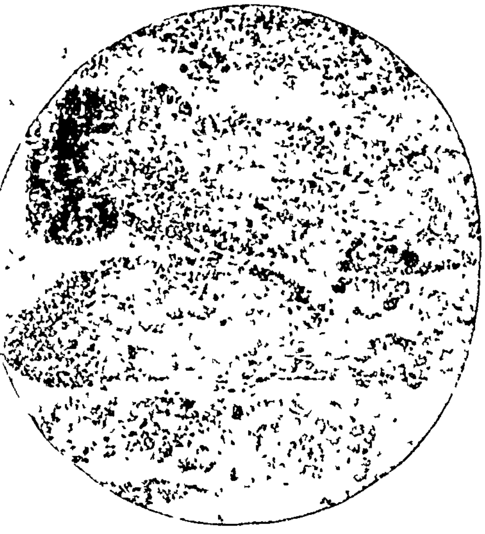
Kidney of child. × 200 diameters.

As to the kidney, the cells in all of the tubules, collecting as well as secreting, were swollen and granular and in paraffin sections there was very distinct vacuolation. The nucleus in most of the cells stained perfectly, though in some of the cells of the convoluted tubules there was karyorrhexis. There was no evidence of chromatolysis. In very few of the tubules were there any desquamated epithelial cells. There was very extensive fatty degeneration in almost every cell of every tubule. Only here and there a few of the collecting tubules showed no fat. The fat globules varied much in size but were mostly small and were situated in the deeper part of the cells (Fig. 2). The glomerular capillaries were congested but there was no evidence of any cellular increase in the tufts. The epithelium of Bowman's capsule showed no proliferation In a few of the Malpighian bodies between the tuft and Bowman's capsule there was a granular exudation. Fat in the form of very fine globules could be demonstrated both in the endothelium of the capillaries and in the epithelium lining Bowman's capsule.

The larger vessels of the interstitial tissue and the straight vessels in the medulla were dilated and filled with blood The larger veins and arteries showed no special changes. No fat either in the form of free globules or as globules in the cells could be demonstrated in them.

In the case described by Stiles and McDonald no change was discovered in the suprarenal capsules. In our case there was very extensive fatty degeneration of the whole of the glandular cells. This degeneration was most marked in the cells of the cortex and especially of those near the surface (Fig. 3). There was also quite definite fatty degeneration in the endothelial cells lining the capillaries.

FIG. 3.



Suprarenal body of child. × 200 diameters.

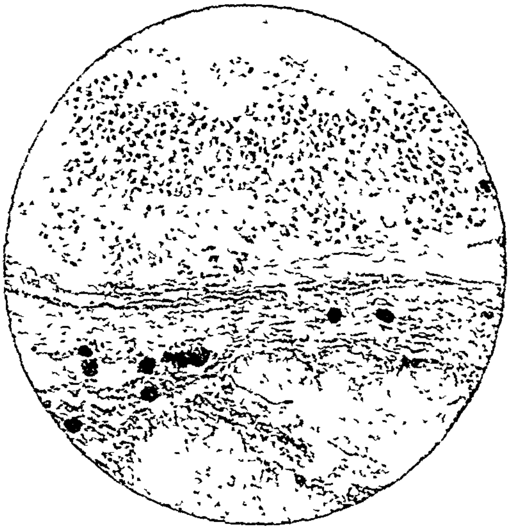
With regard to the mesenteric glands, unfortunately these were the only glands examined. In the lymph spaces at the periphery of the lobules there were numerous cells containing fat. So abundant were these that they mapped out very distinctly the lobules of the gland. The gland cells proper showed no change, nor could any change be made out in the vessels. It seems, therefore, most likely that the cells containing fat were migratory and had passed by lymphatic channels to the glands.

Some of the smaller arteries of the spleen showed marked swelling and hyaline degeneration in their middle coats. There were a few large mononucleated cells in the lymphatic spaces containing fat globules. No other abnormal change was made out.

In the pancreas there were scattered irregular areas of necrosis in which the nuclei did not stain with hæmatein, but as the post-mortem examination was not made till several hours after death no importance can be attached to these. The rest of the cells, both of the gland itself and of Langerhans' islets, showed no abnormal condition. No at could be demonstrated.

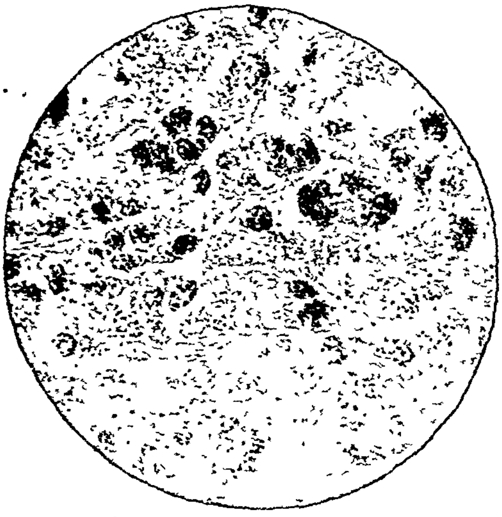
There was no abnormal condition in either the muscular or submucous coats of the stomach. The secreting cells showed marked changes. In sections prepared by the ordinary paraffin process the cells, both central and peripheral, were swollen, granular, and vacuolated, but the nucleus *stained perfectly* throughout. In sections specially stained for fat the peripheral cells were filled with globules which reacted to all the "fat" stains, while the central cells also showed a *moderate* degree of fatty degeneration (*Figs.* 4 and 5). The endothelial cells of the capillaries between the glands were swollen and contained numerous fat globules in a state of fine division.

FIG. 4.



Stomach of child. × 45 diameters.

FIG. 5.

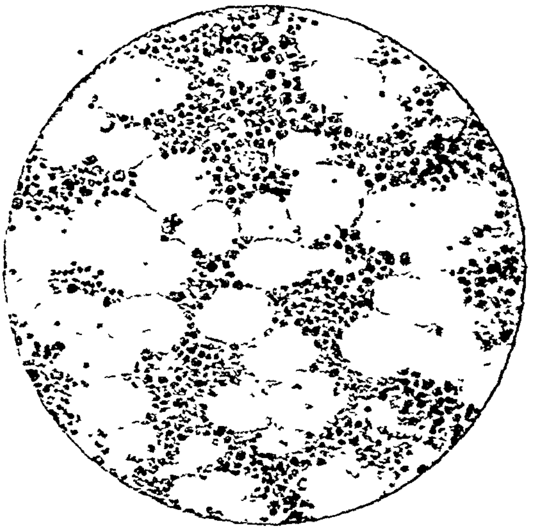


Stomach of child. × 200 diameters.

The bone marrow (*Fig.* 6) was taken from the femur. There was very little, if any, proliferation of the blood-forming elements of the tissue. The *fat cells* were present in a greater amount than is usually found at this early age. The ratio of nucleated red *cells, both* normoblasts and megaloblasts, to the formative cells of the white series was rather larger than normal. There was certainly no increase, but if anything a diminution of the leucoblastic elements. Comparing the specimens from this case with those of a child of the same age also with tuberculous disease but who died from diphtheria the contrast was very striking. In the latter case there were an almost entire disappearance of the fat cells and a very complete leucoblastic transformation of the tissue. The changes then in the *bone marrow were similar to* those observed by Dr. W. E. Carnegie Dickson, to whom we are indebted for examining and reporting on the specimen, in other cases of tuberculous disease in children. *We need not* specially refer to these, as the work by Dr. Dickson we hope will be published shortly. On the other hand, the changes are entirely unlike those seen in cases where there was a *definitely septic element in the case.*

We very much regret that no examination of the blood was made during life but an *examination of the blood in the* vessels in the bone marrow and in the various organs showed very few *leucocytes* and pointed to a leucopenia rather than a leucocytosis accompanying any septic condition. Pieces of tissue were cut out from various places in the neighbourhood of the wound and were examined microscopically. There were various collections of polymorphonuclear leucocytes at places, with areas of hæmorrhage. *No bacteria of any* kind were found though a considerable number of specimens stained in various ways were *examined. The bone marrow* from the opened medullary cavity was also examined. *This shows a hæmorrhagic infiltration and a considerable* invasion by polymorphonuclear leucocytes. No bacteria could be demonstrated.

FIG. 6.



Bone marrow of child. × 200 diameters.

Remarks.—1. *Clinical.*—If we are to accept the view of Nothnagel, Ostertag, and others that chloroform produces the pathological changes indirectly in *the tissues* by destroying the red blood corpuscles increasing anæmia should be a prominent *sign* and one which was markedly noticeable in the present case. Thirst was a marked symptom, the child constantly crying out for drinks. The character of the vomiting differed somewhat from that of most recorded cases. It is interesting *to note that* the child vomited two or three times on the day prior to operation. She vomited on two occasions during the night following the operation some greenish-yellow fluid. There was never at any time any retching. Six hours before her death she vomited some coffee-ground material. We can exclude in this case the mechanical *action* of repeated retching as a cause of the hæmorrhage into the stomach. We are also able to exclude, *as we shall* afterwards show, any septic element in the causation of the hæmorrhage. Delirium, a prominent symptom in most cases, was absent and although marked restlessness was present there was none of *the crying* or *shouting* recorded in other cases. It will be seen that in this case the clinical symptoms *presented* in *many* respects the picture described by Stiles and McDonald, Guthrie, and others. There was no sign of jaundice throughout, although an examination of the urine revealed a slight trace of bile to ordinary reagents. Extreme pallor *was, however*, present to such a degree as to suggest to one of us the possibility of hæmorrhage and the necessity of examining the wound on the day following the operation.

2. *Pathological.*—It will be seen that the pathological appearances were in the main similar to those of the case described by Stiles and McDonald. The main objections to the view that the clinical symptoms and the pathological appearances in these cases are due primarily to chloroform poisoning are founded on the facts that similar symptoms and similar pathological appearances are found in patients who die as a result of fat embolism and in those who are poisoned by chemical agents or by septic products. We must deal with these in turn.

Fat embolism.—It is only necessary to mention this to exclude it. Though the clinical manifestations are very similar in the two classes of classes fat embolism is rarely fatal and one usually has no difficulty in fatal cases in showing large areas of the pulmonary capillaries filled with oil drops. In our case no free oil was found in any of the lung capillaries though careful search was made for it. Unfortunately the brain was not examined.

Chemical agents.—These were absolutely excluded. The preparation of the skin was carried out in the following manner. It was first thoroughly cleansed with lysol (one drachm to 20 ounces of water) and fluid soap, then rubbed over with ether, washed with a solution of carbolic acid (1 in 20), sponged with sterilised water, and a soaking of gauze wrung out of sterilised water was applied for 24 hours. The same cleansing process was repeated before the operation. We cannot imagine that in this method of preparation there could have been sufficient absorption of the chemical agents used to produce any pathological change.

Septic products.—The more serious objection that the death was due to sepsis must be dealt with fully. The clinical symptoms were very similar to those of patients dying from intense septic infection and on clinical grounds alone we admit that the two conditions can hardly be distinguished. The temperature remained slightly subnormal throughout, a point not absolutely against the idea of intense sepsis but certainly pointing the other way. Then again, the pathological changes in the various organs may be exactly simulated in septic cases. Like Stiles and McDonald, we cannot agree with Guthrie that the fatty liver of chloroform poisoning can be distinguished from the fatty liver of sepsis. One of us is quite familiar with the same colour and the same diffuse fatty change in livers of patients who have died from sepsis where chloroform could not have played any part in the process. It must be admitted that in many of the recorded cases a septic cause has not been wholly excluded. Even in the case reported by Stiles and McDonald they were suspicious of a septicæmic condition, and the lungs yielded a pure culture of pneumococcus. In their further report of the case they have shown, and we think conclusively, that the pneumococcus had nothing to do with the condition. We have tried as far as possible in our case to exclude any possible septic agent. As we have already indicated, the wound was absolutely healthy; microscopic examination of the various parts of the tissues which were exposed at the operation and of the exposed bone marrow gave no histological or bacteriological evidence of local organismal infection. We attach a considerable amount of importance to the histological examination of the bone marrow of the femur, a feature to which attention has not been directed in previously reported cases. Muir and others have shown that the reaction of the bone marrow to septic infection is a very delicate one. There are very early a congestion of the vessels, an increase of the leucoblastic elements, and a disappearance of the fat cells. Carnegie Dickson[2] has shown that this congestion appears in two or three hours after infection and that the leucoblastic transformation is well marked in from 24 to 48 hours. We, of course, know that in certain very severe infections, and occasionally in the less severe, there is a leucopenia with practically no reaction in the marrow. But in such a case as we report—a young child where the bone marrow is in an actively developing condition, where there has been no long-standing disease which might cause an exhaustion of the marrow, and where no trace of bacteria could be found locally in the various organs or in the marrow—we think it extremely unlikely that it could come under this class of cases. We think, therefore, that we are justified in excluding any bacterial poison as a causal agent in this case.

Having thus excluded death from fat embolism and a poisoning by bacterial infection or by any antiseptic we feel that we are entitled to place this among that class of cases, fortunately still not numerous, where death can only be attributed to delayed chloroform poisoning. The main symptom in most recorded cases was retching and vomiting. In our case this symptom was much less prominent as the child vomited on only three occasions from the time of the operation. There had been no retching, and coffee-ground vomit was observed only six hours before death. At the necropsy a considerable quantity of a similar fluid was found in the stomach. How is this blood to be accounted for? There was no obvious lesion of the gastric mucous membrane. The bleeding may be partly accounted for by the rupture of minute over-distended capillaries, this distension being due to obstruction in the liver owing to the great swelling of the cells there. Careful examination has shown, as we have already indicated, a fatty change in the endothelium of the capillaries in various organs and this is quite well marked in the mucous membrane of the stomach. This we believe to be the main factor and the later occurrence of it in our case supports the contention that there is a rupture of the capillaries due to a fatty degeneration of their lining cells. No doubt retching would aid this rupture and in cases where there is "chloroform sickness" this coffee-ground vomit would be an earlier symptom. The coma which seems to be associated with all the cases may be accounted for in various ways. We may explain it by the formation of some poisonous products allied to acetone formed from the fat or from intermediate substances in the fat development. On the other hand, we find the destruction of almost all the secreting and excreting cells in various organs—e.g., liver, kidneys, suprarenals—and consequently there must be an accumulation in the system of the ordinary injurious products of metabolism. Added to this the fact that wasting of muscles, &c., takes place apparently in excess during the processes of fatty degeneration, we find the factors for producing an auto-intoxication.

Guthrie[3] has maintained that in these cases the chloroform has acted merely as a helper on of a pre-existing process. The very small number of deaths as compared with the number of chloroform anæsthesias gives some support to this view. Still, though we cannot disprove his contention we agree with those who maintain that the condition is a primary one and wholly due to the chloroform. It has been shown conclusively by experiments on animals that this extreme fatty degeneration can be produced in healthy organs after subcutaneous injection of chloroform or after prolonged inhalation of the drug. One of us has shown that extreme fatty degeneration in the liver and kidneys can be produced in healthy rabbits in from 24 to 26 hours after injections of bacillus diphtheriæ and we see no reason to suppose that such a protoplasmic poison as chloroform may not act as rapidly. If chloroform can produce such gross pathological lesions, lesions which are practically incompatible with life, why, it may be asked, are there so few cases of death from its action? The factor which determines that only a very small proportion of patients show these gross pathological lesions we cannot explain and we must therefore still attribute it to idiosyncrasy or susceptibility.

CONGENITAL MULTIPLE OCCLUSIONS OF THE SMALL INTESTINE.[1]

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THE small intestine is less often the seat of congenital malformations than either the œsophagus above or the colon, the rectum, or the anus below. The commonest situations for congenital malformations in the small intestine are: (1) the duodenum at the site of the opening of the bile and the pancreatic ducts; (2) at the junction of the jejunum with the duodenum; and (3) the ileum, a short distance above the ileo-cæcal valve, at the point where the omphalo-meseraic or vitelline duct is given off. The following case is, in my opinion, unique in that the small intestine is occluded in no less than three situations, while in five other places the lumen of the bowel is practically obliterated by annular constrictions giving rise to a localised distension of the intestine immediately above, and a relative collapse below, the points of constriction.

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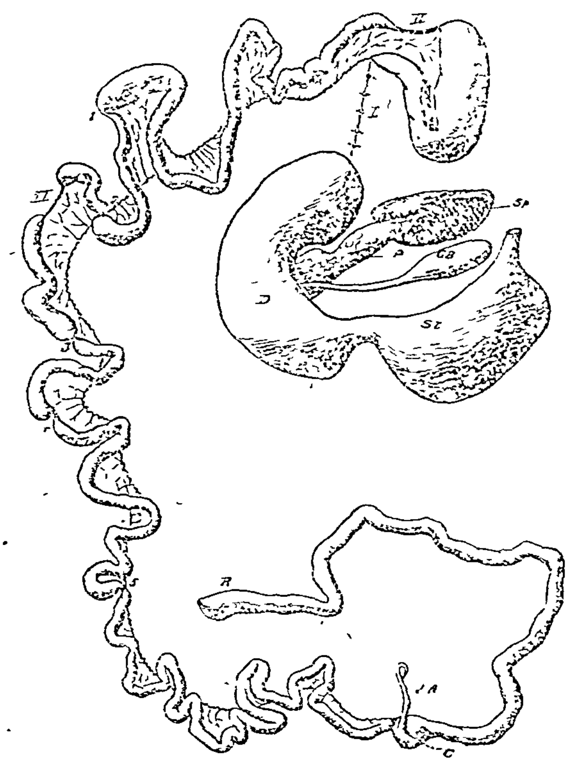
[2] W. E. Carnegie Dickson: Thesis, University of Edinburgh. (Not yet published.)

[3] Guthrie: THE LANCET, Jan. 27th, 1894, p. 193.

[1] The specimen was shown at a meeting of the Society for the Study of Disease in Children held on Jan. 20th, 1905.

This remarkable specimen was taken from an infant who was admitted into the Children's Hospital, Birmingham, under the care of Mr. C. A. Leedham-Green as a case of "imperforate anus." The child, a seven months baby, was well developed, but the skin was of a peculiar coppery hue (it looked like that of a half-Indian baby) and the nurses in the ward named the child the "bronze baby." Soon after admission to hospital an enema was given, a soft gum-elastic catheter being easily passed three or four inches up the rectum, and a large motion of meconium of normal appearance was passed. This result, of course, proved that the rectum was patent. The child had vomited all the milk that had been taken from birth. Death took place nine days after admission, operative interference being deemed inadvisable.

At the necropsy all the organs were found to be healthy with the exception of the small intestine. On opening the abdomen the most conspicuous feature was a hugely distended duodenum which was of even greater volume than the stomach. The cause of this distension was found to be a complete obliteration of the intestine at the duodeno-jejunal juncture, shown by the line -o-o-o-o- in the figure and marked I. The wall of the distended duodenum was obviously hypertrophied. The stomach wall was also hypertrophied. The pylorus was normal and the œsophagus was healthy. The stomach and the duodenum were void of contents. The first two and a half to three inches of the jejunum were distended in the peculiar manner shown in the figure and this distension was due to another obliteration of the bowel, marked II in the figure. At II the bowel was merely represented by an impervious thickening of the free edge of the mesentery half an inch in length. Still lower down in the intestine, at III in the figure, there was an exactly similar condition present—viz., a complete obliteration of the lumen, the bowel being again represented by a thickening of the free edge of the mesentery. In addition to these three situations in which the bowel was completely occluded there were five other places, 1, 2, 3, 4, and 5, in which the bowel showed annular constrictions of such completeness that *immediately above the constrictions* the intestine was distended, while below it was relatively collapsed for a short distance. The wall of the bowel in these distended parts was so thinned that the contents of the gut were visible through the wall, and these contents appeared to the naked eye to resemble ordinary meconium. Of these constrictions the most marked was that most highly situated, viz., 1, whilst the lowest, 5, was the least obvious, and, in fact, the whole series of five shows a progressively decreasing order in completeness of the constriction. The figure shows the situation of the cæcum and of the vermiform appendix and so it is clear that all these abnormalities are situate in the jejunum and perhaps in the upper part of the ileum.



A drawing reduced to exactly half size. I, II, III, Sites of occlusion. 1, 2, 3, 4, 5, Sites of constriction. St, Stomach. D, Duodenum. P, Pancreas. G B, Gall-bladder. Sp, Spleen. C, Cæcum. V A, Vermiform appendix. R, Rectum.

Some other points of interest worthy of note in connexion with this case are the following: 1. Normal meconium was passed as a result of an enema soon after the admission of the child into hospital, and yet neither bile nor any ingested products—e.g., desquamated epithelium—obtained from the amniotic fluid could have gained access to the intestine below the duodeno-jejunal juncture. This shows that, although bile and desquamated epithelium contribute normally to the formation of the meconium they are not essential and that the meconium is chiefly derived from the secretion of the alimentary canal. It may be contended that both these products had found their way into the bowel before its lumen had become obliterated; this is possible, but it must have occurred very early in intra-uterine life, because the occlusions at II and III must be of very early formation, if, indeed, the intestine was pervious from end to end at any date. In connexion with the part played by the bile in the formation of the meconium it may be borne in mind that in cases of congenital obliteration of the bile ducts it is the rule for normal meconium to be passed soon after birth but for all subsequent motions to be devoid of bile pigment.[2] Foster speaks of a considerable quantity of meconium being found in the fœtus in cases where the liver has been absent.[3] 2. With so complete an obstruction as occurs at the duodeno-jejunal juncture one might have expected to find the bowel below in a state of collapse and yet instead of this we find that immediately above the occluded parts II and III and the constrictions 1 to 5 the bowel is actively distended with what appeared to be ordinary meconium. It is clear that the whole of the meconium within the jejunum, the ileum, and the colon must have been secreted from the glands in the intestinal walls and that this secretion is capable of going on in a segment of intestine completely cut off above and below—e.g., in the segment between I and II, and that between II and III. 3. Nine days is a long time for an infant—especially a premature infant of seven months—to survive without any food.

Congenital malformations are generally said to be either the result of an intra-uterine peritonitis giving rise to bands of adhesion which cause strangulation, or to be due to an arrest of development. In the present case there were no signs of any peritonitis, either recent or old, and so we are led to adopt the second somewhat unsatisfactory theory and say that the anomalies described above are due to an arrest of development. It seems to me, however, that rather than being due to an arrest of development these abnormalities are due to an accident in the course of development of the nature of strangulation and that two stages may be distinguished in the process—viz., a strangulation at the duodeno-jejunal juncture during the formation of the duodenal loop and later the formation of a number of more or less complete volvuli during the process of lengthening of the intestine and the formation of its coils. It will be remembered that the duodeno-jejunal juncture is the most fixed portion of the small intestine, being held in position by the superior mesenteric vessels which groove its anterior surface and by a strong fibrous band descending from the left crus of the diaphragm and the tissue round the cœliac axis. This band, better marked in the fœtus and young child than in the adult, contains plain muscular fibres and is called the musculus suspensorius duodeni.[4] This, moreover, is the point where the gut first receives a full investment of the peritoneum. The duodenal loop is formed by the twisting of the embryonic stomach, which early occupies a median position with its surfaces right and left, its greater curvature posterior and its lesser curvature anterior. The pyloric end becomes tilted away from the vertebral column in such a way that the right side of the stomach becomes its posterior surface and the duodenal loop is thrown over to the right side of the abdomen. This duodeno-jejunal juncture is therefore a very likely place for an intra-uterine obstruction to occur, and statistics, in fact, support this view, for it is the second situation in point of frequency for congenital malformations of the small intestine to occur. If, then, we grant that this was the main obstruction it is fair to conclude that later in intra-uterine life when the small intestine, originally short and straight, lengthened and became thrown into coils it underwent an amount of twisting with the production of a number of volvuli of more or less complete formation and that this twisting gave rise to the complete occlusions II and III, as well as to the constrictions 1 to 5. In support of this view it is to be remembered that in these two situations the thickened free margin of the mesentery represents the intestine—i.e., the intestine is not completely obliterated but is represented by impervious fibrous cords, the free margin of the mesentery.

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[2] Rolleston: Diseases of the Liver, Gall-bladder, and Bile Ducts, p. 647.

[3] Foster, Text book of Physiology, vol. iv., p. 1527.

[4] Quain's Anatomy, vol. iii., Part iv., p. 102.

I have not been able to find records of a case similar to the above. Hirschsprung of Copenhagen in a thesis on congenital occlusions of the small intestine, of which an epitome is to be found in the *Medico-Chirurgical Review* for 1862, collected records of 31 cases. Of these, in 16 (more than 50 per cent.) the lesion was situate in the duodenum; in six in the ileum close to the cæcum, and therefore probably connected with the omphalo-meseraic or vitelline duct; and in nine cases the lesion was situate in intervening portions of the gut. In no instance, however, was the abnormality repeated in the course of the canal and it is in the multiplicity of the occlusions that the present case differs from those in the above series.

In conclusion, I would express my thanks to Dr. A. E. R. Weaver, the resident medical officer of the Children's Hospital, Birmingham, for his excellent drawing of the specimen, and to Mr. Leedham-Green for his courtesy in allowing me to publish this case.

Birmingham.

A CASE OF SACCULATED ANEURYSM OF THE ABDOMINAL AORTA, TREATED BY THE INTRODUCTION OF SILVER WIRE AND THE PASSAGE OF CONSTANT CURRENT:

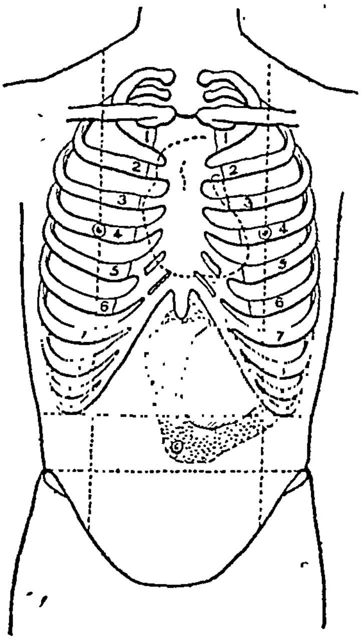
WITH DESCRIPTION OF A SIMPLE METHOD OF INTRODUCING THE WIRE AND INSULATING THE CURRENT.

BY CORNELIUS A. GRIFFITHS, F.R.C.S. ENG.,
ASSISTANT SURGEON TO THE CARDIFF INFIRMARY.

THE patient, a male, aged 37 years, was admitted to the Cardiff Infirmary on July 1st, 1904, complaining of a lump in the epigastric region; with continuous pain in the left side and pain of an acute boring character in the back. Stated very briefly his history was as follows. By profession he was a travelling photographer and he dated his illness back to a day about two months previously when lifting the bag containing his rather heavy camera and other impedimenta, and giving it a swing over his shoulder, he first noticed pain in his back which he attributed to a strain, because he lifted the case rather more jerkily than usual—being in a hurry on that occasion. He had always been a temperate man. No history of syphilis could be obtained, but he had a gonorrhœa some 20 years ago; there was no history of rheumatism.

On admission the patient presented the appearance of a man suffering from continual pain. The tumour in the abdomen occupied mainly the epigastric region and was almost entirely on the left of the middle line; it became lost under the ribs and extended downwards nearly to the umbilicus, its size being about that of a cocoanut; it caused some bulging of the epigastrium and was distinctly a pulsating tumour with a well-marked systolic bruit; in short, no doubt was entertained as to the aneurysmal nature of the tumour, and the diagnosis was that of a sacculated tumour of the commencement of the abdominal aorta (*Fig.* 1). Pain was complained of in the back and on the left side and this was said to be constant; pain in the epigastrium also followed the taking of food and there had been occasional retching but no actual vomiting. The pain in the back was the most complained of and was bad enough to keep him awake at night. The patient was an intelligent man and said that there had been no increase in the size of the tumour lately, but he thought it had become harder and although at one time he was able to "squeeze it all away" he was now unable to do so. Pain was also complained of in both legs below the knees but not in the thighs or the lower abdomen. The heart sounds were clear, the pulse was regular, tension fairly high, with a suspicion of thickening of the arteries. There was no evidence of any other aneurysm. There was no albuminuria.

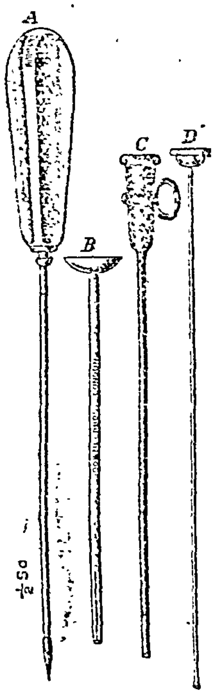
FIG. 1.



The lined area is that of the evident tumour; the dotted area is that of comparative dulness round the tumour merging above and to the right in the dulness of the liver.

Operation was performed on August 3rd, 1904. The usual preparations for carrying out an aseptic operation were made and the patient was anæsthetised by Dr. Cyril Lewis, ethyl chloride and ether being used. An incision a little to the left of the middle line was made over the tumour and the abdomen was opened, the aneurysm presenting immediately below the diaphragm and above the lesser curvature of the stomach, the viscus being closely applied to, and stretched around, the left and lower borders of the aneurysm. I had intended, if possible, placing a temporary ligature around the aorta on the proximal side of the tumour, but this was not practicable, as the sac left no room between its walls and the diaphragm. A spot devoid of large vessels was now selected on the surface of the tumour and a small circle inclosed in a purse-string suture, and through the centre of this a fine long metal trocar and cannula were thrust well into the sac. The trocar was withdrawn, the cannula remaining in position, and through this was introduced a vulcanite cannula for insulating purposes. Next some fine silver wire was introduced into the sac through the double cannula. While putting in the wire I tried to avoid the communication between sac and aorta by keeping the end of the cannula directed to one or other side of the sac, with what success will appear later. After a foot or so of wire was in the wire "kinked," so it was cut off flush with the cannula and pushed home with the ramrod which I had specially prepared with a "cupped" end for this purpose and found that it worked very satisfactorily. Some more wire was then pushed through and connected with the negative terminal of a constant current battery, the circuit being completed through the patient by means of an electrode placed on the thorax. A current of from 15 to 25 milliampères was given and continued

FIG. 2.



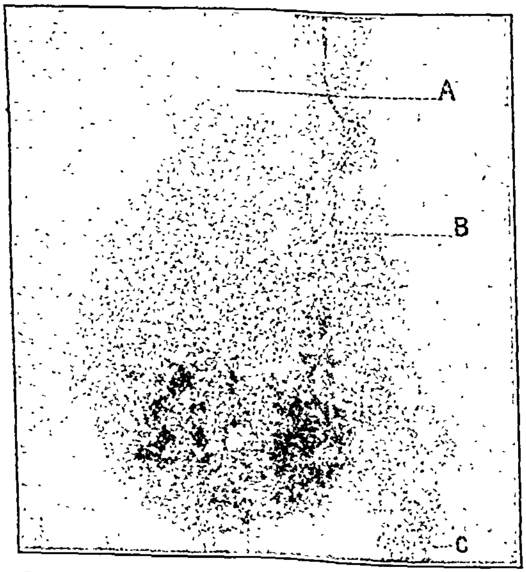
A, Metal trocar. B, Metal cannula. C, Vulcanite cannula. D, Ramrod.

for 15 minutes; at the end of this time it was noticed that the aneurysm felt harder and the expansile pulsation had grown less if it had not quite disappeared. The wire (about six feet) was then pushed home with the ramrod, the cannulæ were withdrawn, the purse-string suture was tied, and the abdomen was closed. It was noticed after the abdomen was closed that the bulging caused by the tumour had almost disappeared. The patient suffered greatly from shock and although consciousness was recovered restlessness was very marked, the patient throwing himself about and exhausting what little pulse remained and he died five and a half hours after operation.

The post-mortem examination showed that there had been no hæmorrhage. The heart was healthy; the arch of the aorta showed signs of atheromatous changes. The aneurysm came off from the main trunk of the abdominal aorta and communicated with it by means of a narrow elongated mouth about one and a half inches in length. The sac was filled with a dark clot and coiled wire, a double loop of which had entered the aorta and passed for about two and a half inches up into the thoracic aorta. I have taken a radiograph of the aneurysm and adjoining parts of the aorta exactly as removed from the body in order to show (Fig. 3) the disposition of the wire in the sac and its passage into the aorta. There was no erosion of the vertebræ.

This is at present the only case of aneurysm of a large vessel in which I have had an opportunity of trying the wire and electrolysis method and at first sight it does not seem encouraging, but the cases reported by Maunsell,[1] H. A. Ballance,[2] and others lead one to hope that the cure of these distressing cases is becoming surgically possible, hence I record this case hoping that some of its points may prove useful.

FIG. 3.



In the radiograph A marks the level of the diaphragm, the thoracic aorta appearing above. B marks the wire coiled in the aneurysm. C, Continuation of the abdominal aorta.

For carrying out my wishes in the preparation of the very simple instruments (Fig. 2) used during the introduction of the wire I am indebted to Messrs. Down Brothers. In actual practice I found the instrument work quite easily, the "cupping" at the end of the ramrod engaging the end of the wire and running it down the cannula without trouble. I was agreeably surprised to find that there was practically no hæmorrhage from the sac on introduction of the trocar and although a slight trickle took place at the side of the cannula while the wire was being introduced it stopped soon after the electric current was turned on.

That the passage of the wire into the trunk of the main vessel is a point to be reckoned with is apparent on a glance at my radiograph. I certainly tried to prevent this by the position of the mouth of the cannula but unsuccessfully; it will be observed that it was a double loop of wire and not the ends of wire which escaped. Perhaps if one used short lengths of wire this might not happen. The immediate clotting within the sac by the passage of a small current I think is a distinct gain.

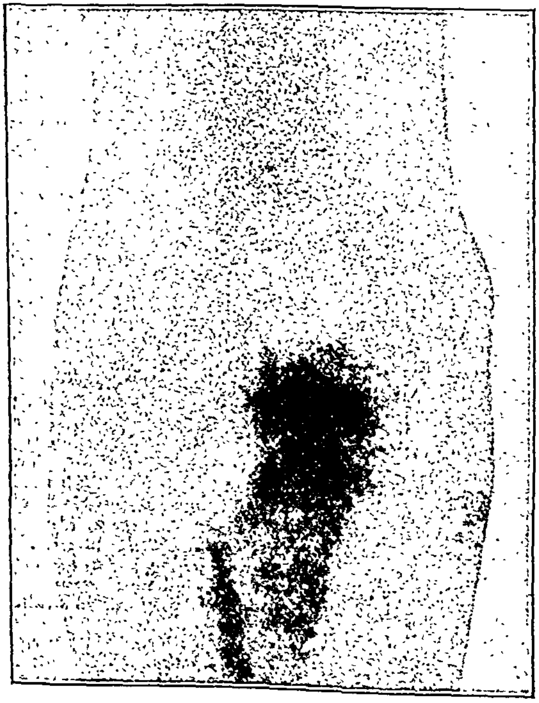
The rapidly fatal termination in my case, I have no doubt, was favoured by the interference with the functions of the stomach, which, as I have already stated, was stretched around the left and lower borders of the aneurysm. The patient failed rapidly before the operation and became increasingly anxious that something should be tried to relieve him even if it were not successful. Iodide of potassium was administered on admission, five-grain doses increasing to 15 grains three times daily, and for a couple of weeks before the operation the patient received ten grains of calcium chloride night and morning.

Cardiff.

FRACTURE OF THE HEAD OF THE RADIUS.

BY ROBERT KNOX, M.D. EDIN., M.R.C.S. ENG., L.R.C.P. LOND.

THE accompanying skiagram illustrates a form of fracture which is not frequently met with. The patient, a man, aged about 30 years, was thrown from a carriage and was found to have injured his elbow-joint. When I saw him the exact



Skiagram showing fractured head of radius.

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[1] Brit. Med. Jour., June 18th, 1904.
[2] THE LANCET, Oct. 1st, 1904, p. 939.

nature of the injury could not be made out on account of the extensive swelling which occurred immediately after the injury. There were immobility of the joint and widening in the transverse diameter, and on movement of the joint crepitus could be elicited. Skiagrams revealed the exact nature of the injury—namely, fracture of the head of the radius with displacement of the upper fragment backwards and outwards. The joint after four weeks was rigidly fixed and movements were found to be impossible. The patient was anæsthetised and the joint was forcibly extended and flexed. Crepitus could still be elicited. An attempt was made to bring the fragments into exact apposition but this was found to be impossible. The arm was put up in a right-angled splint and kept quiet for a few days until the swelling had subsided, then early passive movements were commenced. These movements were continued twice daily for a fortnight and afterwards continued along with massage of the muscles. Later pronation and supination of the forearm were commenced and continued for several weeks. When I last saw the patient three months afterwards he had recovered a considerable amount of extension and flexion; he could pronate and supinate the forearm perfectly. The joint appeared to be normal and the fracture had united. The movements of flexion and extension were limited slightly. The patient had a useful arm and judging from the progress made in the short time he was under treatment I hoped he would ultimately recover the full use of the joint.

The case illustrates the difficulty of diagnosing injuries of the elbow-joint and shows the great value of the Roentgen rays in cases of injuries of joints where the nature of the lesion cannot be exactly determined.

Highgate, N.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

> Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE, W.C.

A CASE OF SYPHILITIC INTRACRANIAL DISEASE.

(Under the care of Dr. THOMAS BUZZARD.)

FOR the notes of the case we are indebted to Dr. F. L. Golla, resident medical officer.

A man, aged 29 years, was sent by Dr. W. M. G. Glanville to the National Hospital for the Paralysed and Epileptic and admitted under the care of Dr. Buzzard on May 31st, 1905, complaining of loss of power in the left arm, headaches, and outbursts of laughter. He had served as a soldier in India and contracted syphilis four years ago; he was treated for three weeks by mercurial injections. He had a secondary rash but no other symptoms. Up to two months previously to admission he was feeling perfectly well but then developed right facial neuralgia which was ascribed to bad teeth. A tooth was extracted without any relief. A month later he began to suffer from severe headaches of frontal character. At the same time the neuralgic pains began to disappear. A week previously to admission he lost power in the left arm, which felt numb and useless. The loss of power was not complete. The acute loss of power lasted for two days and then began to improve. The sensation of numbness also gradually diminished. About five days previously to admission he became aware of facial palsy and suffered from uncontrollable outbursts of laughter and weeping. He had no vomiting or difficulty in swallowing. He noticed slight deafness of the left ear.

On admission the patient, a well-developed young man, looked extremely ill and was drowsy and apathetic. The pulse was full, with a tension of 160 millimetres of mercury, and very slow, averaging about 40 beats per minute. With regard to the cranial nerves, there was some degree of hyperæmia of the right optic disc but no definite swelling. The pupils reacted normally and all ocular movements were normally performed. There was no nystagmus or diplopia. There was slight nerve deafness of the left ear. There was definite weakness of the lower left facial muscles both to voluntary movements and in a lesser degree to emotional movements. He was liable to spasmodic attacks of laughter or weeping, during which all the facial muscles were uniformly affected; there was no corresponding involvement of the laryngeal muscles during these attacks, which were noiseless, but accompanied by lacrymation. All the other cranial nerves were normal. Smell was unimpaired. There was some definite weakness of the left arm, especially in the movements of the distal joints, and very slight relative weakness of the left leg was present. There was no objective sensory abnormality and stereognosis was unimpaired. The deep reflexes were much diminished on either side; the knee-jerks could only be obtained on reinforcement. The superficial reflexes were brisk and equal. The left plantar response was extensor and the right was flexor.

A tumour of the right temporo-sphenoidal lobe was diagnosed on admission. Three days after admission there was complete absence of all deep reflexes. Four days after admission the patient was considerably worse. He was very drowsy and vomited frequently. He could only be induced to take food with difficulty. He would only answer in monosyllables when addressed. He still had frequent attacks of laughter and weeping. The pulse was 38 and the blood pressure measured by the Riva-Rocci apparatus was 165 millimetres of mercury. Breathing was occasionally somewhat irregular and his condition was generally so alarming that Dr. Buzzard was telephoned for. The patient was ordered inunctions of one drachm of unguentum hydrargyri twice a day and 15 grains of potassium iodide every four hours and free purgation with calomel. Three days later the patient showed signs of commencing salivation and the mercury was discontinued. Four days after the commencement of mercurial treatment the patient showed considerable improvement. He was less drowsy, the pulse was about 60, and the blood pressure sank to 135 millimetres of mercury. A week after the onset of the antisyphilitic treatment the spasmodic laughter had nearly disappeared and there was no trace of the left-sided weakness beyond a relative weakness of the grasp of the left hand when compared with the right. The hyperæmia of the right disc was, if anything, less pronounced. The deep reflexes still remained absent and the left plantar response extensor. The headaches and vomiting had completely vanished. The potassium iodide was now diminished to 30 grains three times a day. A month after admission the patient was discharged as cured. The only signs of his recent illness were the absence of the deep reflexes (the knee-jerks could be only obtained on reinforcement) and slight deafness of the left ear. Both plantar responses were flexor.

Remarks by Dr. BUZZARD.—The symptoms of intracranial tumour in this case were well marked and shortly after admission became so alarming (although the patient was under specific treatment) that the question of operative interference had to be seriously considered. But in view of the history of syphilis and the patient's age and the strong probability that the symptoms were due to the presence of gumma or gummatous meningitis of the right cerebral hemisphere it was resolved to persevere in the specific treatment and this was accordingly at once very actively pushed. The result was eminently satisfactory.

LEEDS GENERAL INFIRMARY.

A SERIES OF CASES OF TOOTH PLATE IMPACTED IN THE ŒSOPHAGUS; REMOVAL IN ONE CASE BY LATERAL ŒSOPHAGOTOMY.

(Under the care of Mr. H. LITTLEWOOD.)

FOR the notes of the cases we are indebted to Mr. H. Collinson, late resident surgical officer.

CASE 1.—This patient, the most interesting of the four, was a man, aged 35 years, who was admitted to the Leeds General Infirmary on March 23rd, 1902, with the following history. During the night of Feb. 14th he awoke suddenly and discovered that he had in his sleep swallowed a tooth plate containing three teeth of the upper jaw. At this time he experienced no great pain and stated that by putting his finger down his throat he could reach the plate. He went to a druggist in the early hours of the morning and an emetic was administered but the plate could not be dislodged. Shortly afterwards the plate slipped further down the gullet and began to cause him great pain; he then with difficulty walked to the local hospital suffering agony at every respiration. He remained in the hospital for some weeks and during this time several unsuccessful attempts at removal were made, both with and without anæsthesia. Early in March he commenced to suffer from severe cough with foul expectoration and his breath became extremely offensive. On March 23rd he was admitted to the infirmary complaining of slight difficulty in swallowing solid food and the expectoration of large quantities of fœtid pus. From these symptoms it was inferred that the tooth plate had ulcerated through the œsophageal wall and opened the left bronchus or one of the larger bronchial tubes and was lying partly in the œsophagus and partly in a bronchiectatic cavity. A skiagram demonstrated the presence of the foreign body at the level of the fifth dorsal spine.

On April 3rd—i.e., seven weeks after the accident—Mr. Littlewood operated under ether anæsthesia. An incision was made along the anterior border of the left sterno-mastoid commencing at the clavicle, the edge of the muscle was demonstrated, and the omohyoid, sterno-hyoid, and sterno-thyroid muscles were divided. The left lobe of the thyroid gland, which was found to be enlarged and cystic, was removed and the œsophagus was exposed; this was then opened by an incision one and a half inches in length and the edges of the wound were held apart by small volsella. A coin-catcher was passed and after some difficulty the edge of the tooth plate was located apparently projecting into the left side of the œsophagus. After repeated attempts with a pair of long œsophageal forceps the edge was at last caught and the plate was dragged out. It was covered with exceedingly foul pus and had evidently lain imbedded in the wall of the œsophagus and an abscess cavity communicating with the left bronchus. The œsophageal incision was closed by a continuous catgut stitch and the external wound wae partially sutured and drained; there was some subsequent suppuration about the wound but it was quite healed in a month. The present condition of the patient is, on the whole, satisfactory; he still expectorates a quantity of purulent sputum which, however, is not offensive, and examination of the chest reveals occasional râles at the left apex but the signs are insignificant.

The next three cases bear a striking resemblance to the foregoing so far as their history is concerned; all swallowed the tooth plate whilst asleep; in one the plate carried four and in the other two cases three upper teeth.

CASE 2.—A man was admitted to the Leeds General Infirmary on June 16th, 1903, having swallowed his tooth plate the previous night. He presented no symptoms. A skiagram demonstrated the plate at the level of the fourth dorsal spine. Under ether it was removed with the coin-catcher after one or two attempts. The patient left the hospital on the next day.

CASE 3.—This patient was admitted to the Leeds General Infirmary on June 3rd, 1904, with an identical history. After a skiagram had been taken showing the plate at the level of the second dorsal vertebra the foreign body was removed without difficulty with the coin-catcher.

CASE 4.—A man was admitted to the Leeds General Infirmary on August 6th, 1904, stating that he had swallowed a tooth plate ten weeks before. He had spent three weeks in the local hospital, where unsuccessful attempts had been made at removal. No successful skiagram had been taken. On admission he complained of pain at the level of the cricoid cartilage and difficulty in swallowing with occasional vomiting. A skiagram showed the foreign body at the level of the fourth dorsal vertebra. On August 8th it was removed with the coin-catcher at the third attempt. The patient left the hospital on the next day.

Remarks by MR. COLLINSON.—The impaction of a foreign body in the œsophagus is by no means an uncommon accident in children and in the greater number of cases the impacted body is a coin—usually a halfpenny. Its removal by means of a coin-catcher even at a considerable interval of time after the accident is usually a comparatively easy matter and it is rarely that an anæsthetic is necessary. In adults accidents of this nature are less common and the impacted body is usually larger—most frequently a tooth plate—and its removal is a more formidable undertaking. The above series of cases occurred within a comparatively short space of time and were all admitted to the General Infirmary at Leeds under the care of Mr. Littlewood, by whose courtesy I am permitted to record them.

As regards Case 4, an impaction of ten weeks' duration had apparently led to little, if any, damage to the œsophageal walls and the removal proved to be comparatively simple, but when one compares Case 1, in which the impaction was of shorter duration, one realises the dangers which are liable to accrue from the presence of a large and irregularly shaped foreign body in the œsophagus. A cross-section of the thorax at the level of the fifth dorsal vertebra shows that the relation of the œsophagus to the descending aorta is almost as close as its relation to the left bronchus and although the arterial walls are doubtless more resistant than those of the bronchus, cases have not infrequently been reported in which foreign bodies have produced a fatal result from ulceration of the former. The removal of a foreign body the impaction of which is of long duration is therefore an anxious operation to all concerned and one in which the greatest care is essential. The cases recorded illustrate the danger of sleeping with small tooth plates in the mouth, particularly if they do not fit well, and also the great value of the x rays in their localisation when accidentally swallowed.

On reference to the literature it is found that Eitel reports a case of lateral œsophagotomy for the removal of a tooth plate six years and four months after the accident, and Maylard reports a case for Lennox Browne in which a tooth plate was successfully removed with the coin-catcher after the lapse of three and a half years, but there are evidently only a few cases in which a tooth plate which has produced the grave lesion that occurred in Case 1 has been successfully removed by lateral œsophagotomy.

Medical Societies.

BRITISH ELECTRO-THERAPEUTIC SOCIETY.—A provincial meeting of this society was held at Leicester on July 26th, Dr. Donald Baynes, the President, being in the chair.—Dr. H. Lewis Jones opened a discussion on the Present Position of the Treatment of Carcinoma and Sarcoma by Electrical Methods, illustrating his remarks with two cases which he brought from London.—Mr. T. J. Bokenham then gave an address on the Treatment of Stricture of the Urethra by Electrolysis, showing some new forms of instruments for this purp —The meeting then adjourned to July 27th, Mr. J. Hall-Edwards read a paper on X Ray titis, showing various protective devices, including and improved tube shield designed by Dr. Belob of Dr. E. R. Morton, the secretary, on behalf of Mr. Chislehurst, showed a Tooth-brush extracted b from the stomach of a patient 50 hours after swallowed during a fit of temporary insanity suicide. The action of the gastric juice on the brush was most remarkable. The accompanied the specimen showed it stomach very satisfactorily.—Dr. G. paper on Æsculin in Conjunction with Treatment of Lupus Vulgaris.—Dr. paper on the Diagnosis of Early Tu X Ray Examination of the Chest. a very interesting series of la patients whom he had had ur then adjourned until July 28t cribed and showed a new co quency Couch which was very from complication. It was f present.—Dr. Lewis Jones rea the Milliampèremeter as a M illustrated by a series of lan opened a discussion on the Inf on Blood Pressure and Body T those present took part.—The on Neurasthenia.

EXETER BOROUGH AS annual report of the Exeter just been issued, states that t institution on Dec. 31st, 1904, males and 190 were females.

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different species of the same class. The probable modes of infection are by the accidental inoculation of material containing the parasites or possibly through a biting insect. Again, the evidence adduced points to the fact that even when numerous parasites are found in a Delhi sore no general disease such as kala-azar results, hence it is not likely that the infection occurs by the skin in kala-azar; also if any biting insect were proved to be the infecting medium of the sores it would not follow that kala-azar could be contracted in this way. Lastly, as the parasites were found in oriental sores contracted in Delhi, Kurnaul, Shahabad, Lahore, Quetta, and Dera Ismail Khan we may conclude that the sores known as "Delhi," "Lahore," "Sind," and "frontier" sores are one and the same disease caused by the same parasite. The ulcers known as "Naga sores" are apparently of a different nature.

The author has not found any confirmation of the opinion that true Delhi sores occur in dogs and other animals. He failed to communicate the affection to the former. Lastly, he investigated the question of the parasite acting as a cause of enlargement of the spleen. There is a close resemblance between the parasites of Delhi sore and those found in certain cases of enlargement of the spleen. Captain James concludes with regard to this that it is not justifiable to hold all the cases diagnosed as "malarial cachexia with enlargement of the spleen" as being due to the parasite recently discovered in the spleen and other organs, but that a diagnosis of "malarial cachexia" would in all probability in the present state of our knowledge be correct. The work is illustrated by an excellent plate of the micro-organism and altogether reflects great credit on the author.

Mammalian Anatomy, with Special Reference to the Cat. By ALVIN DAVISON, Ph.D. London: Rebman, Limited. 1903. Pp. 250, with 108 figures in the text. Price 7*s.* net.

THIS small treatise is not at all modeled upon the two best-known works dealing with the cat and its anatomy. The classical handbook of Strauss Durckheim is mainly admirable nowadays on account of its fine engravings of the osseous and muscular systems, while Dr. Mivart's, "The Cat," is anything and everything about the cat, psychological as well as anatomical and physiological. The author of the modest introductory work before us contents himself with a general survey of feline structure in as few words as possible and with as many illustrations as are needed to save verbiage. Accompanied by this text-book it will be easy to ascertain for oneself by dissection the principal features in the anatomy of a cat, or, indeed, of most mammals. Histology, where absolutely necessary—as, for instance, in the case of ovary and ova—is not neglected and it is remarkable into how small a space Dr. Davison has been able to compress most of the essentials. We are obliged to say "most" of the essentials, since there is no disquisition upon the cœlom. This word, "body cavity," and "diaphragm" do not occur in the index, though there is some account of the mesenteries which suspend the viscera and the diaphragm is figured. The cœlom ought to have had a section to itself, duly set forth in the table of contents, inasmuch as the modification of that organ is one of the most typical features of mammalian anatomy as compared with that of lower vertebrates. In no vertebrate that is not a mammal and in all mammals without exception is the cœlom divided into two chambers—a thoracic and an abdominal—by a muscular partition lying behind the lungs but in front of the liver. Otherwise, there is hardly an anatomical question raised by the actual facts that is not referred to. The rigorous saving of space has, however, compelled the author to deal with many topics in what the Germans call a "step-motherly" fashion. The functions of such organs as the thyroid are merely hinted at and such histology as is considered necessary to the book is summarily dealt with. The numerous figures add greatly to the usefulness of the book, especially those that are anatomical; the histological drawings are largely from micro-photographs and for the most part do not strike us as being thoroughly satisfactory. A section, for example, of intestine on p. 131 is more like a drawing of the horn of a rhinoceros than anything else in nature.

LIBRARY TABLE.

Die Chirurgischen Eingriffe bei Storungen des Bewegungs-Apparates der Augen. (The Surgical Treatment of Muscular Defects of the Eyes.) By Dr. E. LANDOLT of Paris.—In this pamphlet Dr. Landolt recognises two modes of operative procedure for the cure of strabismus—tenotomy and advancement; tenotomy being the division of the tendon of the muscle which appears to be acting too strongly and advancement being the bringing forward, either with or without division, of the muscle which appears to be inefficient, and by this means affording it a better purchase to effect the rotation of the eye. Both proceedings, tenotomy and advancement, may be practised simultaneously or successively. In each case the excursion of the eye, the capability of convergence, and the power of single vision with the two eyes must be tested before and after the operation. Dr. Landolt describes the different modes of performing tenotomy and dwells upon the ill consequences that are so often observed even when this operation has been cleverly done. He points out the many advantages that result from advancement, though he acknowledges that it requires much more care and skill than simple tenotomy. He gives full details of the plan which he has himself, after much consideration, adopted and supplies a drawing that elucidates the somewhat complicated proceedings. In regard to the etiology of squint, he regards strabismus convergens as due to spasm of convergence—that is, of one or both of the internal recti—brought about by hypermetropia, as Donders maintained. It is active in its nature. Strabismus concomitans divergens, on the other hand, is due to relaxation of convergence and is a passive condition. An appendix contains a simple mode of enucleation, the chief feature being the employment of a pair of scissors curved both on the flat and on the edge. There is a very complete bibliography of the operations that have been proposed or adopted for squint.

Indigestion Clearly Explained, Treated and Dieted, with special remarks on Corpulency, Gout, and Constipation. By THOMAS DUTTON, M.D. Durh. Sixth edition, enlarged and revised. London: Henry Kimpton. 1905. Pp. 212. Price 1*s.* 6*d.* net.—The sixth edition of this work is published at a reduced price. The author says that he is totally averse to the members of the medical profession advertising themselves in any way but is in favour of the profession educating the public up to the times by means of medical works—such works as the general public can be trusted safely with, which will lead them away from the path of quackery.

The Seaside and Inland ABC Holiday Guide to all Health and Pleasure Resorts and Places of Interest in the United Kingdom. Illustrated with photo views. London: Wentworth Publishing Company. 1905. Pp. 331. Price 1s. net.—The aim of these pages is to give in a concise manner accurate and plain descriptions of all recognised resorts and places of interest in England, Scotland, Ireland, and Wales, with such particulars as to situation, access, population, and distance as may be useful to the prospective visitor and which may enable him to form an idea as to what each place is like. The younger generations will here see places described which cater for their amusement and entertainment; the older folk, the feeble and the afflicted, may read of quiet places of retreat where they may find renewed life and vigour. A list of the golf links throughout the kingdom is to be found at the end of the work, together with lists of all the principal angling stations, of the mountain districts, and of the coaching centres. This little guide appears to us to be all that the publishers claim for it; wherever we have dipped into its pages we have found the information accurate and the descriptions just and fair.

How to Become a Nurse: The Nursing Profession, How and Where to Train. Edited by Sir HENRY BURDETT, K.C.B. New and revised edition. London: The Scientific Press, Limited. 1905. Pp. 360. Price 2*s.* net.—This is the seventh edition of this book from which full particulars can be obtained concerning the nurse training schools in this country, the colonies, and the United States of America. The contents of the book are official in that they are revised each year by the representatives of each institution. The text has been somewhat added to in this new edition. The work certainly fulfils the two chief purposes for which it was designed. In the first place it meets the case of every woman who is attracted to nursing and desires to become a fully trained nurse, and in the second place it has proved of material assistance to matrons and hospital officials in lessening the amount of correspondence by inquirers who seek the information which it contains. The particulars in the volume are arranged on a uniform plan which makes reference easy. The book begins with a useful summary of some of the requirements of the training schools and this will simplify matters for those who are thinking of taking up nursing as a calling. The aim of the editor is to give such an account of the requirements which may have to be fulfilled that each reader before taking up the work of nursing may have some knowledge of what qualifications and so on are essential and what the duties will generally be. A useful and very clear outline of the principal laws affecting nurses is contained in a chapter of 13 pages. The final pages are devoted to a consideration of the provident funds and associations for the benefit of nurses.

Garden Cities in Theory and Practice. By A. R. SENNETT, Member of the Institute of Civil Engineers. London: Bemrose and Sons, Limited. 1905. 2 vols. Pp. 1404. Price 21*s.* net.—This work is an amplification of a paper on the Potentialities of Applied Science in a Garden City which was read before Section F of the British Association for the Advancement of Science. Mr. Sennett, who is well known in the different sections of the engineering world as the author of kindred works and as the honorary librarian of the Automobile Club, is as well qualified as one man can be to write on the great number of questions of which these thick volumes treat. In his introduction he ventures the opinion that in his "Garden Cities of To-morrow" Mr. Ebenezer Howard has produced a book which, aided by the support of public opinion, may promote a great and beneficent change and open up a new vista in social, industrial, and national welfare. Mr. Sennett writes: "I do not know that any apology is due from me for a work upon the same subject, seeing that it is put forward in reinforcement of that to which I refer, except it be for its length, which has arisen from anxiety on my part to bring forward matters for consideration during the inception of the proposed cities." In turning over the pages of these beautifully illustrated volumes we are transported to the realms of the author's Utopia, and while we write "of the author's Utopia" we are conscious that it is one which is, in part at least, capable of realisation if those responsible will only remember the words of Lord Chesterfield that "those who aim vigorously at perfection will come nearer to it than those whose laziness or despondency makes them to give up its pursuit from the feeling of its being unattainable." Mr. Sennett says that in these pages he has ventured to assert that the day for the useful discussion of the industrial economics of a nation is passed and become next to valueless. For no scheme, thesis, or principle can be of utility or practically workable which is not founded upon a basis formed from the data derived from subsisting international conditions. "If we are to retrieve our supremacy, or, indeed, to re-establish ourselves upon a firm commercial basis, are to build new and improved cities in which capital can be invested and safely and profitably worked, we must learn to think both imperially and internationally. We must, moreover, be prepared to conform to such changes—be they industrial, social, commercial, or fiscal—as time has wrought; changes to which others, less self-satisfied but of greater prescience, have already found it beneficial to conform." Mr. Sennett's suggestions are strenuous and exhilarating; they must help to solve a gigantic problem, to neutralise the evil effects of overgrown populations, and thereby to increase the social happiness of the masses in this country.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by Sir MICHAEL FOSTER, K.C.B., F.R.S., and J. N. LANGLEY, Sc.D., F.R.S. Vol. XXXII., Nos. 5 and 6. July 13th, 1905. London: C. F. Clay. Price 11*s.*—The contents of these numbers are as follows:—1. On the Chemical Specificity of Precipitins, by Andrew Hunter, M.B., chemical research scholar. Precipitins are antibodies and were first discovered by Bordet in 1897. He treated rabbits with repeated injections of cow's milk and found that in time the serum of the animal treated gained the property of precipitating milk even in extreme dilution. Similar precipitins were subsequently obtained by injections of blood sera, white of egg, hæmoglobin, and many other proteids. Wassermann demonstrated the specific nature of this reaction. The serum obtained by injection of, say, ox serum would precipitate the serum of an ox but within limitations no other serum, not the serum of the horse or of the dog or of the guinea-pig. Later researches have shown that there is some, though not a powerful, action on the serum of nearly related animals. Dr. Hunter shows that the albumin, euglobulin and pseudo-globulin of ox serum are each capable of leading to the formation of precipitins which are in a limited degree specific. The precipitins thus obtained are mixtures of at least four distinct antibodies, of which albumin yields one only, while euglobulin and pseudo-globulin each yield three. The production of precipitins follows a wave-like course and is concurrent with an intermittent leucocytosis, the number of leucocytes at any moment bearing an inverse relation to the amount of precipitin. 2. Observations on the Gaseous Metabolism of the Small Intestine of the Rabbit, by A. E. Boycott, M.D. Oxon. In these experiments it was found that oxygen disappears from the intestine partly by diffusion but mainly by being changed or absorbed by the mucous membrane. It is normally present in the intestine of the rabbit. The intestinal wall is very permeable by carbon dioxide. Nitrogen injected into the intestine undergoes little change in five hours. There are certain combustible intestinal gases which are complex and of unknown proportions. 3. Of the Efferent Relationship of the Optic Thalamus and Deiter's Nucleus to the Spinal Cord, with special reference to the Cerebellar Influx of Hughlings Jackson and the Genesis of the Decerebrate Rigidity of Ord and Sherrington, by F. H. Thiele, M.D. Lond., pathologist to University College Hospital. Dr. Thiele's experiments show amongst other points that the optic thalamus contains in its posterior part on each side a centre which controls the coördinated movements of walking; that the optic thalamus exerts an inhibitory control over the opposite cortical cells; and that the cerebellar cortical cells appear to exert an inhibitory action over Deiter's nucleus of both sides but especially of their own side. 4. The Changes in the Viscosity of the Blood during Narcosis, by R. Burton-Opitz, from the Physiological Laboratory of Columbia University at the College of Physicians and Surgeons, New York. The viscosity varies with ether and chloroform narcosis and is not in constant relation with specific gravity. The mean viscosity of the blood of the dog is 5·5 times as great as that of distilled water. 5. On the Antitryptic Action of Serum Albumin, by S. G. Hedin, from the Lister Institute. 6. The Cilioscribe, an Instrument for Recording the Activity of Cilia, by W. E. Dixon, M.D. Lond., and O. Inchley, M.D. Cantab., with four figures in the text. 7. The Action of Adrenalin, by T. R. Elliott, M.A., George Henry Lewes student in physiology, with 12 figures in the text. This is a long and important article. Mr. Elliott observes that a positive reaction to adrenalin is a trustworthy proof of the existence and nature of sympathetic nerves in any organ. The stimulating effect takes place at the junction of muscle and nerve. The irritable substance at the myoneural junction depends for continuance of life on the nucleoplasm of the muscle cell, not on that of the nerve cell. 8. Observations on the Action of Trypsin, by S. G. Hedin, with two figures in the text. 9. The Normal Alveolar Carbonic Acid Pressure in Man, by Mabel Purefoy Fitzgerald and J. S. Haldane, F.R.S. It was found to have a mean value of 5·16 per cent. of one atmosphere in men, 4·78 in women, 4·89 in boys, and 4·63 in girls. 10. The Human Cardio-pneumatic Movements, by D. Fraser Harris, with five figures in the text. 11. The Action of Optical Isomers: (2) Hyoscines, by Arthur R. Cushing, M.D., and A. Roy Peebles, with two figures in the text. The Proceedings of the Physiological Society for May 20th and June 17th are included in these numbers, with the title page and the table of contents of the thirty-second volume of the journal.

Scottish Medical and Surgical Journal.—In the July number of this periodical are two papers of neurological interest—one by Dr. Edwin Bramwell upon a case of alexia in which at the necropsy there was found a lesion corresponding with the distribution of the posterior cerebral artery; and the second by Dr. J. V. Paterson on some cases of word blindness. An inaugural lecture by Dr. A. H. F. Barbour on the History of Obstetrical Anatomy calls merited attention to the work of some early writers in this field. Dr. G. R. Wilson deals with the occurrence of pain and with the peculiar symptom of sudden attacks of fear in connexion with cardiac disease, with a view to persuade general physicians to recognise the fact that mental symptoms are not things beyond ordinary medical ken but are closely allied to other nervous phenomena. Mr. J. Hogarth Pringle records a case of reversal of the patella—a twisting of the bone by external violence so that its posterior surface looks anteriorly—a rare form of injury.

Birmingham Medical Review.—In the number for June the second Ingleby lecture on Mentally Defective Children maintains the high level of interest reached by the first. We cannot, however, help regretting that a little more care was not exercised by the author over the wording of the lecture when it came into print, as the English here and there leaves a good deal to be desired: the matter is admirable. Mr. Charles A. Leedham-Green discusses the important question of marriage after the occurrence of gonorrhœa and shows that there is a difference of opinion as to what constitutes proof of a satisfactory cure. Dr. W. Murrell records two cases of ulcerative colitis and advocates the use of solutions of argyrol—a silver preparation—in the treatment of this condition.

Looking Back.

FROM

THE LANCET, *SATURDAY*, August 11, 1827.

The Hospital OUT-PATIENT system, and the *Public Infirmary* and *Dispensary* systems, are reducing those GENERAL PRACTITIONERS, who happen to come within their influence, to distress and beggary. Yet there is no Act of Parliament, no Surgical Charter to remove, or even check, this growing evil. The little influence our College does possess, is used to augment it, by holding up hospital surgeons as men of a superior grade, thereby bestowing honour on those individuals through whom the great majority of the profession are so much injured, both in reputation and in purse. It surely was never intended by the FOUNDERS of hospitals, that persons in affluent circumstances should become the objects of their generous bounty; that respectable TRADESMEN should attend as OUT-PATIENTS, and be supplied with medicines and advice GRATUITOUSLY; yet such is the practice to an almost incredible extent, thus depriving private practitioners of that emolument to which they are justly entitled. It appears, that in the statement published by some of the Governors of the London Hospital, who did not relish the late job, that the number of OUT-PATIENTS at GUY'S was underrated, and the following correction (evidently official) was forwarded to *The Times* immediately after the error appeared:—

> "Under the head of London Hospital, in *The Times* of Tuesday, the especting 3rd inst., an incorrect (doubtless of such Guy's Hospital having been mad at Guy's statement is now sent for inserti ysicians, Hospital the in and out-patients we house 3; assistants ditto, 1; surgeons, 4; apothecary, 1; total, 9; nearly 8000 pupils, 3; grand total, 12. Now, of out-patients alone, the last received relief in the last four months of 1826, and during (15,268) past six months of this year, 1827, upwards of 15,000 only have been already relieved. The out-patients, though generally only once, are often seen frequently, in the week. There is, indeed, require it one regular admission day for them; but all cases that It are continually attended to, whenever they present themselves. the Hos- may also be mentioned, that the regular number of beds in endowment pital exceeds 400. Of such an establishment, formed by the which of one man, its governors and officers, and even the country in Thomas Guy was born, may surely justly be proud."*

So that FIFTEEN THOUSAND TWO HUNDRED AND SIXTY-EIGHT out-patients have been already relieved at GUY'S, during the last past six months of the present year. Here is a pretty system. RELIEVED, be it remembered; how many there have been maimed and killed, Mr. HOSPITAL PUFF does not tell us. Now, when we reflect that medical practitioners are never backward in tendering either advice or medicine *gratuitously* to a truly distressed object, when we likewise reflect that the poor laws have secured medical attendance to the PAUPER, there is something in the above puff that excites our warmest indignation. THOMAS GUY, we take it, did not intend to be one of the destroyers of the medical profession, to found a shop for quacks, or to give medicines to such as do not require or deserve them.[1]

The *Times* of August 10th, 1905, has the following interesting excerpt from its issue of Saturday, August 10th, 1805:—"It is a lamentable fact that the Small Pox is extending its ravages, not only in the metropolis, but in many populous cities and towns of the kingdom, to a degree unexperienced for several years. It is believed, that at present about *fifty persons die weekly*, by this disease, in London and its environs. In one house there have been eleven deaths. The mortality at Norwich has also been considerable; in consequence of which, a meeting has been convened, at which the Mayor of that city presided; and it has been resolved that a General Inoculation for the *Cow Pox* shall immediately take place. Surely it is high time, that prompt and efficacious measures were taken, to stop the further ravages of that fatal disorder in the metropolis."

Curiously and appropriately, in the same number of the *Times* (August 10th, 1905) an announcement appears that a memorial tablet was on August 9th erected by the London County Council on No. 14, Hertford-street, Park-lane, where Edward Jenner resided in 1803.

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* *Times*, July 5, 1827.

[1] Excerpt from leading article.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT LEICESTER.

ON July 26th the members of the Association were entertained in the evening at the museum buildings of Leicester by the Midland branch of the Association. The magnificent museum buildings, together with the art gallery adjoining, were thrown open for the occasion and the grounds were beautifully illuminated. Unfortunately heavy rain somewhat marred the enjoyment of those who wished to be in the gardens but the valuable collection of pictures and the very fine show of antiquities served as a solace for the disappointment. Naturally enough great attention was bestowed on the celebrated picture of "Orlando pursuing the Fata Morgana," presented to the town by the artist, Mr. G. F. Watts, R.A. The entertainment of the guests was further provided for by the clever artistes called "The Follies," and in a large upper room Mr. Harrison Hill, the well-known society entertainer, drew crowded audiences. Praise must be also given to the band of the Royal Artillery (Portsmouth).

The annual breakfast given by the National Temperance League to the members of the British Medical Association was held this year on July 27th in the Temperance Hall at Leicester, Dr. J. W. Leigh, the Dean of Hereford (the President of the league), being in the chair. The great feature of the meeting on this occasion was the presentation of an address of appreciation to the medical profession by the National Temperance League on behalf of the whole temperance movement in recognition of the important services which have been rendered to the cause of temperance by the medical profession through its progressive research and its declarations as to the nature and effects of alcohol. Speeches in support of this address were delivered by the Dean of Hereford, the President of the Association, Dr. C. K. Millard, Dr. Harry Campbell, and Dr. R. Jones. The proceedings terminated with a vote of thanks to the Dean of Hereford, which was proposed by Mr. W. McAdam Eccles and seconded by Mr. T. Laffan.

On July 27th Mr. R. C. Stewart, the President of the Leicester Medical Society, entertained the members of the Association and their friends at a garden party in the grounds of the County Asylum which is situated a little way out of Leicester on the London-road; and on the same day a garden party was given by Mr. Maurice Levy, M.P., and Mrs. Levy at Humberstone Hall, near Leicester. Special electric cars conveyed the guests to Humberstone and Mr. and Mrs. Levy received over 300 visitors, the ceremony of introduction taking place at the end of the famous avenue of cedars leading to the Hall. The performance by local amateurs of a clever comedy entitled *The Duchess of Bayswater & Co.* was quite worthy of the applause which it evoked and the Imperial Prize Band delighted a number of the visitors. Altogether this entertainment must be reckoned one of the successes of the meeting. In the evening the ladies committee, under the presidency of Mrs. G. Cooper Franklin, contributed to the gaiety of the meeting by providing a most enjoyable entertainment in the King's Hall at the Grand Hotel, Leicester. The hall was most tastefully decorated and Mrs. Franklin received many congratulations on the success of her efforts. An orchestra with glee singers and other vocalists discoursed music and the crowded apartments testified to the popularity of the fair hostesses.

On July 28th Mr. S. Faire, J.P., and Mrs. Faire opened their magnificent place at Glenfield Frith to the visitors and contributed to their enjoyment by holding a garden party for the occasion. The comfort of their guests was studied to the smallest detail: electric tramcars ran from the centre of the town to the Groby-road terminus where carriages were waiting to convey the guests to Glenfield Frith. Mr. and Mrs. Faire had secured the services of the band of the Royal Artillery and the playing of this band during the afternoon was much appreciated by the musical enthusiasts amongst the party. The splendid weather and the lovely grounds insured the success of the gathering, as every other detail had been carefully thought out. On the same day a party of visitors strictly limited to 60 visited Belvoir Castle, travelling in special saloon carriages to Stathern. Lunch was served in the train and on arriving at Stathern station private carriages were found waiting to convey the party through the beautiful woods of the district to Belvoir Castle which was reached shortly after 3 o'clock. Here the most complete arrangements had been made to insure that all the wonderful and interesting antiquities of the place should be seen. This magnificent pile of buildings stands high on a hill commanding lovely views over the vale of Belvoir and the celebrated gardens were in the perfection of their beauty and deserved the admiration of the visitors. Tea was served in the castle and the party shortly afterwards left for a pleasant drive to Redmile station whence the return journey was made to Leicester.

On the night of Friday, July 28th, Mr. and Mrs. Stephen Hilton, the Mayor and Mayoress of Leicester, gave an evening fête in the Abbey Park of the town. 40,000 fairy lamps of every shade of colour were placed on the lawns and in the beds of the park and in addition thousands of Chinese lanterns swung from the branches of the trees. The sight was extremely pretty and the waters of the lake reflecting the shimmering points of light rendered the scene a veritable fairyland. The guests numbered over 2000 and Mr. and Mrs. Hilton were unable for some time to move from the large marquee in which they received the visitors. The stream of guests, however, slackened sufficiently for the Mayor and Mayoress to be able later to move about the grounds and at half past ten a marvellous display of fireworks was witnessed, the last set-piece wishing "Good-night" and "Success to the Members of the British Medical Association."

The excursion to Buxton on July 29th proved a great success, the number of the party proceeding to this favourite watering place being about 120. Buxton was reached by special train a little after 11 A.M. and the first item on the programme for the day was found to be a visit to the baths and afterwards to the Devonshire Hospital. The arrangements were excellent, the medical men of the town, under Dr. C. W. Buckley, taking charge of small groups of visitors and personally explaining the equipment of the bathing establishment. The programme for the remainder of the day was of a most varied description and it is difficult to do justice to the organising capacity of the reception committee which seemed to have foreseen and to have provided for all the possible wants and pleasures of the numerous visitors. A lunch was served at the Palace Hotel to a great number of the party, Mr. H. A. Hubbersty, J.P., presiding, and being helped by Dr. Buckley in entertaining the guests. The toast of "The Guests" was proposed by Mr. W. Armstrong and responded to by Dr. T. D. Griffiths and by Dr. J. Brassey Brierley. The Bishop of Salisbury was also present and took part in the proceedings by saying grace. The remainder of the visitors lunched at St. Ann's Hotel where the hospitality was as open-handed as at the Palace Hotel. After lunch the visitors had a great many entertainments to choose from. Conveyances were in attendance to take those who wished to play golf to the splendid links on the heights by the town. Those who wished to go to Castleton were taken to the Midland Railway and arrangements were made for a visit to Chatsworth and Haddon or to Matlock. Some desired to see the Goyt Valley and were promptly provided with carriages. Others chose shorter drives and visited the "Cat and Fiddle," enjoying the splendid upland scenery so characteristic of Buxton. Some elected to remain in Buxton and for these special tickets were procured for the Buxton Gardens where a first-class band was playing. Wherever the visitors went they found that the reception committee had provided for the refreshment of the inner man and tea was procurable at the different refreshment kiosks, at the Empire Hotel, on the terraces, in the gardens, and in the luxurious lounge adjoining. The Union Club dispensed hospitality to the visitors and Poole's Cavern was inspected by many. Some of the party desirous of revisiting the Devonshire Hospital spent a part of the afternoon under the guidance of the members of the medical staff in going over the different cases. The return journey to Leicester commenced at 7 o'clock and all were unanimous in praising the reception committee for what it had done.

On July 28th Professor William Stirling gave the "popular lecture" at Leicester on the subject of "Fatigue and Repose," and lantern slides of well-known pictures emphasising special points of the subject were projected on the screen and were much appreciated by the people of Leicester. For the purposes of this meeting Professor Stirling had printed some attractive antique paper covers with striking extracts from Cervantes, Shakespeare, Keats, Hood, Spenser, and others relating to sleep and rest, containing reproductions of nine pictures and prints—viz., a portrait of Andreas Vesalius; prints showing the superficial muscles of man from Vesalius's "Fabrica Humani Corporis" (Basel), 1543; portrait of the anatomist Nicolaus Stenonius; and prints of the following paintings: "Victory, O Lord!" by Sir John E. Millais, Bart.; "St. Catherine," by Sodoma; "Worn Out," by T. Faed; "Hard Times," by Hubert von Herkomer; "The Stonebreaker," by H. Wallis; and "The Anatomy Lesson," by Rembrandt. The lecturer stated that mental fatigue caused bodily fatigue and *vice versâ*, and emphasised that severe muscular work and great mental activity were incompatible—at least, for most persons the double tax was too heavy. Teachers in schools knew that the effects of excessive mental work could not be immediately compensated by prolonged sleep, the remedy consisting of diminished work and increased recreation. In addition to sleep naturally obtained, true repose for many a weary brain was to change to some unexciting but useful occupation. Professor Stirling also, when commenting on the continuous strain of standing, said that it was easier to walk and to keep moving than to stand.

A neat and interesting souvenir of the British Medical Association's meeting at Leicester was issued by Messrs. Burroughs, Wellcome and Co., entitled "Leicester Medical Lore and Lecture Memoranda, B.M.A. Meeting, 1905." It consisted of a pocket book with a green leather cover bearing the arms of Leicester and containing 35 pages relating the history of Leicester illustrated by pictures, especially from the medical point of view, a note relating to the British National Antarctic Expedition, 32 ruled pages for lecture memoranda, and a synopsis, formulary, and abridged price list of the products of the firm. The points especially dealt with in the historical account are the Roman occupation of Leicester; the ancient abbey of St. Mary de Pratis, or St. Mary of the Meadows, and the death therein of Cardinal Wolsey; the plagues in Leicester in 1342, 1361, 1564, 1593, 1603, 1610, and 1623, to which a note is added that Leicester escaped the dread disease that decimated London and other large towns in 1665 and has not since been visited by the plague; the hospitals in Leicester, the first of which is said to have been founded for lepers in 1169; Leicester folk medicine, dealing particularly with a curiously spelt list of "prices of oyles and other lickwids" by John Frisby between 1723 and 1774; and notes on Robert Burton, author of "The Anatomy of Melancholy," who was a Leicestershire man.

THE SECTIONS.

MEDICINE.

FRIDAY, JULY 28TH.

A discussion was opened by Dr. J. **DRESCHFELD** (Manchester) with an address on

The Diagnosis and Treatment of Cardiac Degeneration apart from Valvular Disease,

based upon the following headings: 1. Acute myocarditis, especially in connexion with typhoid fever, diphtheria, pneumonia, and influenza. 2. Chronic myocarditis. 3. Myocardial affections in connexion with chronic infectious diseases (syphilis, malaria, and tuberculosis). 4. Cardiac insufficiency due to chronic intoxication: (*a*) exogenous toxins (alcohol, tobacco, and lead); and (*b*) endogenous toxins (Bright's disease, diabetes, gout, Graves's disease, cancer, and cachexia). 5. Myomalacia due to arterio-sclerosis. 6. Heart muscle failure in chronic lung affections. 7. Heart strain due to excessive muscular exercise. 8. Fatty heart. 9. Senile heart.

Dr. W. P. **HERRINGHAM** (London) said that in speaking of cardiac degeneration it was impossible to give anatomical grounds for the condition while the case for physiology was still weaker. They were driven to clinical observation and no experiments could check observation. The largest class of sufferers included elderly people, those exhibiting arterio-sclerosis, hypertrophied heart, and morbus renum. Those who developed definite hypertrophy lived longer than those who did not. Under stimulation the peripheral resistance was increased by contraction of the smaller arteries, while the larger elastic ones yielded to internal pressure. Endarteritis was due to impurities in the blood, such as those present in syphilis, diabetes, and nephritis. In young people these might always be traced to kidney disease, while in elderly people they resulted from excessive feeding, the habits of youth and middle life in the matter of excessive eating and drinking being continued at a time when the muscles were working at half speed and half time. After acute fevers, especially typhoid, there was degeneration of the cardiac muscle as in diphtheria. Rheumatism caused dilatation of the heart due to myocarditis or degeneration of muscle which might result in acute cardiac failure. Acute myocarditis occurred in rheumatic fever and in syphilis, while in the latter there might also be failure from gumma or the succeeding cicatrix. Dr. Herringham quoted three cases in big muscular men with primary syphilis where there had been no rheumatism or definite cardiac lesion, and of these one died, the heart exhibiting no valvular or other definite change beyond hypertrophy and dilatation, the paresis apparently resulting from interstitial myocarditis. Alcohol and tobacco impaired the vigour of the heart muscle and the œdema associated with alcoholic subjects was familiar enough. In young adults, like soldiers, growth and development threw extra work on the heart which perhaps in some individuals did not grow adequately to meet the extra strain. Acute dilatation of the organ was frequently met with after over-exertion, such as climbing or cycling. So many anatomical and physiological conditions produced the same ultimate effect that exact diagnosis was practically impossible. Roughly speaking, hearts yielded from intrinsic muscular weakness or owing to external stress; sometimes both causes were at work. This classification, however, afforded a fair indication for treatment.

Dr. A. **FOXWELL** (Birmingham) speaking of chronic forms of myocarditis said that it was impossible to diagnose that due to syphilis from local manifestations either clinically or post mortem. It, however, seldom occurred alone, the endothelium being likewise affected and in association with valvular lesions, dilatation of the aorta, or arteritis of the pulmonary vessels, the smaller branches being less affected. Where the heart was large with a feeble impulse and low arterial tension or with hard peripheral vessels a diagnosis of syphilitic myocarditis might be hazarded. Closely allied to these changes was the pulmonary atheroma in chronic lung disease, such as fibroid change, bronchiectasis, and emphysema, in which the vascular change was symmetrically and generally distributed and not restricted to the diseased side. There was right heart hypertrophy and often a great degree of pulmonary arterio-sclerosis was associated with a limited amount of lung disease. The sclerosis resulted from the raised blood pressure necessary to carry on the circulation at sufficient rate through the diminished circulation area, especially while the patient was leading an active life; this was associated with right heart hypertrophy, though this did not take place as readily as on the left side. In connexion with cases of heart strain Dr. Foxwell suggested that this was not solely the result of effort, there being in many cases evidence of previously existing disease shown by incomplete recovery and he cited one case in a middle-aged man who recovered partially after alarming symptoms. For six years the heart gave trouble on slight provocation and showed signs of dilatation and hypertrophy. With advancing life the organ came nearer its limits of repair and diminished activity of brain and muscle with reduced food were necessary to maintain life within its capacity. This patient was still living and in moderate health but with a loss of weight of one and a half stones to his advantage. In another case severe mental strain resulted in a syncopal attack lasting an hour. Seven years before the heart had been reported on as weak and two other members of the family had large weakly acting hearts. This was apparently a "heart family," the muscle being of weaker character and less resistance than normal. Another case was that of a patient, aged 60 years, whose heart failed in hurrying to catch a train, this occurring, no doubt, at the end of a long process of degeneration. He never recovered sufficiently to work again, being reduced to a lower rate of living consistent with the diminished heart power. The diagnosis of fatty heart was very difficult and was made too often. The organ was not necessarily enlarged and panting, sighing respiration with weak pulse were significant. The alcoholic heart exhibited imperfect muscle striation suggestive of the change in "cloudy swelling." The treatment of heart failure involved a most fascinating study, requiring the nice balancing of various functions and parts of the organism against each other, especially the vessels, kidneys, lungs, skin, and muscles. Over-stimulation of the heart in these circumstances shortened life, while if action fell below a certain degree life failed from pulmonary œdema. Lessening external work for the heart by diminishing life strain and relaxing vessels, &c., conserved its energy to overcome internal difficulty and so regulated the balance within the scope of its powers.

Dr. J. HAY (Liverpool) restricted his observations to the condition of the venous pulse in the neck. In health tracings showed a wave with the auricular contraction and another due to the impact of the carotid pulse; with myocardial degeneration, whether associated with valvular disease or not, the auricular contraction wave was absent and there resulted the ventricular form of pulse wave. Either the auricle was paralysed or it contracted with the ventricle as in experimental stimulation of "Gaskell's bridge," the rhythm being controlled by the auricular canal. As the heart tone was regained there resulted a fuller radial pulse preceded by the auricular wave in the jugular vein. When the inception of the heart impulse occurred at the auricular canal instead of the auricle the beat was inefficient.

Dr. S. WEST (London) spoke of cardiac failure in pyrexia and acute fevers, such as accompanied rheumatic hyperpyrexia and sunstroke or diphtheria and influenza. He referred to the observation of Stokes that the first sound was sometimes muffled in fevers and not necessarily in cases with the highest temperature. It was a serious warning of trouble and in one of his own cases of typhoid fever was followed by relapse and death. In rheumatic cases the young house physician was generally anxious to get the patient up as soon as the fever declined, the effect on the heart being often serious. Some cases of acute fever and severe illness as the cardiac form of influenza required care for a year before recovery was complete as regarded the heart and this was not surprising when the slow recovery from overstrain in an athlete was considered. In chlorosis with fatty change in the myocardium strain soon showed itself and dilatation involving considerable displacement of the apex came and went with exertion and rest and this was also the case in valvular disease. Failure of the heart in pericarditis was not surprising seeing that the pericardium was continuous with the interstitial cardiac tissue, so that both were necessarily involved together. When the heart failed the tissues to suffer first would be those the veins of which were nearest and these were those of the heart itself; so that a vicious circle was early established, described by Jenner as congestion of the heart. In treatment the susceptibility of the degenerated heart to digitalis was to be remembered. Small doses were sometimes useful but the cumulative action might be very speedily illustrated, the beats falling from 150 to 40. The drug should be given cautiously and suspended at once when such warning was given.

Sir JAMES GRANT (Canada) cited two cases of aortic stenosis in which life had been extraordinarily prolonged and he insisted upon the importance of careful attention to all the tissues and functions of the body in the treatment of cardiac disease.

Dr. W. EWART (London) pointed out that regular mechanical effort assisted the heart while mental strain embarrassed it. Most cases were treated effectually without powerful drugs, as Sir James Grant had indicated. The heart wanted time to feed and to rest and this small doses of digitalis might supply; otherwise careful regulation of diet, rest, and the normal bodily functions afforded the best means of cure.

The PRESIDENT of the section (Dr. F. M. POPE, Leicester) pointed out that heart failure occurred in the summer, seldom in the winter. Arrhythmia was due to failure of a thin auricle.

Dr. J. MACKENZIE DAVIDSON (London) gave an interestin demonstration of

The Use of the X Rays in Medical and Surgical Work,

with the aid of numerous lantern slides, with the object o showing the uses and limitations of the method. One poin upon which he specially insisted was the importance o always taking the [illegible] In 189 a method of preci [illegible] l and th stereoscopic method on Dec. 3rd, 1899. Small particles o metal or glass had been located in the eyeball or orbit t the one-fiftieth part of an inch. Calculi of various kind and in divers positions were demonstrated by actua skiagrams of the patients. Other cases were aneurysm o the aorta, diverticulum of the œsophagus, probing of th frontal sinus from the nose, subdiaphragmatic abscess, sho in the orbit, half the portal vein injected, showing independence of the circulation in the two halves of the liver and fracture of the head of the femur in reduction of congenital dislocation.

Dr. BERTRAND DAWSON (London) read a paper on

The Diagnosis of Gastric Ulcer,

in which the two well-defined types of ulcer were alone considered. Epigastric pain related to food. Localised tenderness, vomiting, and hæmatemesis were shown to be characteristic of other non-malignant affections of the stomach beside ulcer. Such were dyspepsia of anæmic young women (anæmic dyspepsia), gastritis caused by oral and pharyngea sepsis (septic gastritis), and hæmorrhagic gastralgia. A large number of the milder cases classed as gastric ulcer were due to anæmic dyspepsia. This was shown by a comparative study of clinical and pathological statistics, by the effects of treatment, and from the fact that out of a series of 24 cases under 25 years of age operated on for marked symptoms of gastric ulcer, in five a careful search within the stomach failed to disclose the ulcer. Similar cases were quoted in which no focal lesions were found at the necropsies. Dr. Dawson regarded these cases in anæmic young women as liable to acute invasion by ulcer. He further showed how septic conditions of the teeth, mouth, and naso-pharynx produced a gastritis with the same symptom complex as gastric ulcer, and how when the cause was removed the gastric symptoms quickly recovered. The diagnosis between gastric ulcer and these other conditions resembling it was considered. Acuteness of onset, complete intermission between acute attacks, non-subsidence of symptoms after a few days in bed, and recurrence of symptoms, especially *hæmatemesis while in bed,* were points in favour of ulcer. Pain in ulcer was accentuated by food, except in some cases where the situation was at the pylorus, in which food

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[1] Brit. Med. Jour., Jan. 1st, 1898.

alleviated it. The length of time that pain occurred after food did not, however, throw light on the locality of the ulcer. This was shown by the examination of 102 cases operated on at the London Hospital. Deep localised tenderness was more suggestive of ulcer when it continued after the subsidence of other symptoms than during the attack. It was not caused by pressure on the ulcer. Tenderness of the skin over the upper abdomen occurred in anæmic and neurasthenic dyspepsias as well as ulcer, but when the diagnosis of ulcer was established the tenderness of the skin was a guide to its severity and progress though not to its locality. Increase in the free hydrochloric acid of the stomach was a characteristic of most cases of ulcer. In the diagnosis between chronic gastric ulcer and early carcinoma attention should be paid to the motor function of the stomach and to the presence or absence of free hydrochloric, lactic, and butyric acids and pepsin. A microscopical examination of the fasting contents was also of value. Free nuclei of leucocytes and other cells and sarcinæ were usual with the presence of hydrochloric acid and Oppler-Boas bacilli in large numbers with the presence of lactic acid. Clumps of pus cells with blood cells pointed to ulceration. By combined microscopical and chemical observations a correct early diagnosis was rendered possible.

SURGERY.

FRIDAY, JULY 28TH.

Mr. J. JACKSON CLARKE (London) read a paper entitled

A Note on Congenital Dislocation of the Hip-joint and its Modern Treatment.

He considered that congenital dislocation of the hip-joint was now a curable affection and this advance in surgery was due to Lorenz who evolved the manipulative and gymnastic method of treatment. When the patient was of suitable age the operation was without serious risk. The greater part of the after-treatment could be carried out at home under the care of the family medical practitioner. The patient invariably improved in general health and strength during treatment. The profession in this country had not yet appreciated the scientific basis and technical details of the treatment. Two years must elapse before the final results could be considered. From the experience of 17 cases which Mr. Jackson Clarke had treated by Lorenz's manipulative method in the last two and a half years he considered that the open operation was no longer justifiable and that cases of double dislocation were as well suited to the method as unilateral dislocations. The results were illustrated by photographs which showed complete restoration to the normal form and function of the previously shortened limbs and deformed spines. Experience in the method enabled the surgeon to avoid dangers.

Mr. JORDAN LLOYD (Birmingham) considered the Lorenz method a reasonable operation. Courage was necessary in its performance, because the force to be exerted was great. Lorenz had shown how far they could go with safety in these cases. He thought it a mistake to promise too much to the parents. The cases could be improved but even in the most successful cases the result was not perfect.

Mr. C. R. B. KEETLEY (London) thought that the prognosis depended chiefly on the age of the child. Before three years of age it was possible to promise a perfect result but even then the promise should not be absolute. He was inclined to think that many of these cases were not really congenital in origin but were traumatic. In certain cases it was possible by a stout silver wire passed through the neck and the anterior superior spine to keep the head in the acetabulum. The wire might be left in for four or five weeks.

Sir CHARLES B. BALL (Dublin) considered that the risks of the open operation were well worth running in order to obtain an exact knowledge of the conditions present.

Mr. JACKSON CLARKE, in reply, pointed out that Lorenz had renounced the open operation in favour of the manipulative method. Lorenz had been the first to point out the importance of the rôle of the muscles in maintaining the head of the femur in the acetabulum. Some of the defects after the operation were sometimes due to the existence of coxa vara. The after-treatment was of great importance. It might be said that in 90 per cent. of the cases under four years of age the prognosis was good.

Mr. KEETLEY read a paper on

Appendicostomy.

This operation, he said, consisted in bringing the appendix through the abdominal wall and opening it externally. The indications for the operations were muco-colitis, dysentery, obstinate chronic constipation, and syphilitic ulceration of the large intestine with hæmorrhage. The mode of performance of the operation might vary but it was important that the appendix should not be twisted. The presence of even many adhesions around the appendix was not a positive bar to the operation. He thought it important that the base of the appendix should be pulled close up to the parietal peritoneum. Unless the case was urgent the appendix should not be opened till the second or even the fourth day. The operation was painless and speedy and local anæsthesia of the abdominal wall was all that was needed. The first operation was performed by Robert F. Weir of New York. In all nine cases had been recorded and seven of these were successful and even the other two were none the worse for it; Mr. Keetley had performed the operation twice. The first patient was a girl, aged 15 years, who had had very severe constipation all her life. Her bowels rarely acted more frequently than once a week and on one occasion 24 days had elapsed without a motion. Now she had a daily motion by injecting some saline aperient through a catheter and she was much better in health and did not suffer from the severe headaches which she had before the operation. The second case was one of ileo-cæcal intussusception and Mr. Keetley employed the operation to anchor the cæcum.

Mr. PERCY FURNIVALL (London) had opened the cæcum in five cases for colitis, dysentery, and similar conditions. The colon was then washed out, beginning with a very mild solution of silver nitrate, say 1 in 400, about a pint being used. Three of the cases did well but in the other two no effect followed. He thought it an objection to appendicostomy that if the patient recovered the opening would not close.

Professor HOWARD A. KELLY (Baltimore) thought that in America at least there would be a great risk of the operation being overdone. It must be suitable for only a few cases. In his opinion many cases of colitis really affected only a part of the rectum and therefore might be treated by local applications.

Sir CHARLES BALL asked as to the amount of leakage and whether any dressing was required. He quite agreed with Mr. Keetley that it was desirable to anchor ileo-cæcal intussusceptions and he was in the habit of putting a stitch through the meso-appendix and fastening it to the posterior abdominal wall.

Mr. KEETLEY, in reply, said that there was no leakage at all in either of his cases and the opening itself was very small. He did not think that there was any need to close it and, indeed, it was convenient to have such an opening, as one never knew what might happen.

Mr. J. F. THOMSON WALKER (London) read a paper entitled

A Note on a Specimen of Bladder and Urethra removed Two Years after Prostatectomy.

The paper was illustrated by lantern slides. The patient from whom the specimen was taken had had suprapubic prostatectomy performed by the late Mr. Herbert W. Allingham at St. George's Hospital. 15 months before the patient died he had hæmaturia and death resulted from a malignant growth of the bladder. This growth, however, was quite separate from the prostatic cavity which still formed a well-marked space, lined by an irregular epithelium, and outside the epithelium was much new muscular tissue.

Mr. H. L. BARNARD (London) asked whether stricture ever followed prostatectomy. In one case he found when he examined the prostate that he had drawn out half an inch of the membranous urethra. By a misunderstanding of his instructions the bladder was not washed out per urethram for three weeks and when he examined the case he found the floor of the bladder closed and only a dimple marked the former urethral opening. He was able by forcibly pushing a catheter through to restore the patency of the canal. To avoid this danger he advised that the prostate should be removed in two pieces and that the bladder should always be washed out per urethram. The drainage tube should be removed from the bladder by the seventh day at latest. In one case he had operated on a small fibrous prostate and he had been only able to get it away in shreds, yet the patient did well. He thought very highly of the acid phosphate of sodium as an acidifier of the urine. It should be given as a beverage of the strength of a drachm to the pint. It was best not to operate until the urine was acid and then no phosphates would be deposited on the edges of the wound.

Mr. W. **SHEEN** (Cardiff) had removed a small fibrous prostate weighing only five and a half drachms. The patient recovered completely.

Mr. **JORDAN LLOYD** thought that strictures might occur after prostatectomy. In some cases a "diaphragm" might develop between the bladder and the prostatic cavity. In small fibrous prostates there might be a stricture between the bladder and the urethra.

Mr. **WALKER**, in reply, said that the specimen which he had obtained was the only one known in which two years had elapsed since the enucleation. He did not think it possible for the prostatic urethra to remain intact even if the prostate were removed in two pieces.

Mr. A. H. **TUBBY** (London) read a paper on

Spinal Osteomyelitis.

He referred to the rarity of the cases and the scanty literature. Three degrees of the affection were recognised: (1) a comparatively mild form, from which the patient recovered; in this form there were acute inflammation and thickening of the periosteum; (2) a more severe form, involving the periosteum and superficial layers of bone, which might or might not go on to suppuration; and (3) a violent form, in which suppuration occurred and where meningitis and myelitis were constant complications. The object of the paper was to call attention to the less acute varieties, and illustrative cases were given of the first and second degrees which had occurred in his practice. In both these cases, although there were rigidity and deformity of the spine, full recovery occurred within 12 months with complete restoration of function. The connexion of stomatitis with suppurative periostitis of the cervical spine was very marked and in both the cases described acute inflammation of the gums and alveolar margins had preceded the onset of the spinal symptoms. With regard to the violent form it was usually due to invasion of the spinal column by streptococci or staphylococci and the exciting causes were local septic disorders, such as boils, inflammation of the gums, septic nasal and naso-pharyngeal affections, mastoiditis, whitlows, or osteomyelitis elsewhere. It often followed pneumonia, scarlet fever, or measles. In six out of 41 cases there was a history of local injury. The disease was more common in children and adolescents but it was not confined to them. It occurred twice as frequently in males as in females. The lumbar region was most commonly attacked and then the cervical. The neural arches were more often affected than the bodies of the vertebræ. The local symptoms were tenderness, agonising pain on attempting to move, and there might be a localised œdema if the neural arches were affected. Nerve symptoms might be present and a case had been diagnosed as Landry's paralysis. The diagnosis of disease of the bodies was very obscure but if the neural arches were inflamed the diagnosis was easier. Suppuration occurred in 24 out of 62 cases. Important points in the diagnosis were the history of sudden onset, the early appearance of rigidity of the spine, the complication of acute nerve symptoms, the rapid development of intense general illness, and the complaint of agonising pain in the back. The prognosis in the periosteal cases was favourable but the more violent types were very fatal, the mortality varying between 50 and 75 per cent. In the milder varieties without suppuration rest in the recumbent position, followed by the use of a spinal support, was all that was necessary. In the suppurative cases pus must be found and let out at the earliest possible moment.

Mr. R. T. H. **BUCKNALL** (London) read a paper on

Two Cases of Operation involving the Thoracic Duct.

The first patient underwent an operation for tuberculous cervical glands of the left side for the third time. Within 24 hours of the operation he became very weak and a clear yellow fluid was observed to be flowing from the wound to the extent of from two to three pints a day. The patient steadily lost strength. The wound was explored and it was found that about two inches had been removed from the thoracic duct. The free end from which the chyle was flowing was tied. The patient soon improved and the wound healed. He died two and a half months later from miliary tuberculosis. The second patient was a woman whose breast had been removed for malignant disease two years previously. She had some enlarged glands in the posterior triangle. These were removed and it was found that the thoracic duct had been slowly occluded.

Mr. **BARNARD** referred to the researches of Mr. Cecil H. Leaf who had shown that there were many junctions between the venous and the lymphatic vessels. He (Mr. Barnard) had twice ligatured the thoracic duct without any harmful results.

Mr. **JAMES BERRY** (London) read a paper on

67 Cases of Cleft Palate treated by Operation, with special reference to After Results, and a Demonstration on Ten Cases.

He stated that the main object of the paper was to give an exact account of all the cases of cleft palate that he had treated both in hospital and in private practice in the hope that he might thereby induce other surgeons who employed different methods to do the same. All his cases had been treated on a uniform plan on the lines of the well-known operation practised by his old master, Sir Thomas Smith. He did not think that the advantages of the operations in very early infancy either by large flaps or by the forcible approximation of the maxillæ had at present been proved. He considered the third year of life to be the best period for the cleft palate operation in most cases and that the third month was the best period for the hare-lip operation. Of his patients 43 had been operated on over the age of four years and this was later than he liked. They were mostly patients in whom operation had been unsuccessfully performed by other surgeons or had been declined by the surgeon or by the parents. In no case under the age of 20 years had he ever declined to attempt an operation, however wide the cleft, and he exhibited photographs of some exceedingly wide clefts which he had completely closed. He laid great stress on the complete detachment by curved scissors of the soft palate from the posterior edge of the palate bones and also on placing the lateral incisions sufficiently far outwards and backwards. He pointed out the great importance of a moveable soft palate in the production of speech. He maintained that the view advanced by Mr. Arbuthnot Lane that the reason of the peculiar speech was that the outgoing air did not pass through the nose was totally opposed to the facts. Mr. Berry mentioned the chief consonants which were mispronounced by those with cleft palates and said that the changes were due to air escaping through the cleft and through the nose. With regard to the forcible approximation of the superior maxillæ he thought the operation unjustifiable. Of ten cases published and unpublished, which were all that, to his knowledge, had been performed in this country, four had died as the direct result of the operation. The cleft of the palate underwent a natural diminution, even without any operation, but especially if the hare-lip had been treated. The results of Mr. Berry's 67 cases were given in a paper distributed at the meeting. None of the patients had ever been seriously ill. In three cases only Mr. Berry did not succeed in closing the cleft but none of these had yet had a second operation. As to the speech, although he admitted that in no case could it be said absolutely to be perfect, yet in several cases it closely approximated to perfection, and in very many cases it was good. It was remarkable how much improvement occurred in patients operated on as late as 14 or even 18 years of age. Mr. Berry did not claim any originality in the method he employed, except in details. He thought it would be well if those who advocated extensive operations in the first year of life would give their results, especially as to the soft palate and the speech. A demonstration was given on ten of Mr. Berry's cases brought for the purpose; the patients' ages ranged from two to 16 years and the period since the operation from eight months to nine years.

Sir **CHARLES BALL** concurred in the importance of the detachment of the soft palate.

Mr. C. F. **CUTHBERT** (Gloucester) inquired as to the position of the patient preferred by Mr. Berry. He himself placed the patient so that the head hung over the end of the table.

Mr. W. M. **WILLIS** (Nottingham) mentioned that he had attempted Brophy's operation but complete necrosis of the bones resulted and the child died.

Mr. C. P. **CHILDE** (Southsea) employed Hagedorn's circular needles for the cleft-palate operation and not special needles.

Mr. **BERRY**, in reply, said that the patient was always in a sitting position with the shoulders raised and the head thrown back. The anæsthetist must be very skilful. He preferred rectangular needles and always used one silver stitch with a Smith's needle.

Mr. W. J. de C. Wheeler (Dublin) read a paper on

The Talma-Morrison Operation.

The patient was a man 47 years old. There was no history of alcohol. He was six feet high but weighed only eight stones. He had great ascites and on tapping two and a half gallons were drawn off. The liver was then found to be enlarged. 14 days later two gallons were removed. Then the abdomen was incised below the umbilicus but the fluid re-accumulated. Then the abdomen was opened above the umbilicus and the omentum was drawn out. The upper surface of the liver was scraped with a blunt Volkmann's spoon and then the diaphragmatic peritoneum was rubbed with a cloth and some peritoneum was shifted from the abdominal wall. The operation was performed nine months ago; the patient had been tapped once since and two pints were drawn off but since that he had been well and able to do his work. He had gained 2 stones 7 pounds in weight.

Mr. Sheen read a paper on

A Case of Ligature of the Innominate Artery.

The patient was a man, 46 years old, with a pulsating swelling above the right clavicle and the aneurysm involved the second and third parts of the subclavian artery. Mr. Sheen tied the innominate but the pulsation returned the following day. At a subsequent operation the subclavian artery was tied in the second part and the aneurysm consolidated. Nine months later the patient was still well.

Mr. J. D. Malcolm (London) read a paper on

Two Cases of Partial Sloughing of the Vermiform Appendix.

In these cases small gangrenous patches occurred in the appendix without any symptoms. Mr. Malcolm considered that they could not be due to inflammation and looked upon them as analogous to the "spontaneous sloughing" of the wall of the stomach.

Mr. W. Sampson Handley (London) gave a lantern demonstration on

Epigastric Invasion of the Abdomen in Surgery of the Breast.

He believed that the embolic transfer of cancer particles along the trunk lymphatics to the axillary glands and thence to the supra-clavicular glands and the blood was a mere side issue in the process of dissemination. The main agent in the spread of carcinoma was "permeation"—that is, the centrifugal growth of tendril-like lines of cancer cells along the fine vessels of the lymphatic plexuses. The process of visceral dissemination began as soon as permeation had traversed the fine lymphatic anastomoses of the body wall and had reached the lymphatic plexuses underlying the pleural or peritoneal endothelium. Cancer cells then escaped into the serous cavities and attacked the serous surface of the viscera. Immediately below the ensiform cartilage the subperitoneal fat was separated from the lymphatic plexus of the deep fascia—the plane of the parietal growing edge of a cancer of the breast—merely by a single layer of fibrous tissue, the linea alba. The epigastric region, therefore, proved the weak spot in the defences of the body cavity and cancer of the breast frequently reached the peritoneum by this route before it had succeeded in penetrating the thick thoracic wall. Hence in about 12 per cent. of all necropsies metastases were found in the abdomen, while there were none in the thorax. The capital defect of the present operation for cancer of the breast was that it ignored the danger of epigastric invasion. The risk must be met by excising the epigastric deep fascia down to a point two inches below the tip of the ensiform cartilage, a step involving no technical difficulty and not adding to the risk of the operation. The erroneous belief that cancer of the breast spreads along the skin had, especially in America, led to the removal of an unnecessarily large area of skin. It was usually sufficient to remove a circle of skin from four to five inches in diameter, centred on the primary growth. A linear incision, two inches long, running downwards over the ensiform cartilage from the circular incision afforded access to the epigastric region and another linear incision joining the outer part of the circular incision was required to give access to the axilla. The flaps should be undermined in all directions and a circular area of deep fascia from nine to ten inches in diameter removed, with the pectoralis major, except perhaps the clavicular portion. This operation had one immediate advantage—the skin edges could be approximated without any tension. The nutrition of the flaps remained excellent in spite of their extent and rapid healing with freedom from pain and pyrexial disturbance was thus insured.

STATE MEDICINE.

Friday, July 28th.

Bailie W. F. Anderson (Glasgow) opened a discussion on

Infant Milk Depôts.

He said that in view of the appalling death-rate of infants he had communicated with the British consuls of 60 of the leading cities of the world to discover how England and Scotland compared with other countries. He had been supplied with the total population and the general and the infantile death-rates. He found that in one or two cities where the general death-rate was high the infantile death-rate was distinctly lower than that of Great Britain. The only reason he could find for this was that milk depôts had been established. In Glasgow a central milk depôt was in full work and with very gratifying results. The principal details of the scheme were thoroughly pure milk, put into absolutely clean bottles and then sterilised. The cost was 2*d.* a day for the milk needed for the youngest infant, increasing to 2½*d.* and to 3*d.* with the increase of age. There were undoubted difficulties. Often milk was only obtained for infants when they were practically at death's door from intestinal disorders. Then when the child had improved with the pure milk a return to the old method of feeding would be made with disastrous effects. There were no means to get accurate statistics except in the case of infants who were taken to the central depôt. These could be weighed and watched. Lastly, there could be no doubt that there was some difficulty with dairymen and the annual cost was not at present met by the payments made for the milk.

Dr. T. D. Lister (London) considered that future health might be made or marred during the first year of life. The numerous deaths from starvation and from acute and chronic intestinal disease were to a great extent preventable. But many infants were damaged for life by improper milk. He considered that the provision of infant milk depôts gave the most satisfactory solution for exterminating bad or starvation foods. The occurrence of scurvy from sterilised milk was rare and in reality constituted nothing more than a bogey. Out of 21,000 infantile deaths some 50 per cent. were due to improper food but only seven were ascribed to scurvy. If a case of scurvy occurred in connexion with a milk depôt it showed that there had been a lack of proper supervision of the infants supplied. Each case ought to be under a medical certificate. It was impossible to wait for a pure milk-supply but the municipal milk depôt would be a strong factor in bringing about such a pure supply.

A contribution to the discussion by the Hon. Nathan Straus (New York) was read by Dr. C. Killick Millard. Mr. Straus showed that in that city one out of every three died before five years of age. Because of this appalling mortality he had started a private milk depôt. His plan was to provide pasteurised milk to the poor at a uniform charge of 2½*d.* a day. The indirect results of the effort had been quite as important as the direct. The milk-supply in the neighbourhood had greatly improved. He pointed out that there had been a very appreciable diminution in infant mortality and gave statistics from a hospital for waif children in which the death-rate was decreased from 42 before the introduction of the milk to 16. He was convinced that the effort should be rather municipal than private because of the great demand created.

Dr. Philip Boobbyer (Nottingham), the President of the section, believed that there was much in favour of municipal milk depôts and that the movement would be a permanent one. One principal discouragement was that it did not appear that they could be made to pay. Scurvy from sterilised milk, he was sure, was nothing more than a mere bogey. He instanced the effort made in his district by which the sewage farm was made to supply the required milk and provided an excellent object lesson to milk producers.

Dr. H. Cooper Pattin (Norwich) stated that the causes of infantile mortality were often pre-natal and that the dieting of parents was an important prophylaxis.

Dr. T. Whiteside Hime (Bradford) said that a milk depôt was merely another factor in relieving a mother of her responsibility to her offspring. The quality of the milk supplied, in his experience, was not good and was not the material for young infants. Ordinary cow's milk was nothing but poison for them; they needed a lac-albumin.

Dr. T. F. S. Caverhill (Edinburgh) contended that milk was the proper food for infants and that the public needed instruction in the necessity for pure, clean milk. There were only a few water-borne diseases and yet great attention was paid to the purity of water, while there were at least ten diseases propagated by milk and still the milk trade was merely prevented from being fraudulent. It was a sad fact that near Edinburgh in the rural districts there was the highest mortality among infants.

Dr. D. S. DAVIES (Bristol) urged that there should be trained health visitors in all districts supplied by the milk depôts.

Afterwards a joint discussion with the Section of Laryngology, Otology, and Rhinology on

The Infectivity and Notification of Diphtheria, with special reference to Latent Forms of the Disease,

was held.

INDUSTRIAL HYGIENE.

FRIDAY, JULY 28TH.

Mr. W. F. DEARDEN (certifying factory surgeon for North Manchester) opened the first discussion by reading a paper on

Accident and Poisoning Reports.

After some introductory remarks, in which he mentioned that the status of the certifying factory surgeon was not what it ought to be, he reviewed the various Factory Acts in their relation to the work of the certifying factory surgeons, and commented on the unsatisfactory nature of the time limit of disablement to qualify for notification. He then gave an outline of the duties of the certifying surgeons and stated that the surgeon had four factors on which to base his judgment of the actual causation of an accident—namely, the evidence of the employer or his agents; the evidence of the injured person; the understanding he himself had acquired of the machine, apparatus, and process; and his knowledge of the necessary particulars respecting the injury. The duty of devising methods of protecting dangerous machines devolved upon the inspector and the surgeon's report enabled him to decide when a visit from him would be necessary for this purpose. As these appointments were mostly held by medical men in general practice who were well known to both employer and employed there was seldom any difficulty in obtaining the information required. The systems of accident certification in France and Holland were then reviewed. In France every accident occurring to a workman whilst engaged in his occupation must be reported to the mayor of the municipality within 48 hours. The mayor notified the inspector of factories and also the magistrate of the ward who made an inquiry and transmitted the result to the president of the civil court of his division. This official had power to make an order in permanent disablement and fatal cases fixing the amount of compensation. In Holland the administration of the law concerning industrial accidents was under the control of a department of State insurance. Any medical practitioner could, on application, be appointed a medical officer of this department. Compensation was settled by the directorate of the department acting under the advice of a chief medical referee. Compensation was granted to the extent of 70 per cent. of the average weekly earnings. Mr. Dearden considered that these systems formed a good object-lesson for our legislators and suggested that the factory surgeon's report would prove a useful aid in determining the length and degree of disablement. He was of opinion that the present system of investigating accidents suffered from the want of a general supervision by a principal surgeon who should have a thorough practical understanding of the work. The reporting upon cases of industrial poisoning by the certifying surgeon was quite a modern requirement though it had already borne excellent fruit. A large number of occupations came under the regulations of the Factory Act of 1895 in this respect. Persons who had to handle foreign hides and skins, wool-sorters, and workers in foreign hair were liable to be attacked by anthrax. The poisonous effects of lead were most prominent in connexion with the manufacture of white lead, paints, and colours, electrical accumulators, metal smelting, printing, tinning and enamelling, file-cutting, and glass polishing. Galvanising works and the manufacture of emerald green were mainly responsible for arsenical poisoning; lucifer-match making for phosphorus poisoning; and the trades of hatters, furriers, makers of thermometers and barometers, electro-gilders, and manufacturing chemists for mercurial poisoning. The number of cases of lead poisoning in the year 1899, according to the chief medical inspector of factories, was 1258. This number had been reduced to 597 in 1904 and a corresponding reduction occurred in the case of other industrial poisonings. The remarkable reduction in cases of lead poisoning had mainly taken place in the pottery industries and the manufacture of white lead owing to the careful supervision exercised over those trades by the special rules brought into force.

Dr. THOMAS WATTS (Hyde) expressed himself as very pleased that the Government had dropped the Accident (Mines and Factories) Bill. He was of opinion that the passing of that measure in its original form, which would have involved doing away with direct notification to the certifying surgeon, would have been a retrograde step in factory legislation and would practically mean that very few reportable accidents would be notified at all.

Mr. C. F. BRYAN (Leicester) commented on the great benefit accruing from the report of the certifying surgeon under the Workmen's Compensation Act. He considered the time limit objectionable because serious symptoms, such as septicæmia, &c., might supervene later in persons who had been able to work for five hours on the three days following an accident. He would like to see cases of accidents not due to machinery but, e.g., to faulty stairs reported to the surgeon in the first instance.

Mr. SEYMOUR KNYVETT (H.M. Inspector of Factories, Birmingham) agreed with previous speakers as to the importance of the certifying surgeons' reports and considered that owing to their intimate local relations with employers and workpeople they might have a greater opportunity for unfettered inquiry than in the case of the inspectors. He also gave a tribute to the excellence of the work done by lady inspectors. He could not agree with the suggestion that the surgeon's investigations should form an item of expert evidence in cases taken to the law courts for compensation, as the surgeon's reports at present possessed a confidential character, absolutely essential to their utility, which would be lost in their preparation for public evidence. He earnestly advocated an extension of the time limit and hoped that the section would do all in its power to extend the reporting of illnesses, especially of diseases acquired by workers in brass.

Dr. H. W. LANGLEY BROWNE (West Bromwich), the President of the section, considered that records should be kept of the duration of disablement of an injured person. These would be valuable for future reference. In France, Germany, and Austria all accidents were graded on a regular scale, No. 1 representing the slightest accident causing disablement from work and No. 100 representing fatal accidents or those causing permanent disablement. Some such system as this might avoid conflicting medical evidence in courts of law. He considered that the post of certifying surgeon should be combined with that of medical referee under the Workmen's Compensation Act and often with that of medical officer of health. The officer should be well paid and put in the same position as other inspectors both as to salary and pension.

Mr. DEARDEN then briefly replied.

Dr. D. J. A. CHOWRY-MUTHU (Wells) introduced the next subject for discussion,

Poverty in relation to Disease and Degeneration.

He expressed the opinion that all the social evils of the present day had been the outcome of trying to enjoy the sweets of civilisation without attempting to take up the responsibility which that civilisation brought with it. When men like Mr. Charles Booth declared that 30 per cent. of the entire population of London were unable to obtain a livelihood; when Mr. J. S. Rowntree stated that from 25 to 30 per cent. of the town populations of the United Kingdom were living in poverty; when they were confronted with the fact that about 400,000 people in London alone were living a one-room life, where decency was not possible and morality was a farce, then England was face to face with a terrible problem requiring all her strength and wisdom to solve. It was one of the ironies of the present-day civilisation that while this country was constantly extending its borders in circumference, in the very centre of the empire its sons and daughters found no room to live in and went about the streets in want of the barest sustenance that was not denied to the so-called savage or the Hottentot. Poverty robbed the physical efficiency, dulled the intellect, filled the mind with dread and despair; constant underfeeding led to the slow starvation of all the organs of the body, which could not perform their work efficiently. The curse of poverty followed a man from childhood to the end of his life. In infancy a large majority of the children could not get the natural food of their mothers because so many of these mothers were themselves underfed or obliged to be at work all day and therefore unable to suckle their children. The consequence was that the growing generation was to a very large extent fed on artificial food which aggravated the precariousness of their lives and increased infant mortality to an alarming extent. Dr. E. W. Hope of Liverpool had stated that the deaths in that city among children under three months old either wholly or partially fed on artificial foods were 15 times as great as they were among an equal number of infants fed on breast milk. Three-fourths of the 150.000 infants who died annually in this country during the first year of life had been fed artificially. The slaughter of the innocents was not the only result of poverty and overcrowding. The condition of the children who survived was worse than that of those who died in infancy. A very large proportion of children attending schools were underfed. How could the child who went to school constantly hungry give heed to lessons or do justice to education? The lack of food impoverished the body, interfered with the calcification of the teeth and the formation of sound bone, and caused stunted body and rickety constitution. The speaker from his experience in the East end of London could corroborate the views of Dr. William Hall of Leeds as to the superior development of Jewish children, which was due to their being better fed and cared for than the children of the Christian poor. He considered that consumption was not so much a microbe or filth disease as a disease of poverty. With regard to the remedies for the state of affairs described, he considered that the system of workhouse and Poor-law relief had not been a success, because it was worked on the principle that no man should receive help till he was destitute and broken down. They allowed their people to become paupers, vagrants, lunatics, drunkards, and criminals, and then built workhouses, prisons, asylums, and almshouses for them, which was like letting a patient reach the last stage of consumption and then erecting a sanatorium to save his life. Dr. Chowry-Muthu strongly recommended the adoption in this country of some such system as the Elberfeld system as worked in Germany. This was an organised attempt on the part of well-to-do city men to give their services freely to look after the poor and to relieve their several necessities without pauperising them. Every effort was made to find work for the unemployed. All help to the needy, the sick, the aged, and the infirm was controlled by one central agency without fuss or friction. So elastic was its work that even the provision of coals, blankets, garments, soup kitchens, &c., was administered by this system, and so economically was it managed that it had saved hundreds of pounds to the ratepayers ever since it had been instituted. The system of compulsory insurance of working men against accident, sickness, convalescence, and old age as adopted in Germany was also well worth the study of England. In conclusion, he suggested the adoption of milk depôts, women inspectors to instruct the mothers in feeding and hygiene, day nurseries where children could be looked after while the mother was at work, open-air schools in the country, and free meals for the children of the poor and destitute. They wanted a systematic organisation all over the country undertaken by the nation on behalf of the children. The money spent on the rising generation was a good investment and would yield a hundredfold in years to come.

Dr. C. E. **REINHARDT** (London) considered the question more a political than a medical one and traced the poverty of England to four conditions: (1) the state of land tenure, in which the man who did least work reaped most benefit; (2) over-population, the most fertile being those who lived in the worst surroundings; (3) disease, especially consumption; and (4) alcohol. As remedies he advocated the garden city scheme, in which the land belonged to the people; free education and support of children; reduction of alcoholic consumption; and hygienic education.

Dr. J. **BROWN** (Bacup) considered alcohol the chief cause of poverty and disease. He thought milk depôts were useful but that it was more important to nourish properly the mothers so that they could provide their own milk.

Dr. J. **DARLEY WYNNE** (Clonmel) remarked that in Ireland the death-rate from consumption, instead of decreasing to a marked extent as it had done in England and Scotland during the last 50 years, had actually increased. Though the people in Ireland were very poor yet there was not so much abject poverty as in many large English towns and he thought they must not lose sight of the fact that dirt and bad sanitation were equally important factors with poverty in the causation of disease.

Mr. **BRYAN** referred to the fact that Leicester was about to start a milk depôt. Although a member of the sanitary committee he was not much in favour of the scheme. He thought milk ought to be given to the people free and urged the advisability of more medical men giving free lectures to the people on hygiene.

The **PRESIDENT** of the section considered that one advantage of sending children to school was that they were kept there in better surroundings than at home for a good part of the day. He was in favour of milk depôts. He thought they were going the wrong way about the treatment of consumption and should spend money on the improvement of the dwellings of the poor before they erected sanatoriums for them.

Mr. **KENNETH W. GOADBY** (London) read a paper entitled

A Preliminary Note on the Blood in Lead Poisoning.

He said it was notorious that workers in lead factories, and especially in those departments in which the workers were exposed to lead dust, suffered frequently from anæmia. The facies became very pale, often to a much greater degree than the actual blood count might indicate. Associated with the anæmia was a progressive loss of orbital and buccinator fat which, with other well-known appearances, made up the saturnine cachexia. Some little time ago Dr. T. M. Legge called his attention to a paper by Dr. Hamel in which were described the results of an examination of the condition of the red blood corpuscles in lead anæmia. In the paper referred to Dr. Hamel confirmed the findings of somewhat minute basophile granules in the red corpuscles of lead workers as had been noted by Lazarus, Grawitz, and by Plehn in malaria. These basophile granules were frequently found in various species of anæmias and had been the origin of a considerable amount of discussion as to their exact nature. Schumann had described their presence in bothriocephalous anæmia. From the staining reactions, in that they did not show a selective action with methylene green, Bloch considered that they were not nucleinic acid and that as they took a blue colour with Nocht's stain which coloured chromatin red they were not of nuclear nature. In staining with Leishman's stain the granules were a faint bluish green and were easily seen, the colour being entirely different from that of the nuclei of normoblasts. Grawitz concluded that the granules in question were a species of granular degeneration of the red cells and that they made their appearance when a good deal of blood destruction was in progress and he called especial attention to their appearance in plumbism as did Behrend, White, and Pepper. Hamel in the paper referred to above considered that the presence of these basophile granules was to be regarded as diagnostic of lead anæmia and gave the results of a number of individuals in which he found these bodies and considered that they were the first sign of lead intoxication. With regard to the general blood condition Hayem said that there was no increase of the hæmoglobin index. Malassez and Zimm both agreed that there was very little if any increase in the number of leucocytes. Oliver said that the hæmoglobin often fell below 50 per cent. and Osler was inclined to regard the anæmia as rarely more than a 50 per cent. reduction in the red corpuscles. All observers agreed that there was no leucocytosis. At the suggestion of Dr. Legge Mr. Goadby commenced to investigate the condition of the blood in lead poisoning some little time ago but owing to the pressure of other research he had been unable to devote as much time to the subject as it deserved. He had examined a number of films from cases of anæmia in three lead works, two of the factories being devoted to white lead manufacture, and the other including desilverising, smelting, reducing, and the manufacture of litharge. He could confirm the finding of basophile granules in a large percentage of the cases which showed a definite anæmia and in a few in which the anæmia was not at all marked, while those persons who were examined on their starting work for the first time in lead processes showed no Plehn's granules. The films were stained with Leishman's stain and with hæmotoxylin and eosin. Of 30 cases of distinct anæmia the granules were found in all but were apparently somewhat more numerous in the more severe cases. In the case of men who had been engaged in lead processes

TABLE OF EXAMINATION OF THE BLOOD IN TEN CASES OF LEAD ANÆMIA.

Case.	Red blood corpuscles.	White blood corpuscles.	Hæmoglobin	C Index.	A	B	C	D	E	F	G	H	I	J	K	Work.	Notes.
1	3,460,000	7,000	60%	0·7	20	8	6	63	3	0	+	–	+	–	+	Paint mills. Factory 3.	4 years.
2	1,707,000	9,000	45%	1 4	38	7	8	46	1	0	+	+	+	+	+	Paint mills. White lead stoves. Factory 3.	5 ,,
3	2,620,000	20,000	55%	1·0	32	4	4	58	2	0	+	–	+	–	+	Paint mill. Factory 3.	6 ,,
4	1,334,000	10,000	60%	3 0	32	4	8	56	0	0	+	–	+	–	+	Dry whitelead packing. Factory 3	3 ,,
5	3,210,000	8,000	54%	0 9	41	1	4	52	2	0	+	+	+	–	+	Whitelead grinding. Factory 3.	3 ,,
6	1,347,000	10,000	60%	3·0	32	3	3	59	2	1	+	+	+	–	+	White beds (stacks). Factory 3.	7 ,,
7	3,760,000	9,000	65%	0 9	—	—	—	—	—	—	—	—	—	—	+	Press and stoves. Factory 1.	4 years. Jaundice twice.
8	2,200,000	10,000	65%	0 7	—	—	—	—	—	—	—	—	—	—	+	Desilverising (stills). Factory 2.	Double wrist-drop. 20 years' work.
9	3,860,000	8,000	50%	0 6	—	—	—	—	—	—	—	—	—	—	+	White beds (stacks). Factory 1.	Worked in Italy. 4 years in present employment.
10	3,420,000	9,000	60%	1 0	16	1	4	76	3	0	–	—	—	—	+	White beds (stacks). Factory 1.	Worked in Italy. ? length of time.

A, lymphocytes; B, transitional; C, large mononuclear; D, polymorphonuclear; E, eosinophile; F, basophile; G, microcytes- H, megalocytes; I, poikilocytes; J, nucleated cells; and K, basophile granules in erythrocytes (Plehn's granules). Corpuscles, Thoma Leitz method. Hæmoglobin, Haldane's method. Films stained, Leishman's method..

for a considerable time the number of basophile granules was not so marked. The red blood cells in most of the cases he had examined showed a good deal of irregularity both in size and shape as well as in the reaction to the stain used. Irregular staining was common as was vacuolation. The erythrocytes of the blood in lead poisoning appeared to be damaged more easily in manipulation than those in other kinds of blood he had been working with and this might perhaps account for the somewhat irregular shapes which were so common. At the same time there were frequently present well-defined microcytes. Nucleated red corpuscles of any variety were, as far as he had seen, extremely rare, only a small number having been seen. The blood platelets appeared to be normal. He did not feel at present at all satisfied that the presence of the basophile granules was of such sufficient importance as to regard them as diagnostic of lead anæmia. They undoubtedly occurred in other conditions widely differing, while in two Italians he found these granules before they had worked at all in a lead process. They had suffered from "fever" in Italy. Their significance was probably confined to the marking of the establishment of some destruction of the blood and their appearance corresponded to the commencement of anæmia and did not antedate the affection. In the ten cases furnishing the blood counts given in the table a considerable reduction in the number of red cells was seen. In three instances this was very marked and was much below that given by Osler or Oliver. The men were all very pale but were doing their work without any complaint of feeling ill. Two of them showed no blue line. The hæmoglobin, except in two cases, corresponded to the corpuscular count. Little or no difference was observed in the staining properties of the leucocytes. The absolute number did not appear to be increased in any marked degree. In the differential counts there did not appear to be much change from the normal. If anything the lymphocytes were a little increased and the polymorphonuclear cells decreased.

There was no discussion and the proceedings terminated with a vote of thanks to the President of the section.

LARYNGOLOGY, OTOLOGY, AND RHINOLOGY.

WEDNESDAY, JULY 26TH.

This section met under the Presidency of Dr. F. W. BENNETT (Leicester) who delivered a brief address welcoming those present. He referred to the progress of laryngology and otology in Leicester and spoke of the importance of the subjects from the educational standpoint.

Dr. W. MILLIGAN (Manchester) and Mr. E. B. WAGGETT (London) opened a discussion on

The Lines of Treatment in preventing Acute Middle-ear Suppuration from becoming Chronic.

Dr. Milligan in his opening paper said that treatment should aim at cutting short extension of an inflammatory process and, if possible, before exudation had occurred. He advocated an early and free incision of the membrana tympani as of the most importance. One unnecessary paracentesis was far better than the risk of extension of the disease. Spontaneous perforation of the drum came too late and the resulting drainage was inefficient. He spoke of the possibility of spreading septic infection by the injudicious use of Politzer's air douche. Nasal and post nasal disease induced chronicity and should be treated. Dr. Milligan treated it surgically after the temperature had fallen and remained normal for five days; in the meantime he used antiseptic douches and sprays. To insure free drainage of the ear in acute cases he was in favour of incision of the mastoid. In the exanthematous cases if free incision of the drum failed in seven days to arrest the disease then he opened and cleared out the mastoid cells; in the non-exanthematous cases if after three weeks free incision of the drum had been inefficient then he performed antrectomy. In conclusion, he deplored the lack of teaching otology which he held to be in some measure responsible in the past for acute middle-ear suppuration becoming chronic.

Mr. WAGGETT'S line of argument was that the natural termination of an acute otitis was resolution and where chronic suppuration supervened that was due to certain conditions of an accidental nature. The chronic suppuration was in a sense a fresh disease and might be quite independent of the infective agent causing the initial acute otitis. In treating cases of acute otitis three main considerations must be kept in mind. 1. The assistance of the inflammation regarded as a wholesome reaction against an abnormal irritant. 2. The direct prevention of those accidents which underlie chronic otorrhœa. 3. The avoidance of any interference which might possibly engender or precipitate one of those accidents. Mr. Waggett applied these principles of treatment to serous, muco-purulent, and purulent cases respectively. 1. Where the exudate in the tympanum was merely serous and the reaction a mild one the case might as a rule be brought speedily to an end by medical treatment, rest and warmth in bed being the most essential. Paracentesis was only called for if pain were severe and it was to be regarded as a palliative and not as a hastener of the cure. 2. With muco-purulent catarrh, seen typically in the adenoid case, the best treatment was the immediate removal of the adenoids or other source of infection in the nose or post-nasal space. That measure not merely cut short the acute otitis but prevented chronicity, or, more strictly speaking, the frequent recurrence of the otorrhœa. Hot instillations of glycerine and carbolic acid, six grains to the ounce, would give relief of pain pending the operation, which should be done within 24 hours of the diagnosis. Where there was true pus in the tympanum neither medical treatment nor mere removal of the remote causes would suffice to prevent chronic otorrhœa following. It was the rarest thing to find an acute case becoming chronic where more careful treatment was adopted; on the other hand, out-patient rooms were filled with cases of chronic otorrhœa which had commenced in an acute attack. It amounted to this, that exclusive of tuberculous cases there was a vast number of chronic cases which would never have existed had they been treated thoughtfully during the acute onset. Those cases were chronic either because reinfection from without was constantly occurring or because the organ could not get quit of a source of infection within itself. To the former class belonged those cases which speedily yielded to mere toilet of the meatus or to the removal of purulent foci in the upper air passages. In the second class the trouble was essentially mechanical in origin, such as the difficulty of aseptic fluid draining from the recesses of the attic and mastoid, the impossibility of an inspissated sediment doing so, the impregnable position occupied by micro-organisms which had entered the Haversian canals. In the treatment of acute suppuration it was necessary, in the first place, to avoid injecting pus into the mastoid by using Politzer's bag. An illustrative case was given in which septic material was actually driven through a deficiency in the mastoid into the tissues of the neck. In the second place, free paracentesis must be performed without an hour's delay, if at the moment of inspection the pus might be upon the point of penetrating into the mastoid or the ulceration of the muco-periosteum be just reaching the bone and laying bare the Haversian canals. Even after paracentesis Politzer's inflation was useless as a method of cleansing and Young and Milligan's experiments had shown how it might carry a spray of pus to the mastoid antrum. All pus, Mr. Waggett continued, could not be completely removed from the ulcerated tympanum. It must therefore be kept as much diluted as possible with continuous or very frequent irrigation of the meatus. In the vast majority of cases that treatment, coupled with warmth in bed, suitable diet, the exhibition of salicylate of quinine and purgatives, and the instillation of glycerine and carbolic drops, would prove quite successful. Politzerisation must not be employed upon the healed ear until all redness had departed for a fortnight. Where pain, tenderness, and fever persisted in spite of such treatment the mastoid was involved. With medical treatment, cold applications or leeches, many of the cases got perfectly well. But even in the absence of all the classical signs of mastoiditis, including the dropping of the postero-superior wall of the bony meatus, a mastoid operation must be performed if a copious discharge persists. Such a discharge would be coming from a large ulcerated area of the muco-periosteum of the mastoid antrum and would insure a chronic otorrhœa if not dealt with by operation.

Mr. T. G. OUSTON (Newcastle-upon-Tyne) read a paper on

The Lines of Treatment in preventing Acute Middle-ear Suppuration from becoming Chronic.

The discussion was then thrown open.

Dr. A. A. GRAY (Glasgow) was in favour of delaying paracentesis unless it was certain that pus was present. He would postpone performing an operation, as suggested by Dr. Milligan, upon the mastoid.

Mr. T. MARK HOVELL (London) did not support politzerisation in acute cases. A bulging membrane he considered ought to be incised freely. An operation for the removal of adenoids he would postpone until the illness was over. The suggestions made by Dr. Milligan for improving the drainage by a mastoid operation were heroic measures. Leeches were better than hot fomentations when the pain was over the mastoid process. Medical treatment was not sufficient.

GYNÆCOLOGY AND OBSTETRICS.

FRIDAY, JULY 28TH.

The proceedings of this section were opened by Dr. HERBERT R. SPENCER (London), the President of the section, calling upon Dr. R. BOXALL (London) to begin the discussion

On the Treatment of Albuminuria and Eclampsia

by reading his paper. Dr. Boxall said that it was necessary to point out the intimate association between the presence of albumin in the urine of pregnant women and the occurrence of eclampsia. The cause of the eclampsia was in part obscure and there were many theories—maternal and fœtal, chemical, nervous and mechanical causes—which had all been given in turn from time to time. If renal disease occurred during pregnancy it was liable to be acute and severe. If renal disease existed previously to pregnancy it was always likely to be much aggravated. First pregnancies were very liable to be attended by renal disorder and perhaps the increased intra-abdominal pressure was a factor in causing it. Cases in which the uterus was much enlarged seemed to support this idea as renal disorders were prevalent in these cases. The albumin in the urine was usually paraglobulin. He reviewed the pathological conditions and the parenchymatous changes in the kidneys, liver, and other organs. The death returns showed that renal disease and eclampsia occurring in association with pregnancy and childbirth were important factors in maintaining the death-rate from accidents in childbirth. He showed by a table and chart the relative deaths from puerperal convulsions, that the rate in England was maintained at a constant level, that latterly the rate in Ireland and Scotland had risen to above that of England and Wales, and that the rate of London was always lowest and remained so and at a constant level. The treatment of eclampsia was considered from two points of view—prophylactic and remedial. The treatment of albuminuria during pregnancy, which was the expression of the pre-eclamptic condition, constituted the prophylaxis of eclampsia. It resolved itself into the prescription of a milk diet and the maintenance of free purgation, free urination, and free perspiration. The remedial measures were: (1) increasing the action of the eliminating organs—bowels and skin—by reinstating the action of the kidneys, assisted in some instances by blood-letting and saline injections; (2) by sedatives—chloroform, chloral, and morphine; and (3) if these means failed, by diminishing the intra-abdominal and intra-uterine tension, rupturing the membranes and emptying the uterus. The operative measures most suitable under varying conditions were discussed; the importance of effecting delivery, when labour had once begun, expeditiously but with as little disturbance of the patient as was possible was strongly insisted on.

Mr. E. HASTINGS TWEEDY (Master of the Rotunda Hospital, Dublin) complimented Dr. Boxall on his scholarly paper. He thought that the eclamptic fit was due to a poison generated in the mother or the fœtus and was probably deposited in the solid tissues. Œdema, so called, of the lungs was a common complication of eclampsia which had not been mentioned and was probably the result of medicine placed in the mouth of an unconscious patient. There might be œdema of the lung in certain cases, however, but more often than not it was caused by the medicine placed in the mouth of the unconscious patient. He did not believe in rapid delivery in unconscious cases. Morphine was given at regular intervals as a rule in most cases. The stomach was washed out and castor oil was passed down into the stomach by the tube, followed by saline injections. A similar tube was passed into the rectum and the bowel was repeatedly washed out. Subcutaneous injection of saline solution was often used and it appeared to be better than the intravenous injection. The first and second stages of labour were not interfered with, nor was labour induced but was left to come on by itself naturally, which it always did.

Professor J. W. BYERS (Belfast) thought that scientifically very little was known about the pathology of eclampsia. There might be several causes or processes at work. Primiparæ were the most frequently attacked and this fact should be carefully considered. At the Geneva Congress in 1896 he put the case strongly and pointed out that in certain localities eclampsia was more prevalent and also that in certain seasons of the year it was more prevalent. He thought that the fœtus was one factor in the causation of this disease. When the fœtus died early in the labour the cases appeared more mild. Twin cases were more liable to eclampsia than others of a single birth. He thought the morphine treatment was one which did a great deal of good; it unfortunately often killed the fœtus, however, but that might, from what had been said, be an indirect advantage in disguise. He thought that the prognosis was difficult and uncertain. The metabolism of the liver appeared to be the cause rather than disturbance of the functions of the kidney as was popularly supposed, the kidney being the victim of the shortcomings of the defective hepatic action. The morphine treatment was found to be better than the chloroform and chloral treatment, to judge from the Rotunda practice in Dublin. He thought that delivery might be profitably expedited in some cases.

Dr. MARY SCHARLIEB (London) said that in India she found that cases often showed lesions in the liver; often in these cases there was no albuminuria. They left cases as a rule to a natural onset of labour and did not interfere; and, for the most part, this treatment did not have anything but satisfactory results.

Dr. JOHN CAMPBELL (Belfast) thought that pregnancy had a tendency to bring out any weakness in the kidneys. Some cases showed a congenital history in which they or their relatives were liable to renal disturbances apart from pregnancy. He used morphine in his practice and started labour by rupture of the membranes and then left the labour subsequently to nature.

Dr. T. WILSON (Birmingham) said that about eclampsia very little was really known. He thought it might be due to one of many poisons. He did not use the chloroform treatment as freely as formerly advocated and only used it very reservedly. He did not find that morphine did much good. The subcutaneous and intrarectal injection of saline solution did most good. He found in his experience that the hurrying on of labour often did good service. A method that he thought might be of use was vaginal Cæsarean section, as it obviated the unsatisfactory and injuriously stimulating action of mechanical dilators, apart from their other objections.

Dr. A. N. HOLMES (Dublin) said that some of the worst cases he had seen were those which occurred after labour; in some of these cases there was marked jaundice. Morphine was not as a rule pushed sufficiently far by those who had abandoned it as not of much benefit. If those who had abandoned the use of morphine had only used it more freely, but with caution, he was sure their conclusons would have been different.

Dr. J. INGLIS PARSONS (London) thought that because the kidney had to do extra work was the reason why it became affected. He thought that if the fœtus was the cause of the eclampsia and albuminuria it ought to be got rid of. He adopted this course and therefore expedited labour and found it to be the best. He thought that saline injections were of service as he had found them useful in his own practice.

Dr. EWEN JOHN MACLEAN (Cardiff) said that the toxæmic theories and the mechanical theories had given rise to scientific pathological conflict. He had used Bossi's dilator but did not feel encouraged to use it again. The importance of early recognition of albuminuria in pregnancy was very great and when found the condition should be rigorously treated. In many cases there was no albumin in the urine, even where symptoms leading to suspicion of renal disease were present. He found thyroid extract very valuable in increasing the renal efficiency and strongly recommended its trial by others.

Dr. F. W. FORBES ROSS (London) said that Mr. Hastings Tweedy had stated, when referring to the possibility of the condition being due to a poison as one of the factors in causation, that he believed the poison to be in combination with the solid tissue, and Professor Byers believed the poison, on the other hand, was circulating in the blood. He (the speaker) thought that the clinical history and pathological conditions were such that both the former speakers were correct. At first the symptoms were those of a poison in the blood: headache, vomiting, dyspnœa, and albumin in the urine, with retarded metabolism, as instanced by the deficiency of waste products in the urine and the small amount of urine. Subsequently parenchymatous changes in the liver, kidneys, &c., and, finally, affection of the nervous centres producing convulsions pointed strongly to close combination with the solid tissues. The toxin of tetanus was known to be in organic combination with the cerebral cells and produced convulsions. Again treatment tended to support the former speakers. Saline injections by diluting the poison did good; just as water added to spirit retarded its action, so in the case of eclampsia that proportion of the poison in the blood was diminished in action. Mr. Hastings Tweedy had mentioned the benefit of blood-letting and had called attention to the fact that if subsequent intravenous injection of saline solution were overdone the symptoms would gravely relapse. Here blood-letting, by producing a flow from the tissues into the blood, would carry away some of the poison, which was evidently in loose combination with the tissues, from the cerebral cells and lead to improvement. Subsequent saline injection, if the poison was present in the blood above a certain proportion, would, by producing hydræmic plethora, tend to cause a flow of fluid from the blood into the tissues, which latter, entering into loose combination with the dissolved poison, removed it from the fluid and thus again gave rise to the nervous symptoms afresh. Professor Byers had said that he thought that the fœtus was one of the main factors in the causation of the disease leading up to eclampsia. The speaker was in strong agreement with this and quoted a case tending to support this idea.

Dr. C. E. PURSLOW (Birmingham) said that he had tried the active and the passive treatment of labour in eclampsia. He preferred the active treatment of the eclampsia and the passive treatment of the labour was most satisfactory. He used the saline treatment and found it valuable. He quoted two cases of illegitimate pregnancies in which the pregnancy was the first in each case and both the cases died and he was strongly of the opinion that shame or mental distress was a powerful factor in such cases which were frequent in illegitimate first pregnancies.

Dr. A. SHARP (Nottingham) said that eclampsia was a matter of great interest to the general practitioner. He thought that worry and trouble were two of the causes of the condition, or at least predisposed to it. The morphine treatment was the reverse of what had been hitherto advocated for kidney disease and for this reason its recommendation was a striking fact.

Mr. J. W. DRAPER (Huddersfield) said that certain cases in his practice had to be helped regularly by being delivered under an anæsthetic and he found that on the whole they multiplied.

Dr. HENRY CORBY (Cork) said that with regard to theory the profession was very much in the dark as to the causation of eclampsia. He said that if albuminuria was present in the pregnancy there was more danger of eclampsia in labour. He thought that the quantity and quality of urine as regards waste products were more important than the amount of albumin. He did not like the action of pilocarpine though he had used it. He had tried morphine and did not like it whether pushed or not. He approved of saline injections as they undoubtedly diluted the poison. He thought that the fœtus might be a cause, but not the only cause, of the condition.

Dr. J. FORD ANDERSON (London) said that his practice was that in cases of eclampsia he tried to avoid causing irritation and to remove sources of irritation. He found that chloroform was especially dangerous in eclampsia. He considered nitrite of amyl useful. All sources of mental excitement and worry should be, as far as possible, eliminated from the patient's surroundings both during gestation and labour. He was of opinion that there were many causes of eclampsia and that, although the condition might be due to a poison or poisons, still there were possibly other causes.

The PRESIDENT of the section thought that what was brought out clearly by the discussion was that there was not much known as to the pathology of eclampsia in general. What also was brought out was the gentleness of treatment adopted by those who had had most experience. Morphine was in his opinion useful for the convulsions, but, as Dr. Corby said, it should be used most cautiously as it might cause disaster. He did not approve of vaginal Cæsarean section or Bossi's dilators and condemned dilators generally. He did not find as great benefit from saline injections, bleeding, &c., as some appeared to have found. He thought that pilocarpine in this condition was not a good drug and should not be used.

Dr. BOXALL, in reply, thought that certain cases of eclampsia should be rapidly delivered and in these cases, where matters were urgent, it did not appear that waiting increased the chances of recovery. He thought a stomach tube should be used. He used morphine and found it satisfactory. He did not like mechanical dilators and was glad to find that the opinion of the President of the section and of the majority of the members of the section was in harmony with his own.

Dr. MACLEAN then read a paper entitled

A Case of Elephantiasis of the Vulva.

The case was illustrated by microscopic and ordinary photographs. The history showed the condition to have been present at birth and there was a possible specific taint in the father who lived for some years amongst the natives of Australia. The patient was single and 19 years of age and stated that whilst within her recollection the vulva had always been enlarged, at and after puberty the enlargement became progressively cumbersome, until latterly the dragging pain which was experienced on assuming the erect attitude had become very distressing and produced an almost complete incapacity for house work. The growth was found to be based in the labia minora and clitoral regions and was removed by amputation with very satisfactory after results. The microscopic nature of the growth was described and was followed by a *résumé* of the English and continental literature as to incidence, etiology, pathological anatomy, and treatment.

Dr. J. INGLIS PARSONS then read a

Further Report on his Operation for Prolapsus Uteri, with Notes of 93 Cases.

He had found it extremely useful for private patients who wished to get rid of wearing pessaries. These people did not object to an operation that was practically bloodless and left no scar and was to all intents free from risk. His operation of injections of quinine into the broad ligament had two advantages over hysteropexy: firstly, the uterus could expand and pregnancy was not interfered with; and secondly, the uterus could be held up when the abdominal wall was too flabby for a ventrofixation. Six of his cases had full-term children without any difficulty subsequently to operation. There was no pain after the operation and no rise of temperature occurred as a rule. He had gradually increased the amount of the solution injected into each broad ligament to one drachm of a solution the strength of which was 100 grains to the ounce, but found it advisable not to go beyond that amount. If its repetition was necessary it should certainly not be done before a fortnight had elapsed. For minor cases of prolapse rest in bed for ten days after the operation was enough if the patient wore a pessary for two months and kept herself recumbent until organisation had taken place. In dealing with chronic cases of procidentia of from 10 to 20 years' duration a proportionately longer time was required in bed, and two injections would in some cases be necessary, with an interval of a fortnight between each injection. The results were very favourable. Of the 93 cases 90 per cent. had procidentia, about 80 per cent. were completely cured of their prolapse, and only one case completely failed. In every case of minor prolapse, where the patients had chronic backache and were obliged to wear a pessary, the operation had succeeded.

Dr. FORBES-ROSS asked Dr. Parsons whether the improvement and cure were lasting and whether there was any tendency to recurrence. He said that it was very satisfactory indeed to find that Dr. Parsons was able to extend his experience of his operation and felt himself justified in repeatedly bringing the apparent marked benefits and advantages to the notice of the profession and congratulated Dr. Parsons on his highly successful percentage of cures.

The PRESIDENT of the section commented favourably on the high percentage of success.

Dr. PARSONS replied and said that cases after eight years showed no tendency to relapse of the pre-existing condition.

Professor BYERS in eulogistic terms moved a cordial vote of thanks to Dr. Herbert Spencer for his able and tactful conduct of the business of the section.—This was seconded by Dr. TAYLOR YOUNG (Sydney, New South Wales) in apposite and happy terms and he asked to be allowed to couple the names of the secretaries of the section, Mr. M. W. Williams and Miss Louisa Garrett Anderson, with the vote, which was carried by acclamation.—The PRESIDENT of the section thanked the members and felicitated Miss Garrett Anderson for the success of her efforts in organising the gynæcological section of the pathological museum. He also thanked Professor Wertheim and Professor Howard Kelly for their help in making the section a success.

OPHTHALMOLOGY.

FRIDAY, JULY 28TH.

Mr. E. TREACHER COLLINS (London) opened a discussion on

Capsular Complications after Cataract Extraction

by reading a comprehensive paper illustrated by lantern slides of microscopic sections. He divided the cases into two groups—namely, (1) those resulting from the adhesion of the capsule to the extraction scar; and (2) those resulting from opacity occurring in connexion with capsular remnants. On the first group he showed by sections of eyes which had been lost that fixity of the capsule in the corneal wound might arise from two causes—namely, (*a*) an entanglement within the lips of the wound; and (*b*) agglutination of the capsule to the back of the wound by inflammatory exudate. He detailed three cases in which the capsule became entangled within the wound and resulted in such serious after-effects that the eyes were lost. In each case there ensued severe serous irido-cyclitis and in two of them sympathetic inflammation was excited in the other eye with such serious symptoms as hæmorrhage into the anterior chamber, keratitis punctata, and hypopyon, with later increase of tension. Paracentesis was performed for the relief of the symptoms and in one case an attempt was made to release the adherent capsule from the wound. Microscopic examination of the scar of the eyes showed the following appearances: a thickening of the sclero-corneal tissue in the vicinity of the wound, due to the spacing out of the layers of fibrous tissue and infiltration of round cells; an elevation of the conjunctiva overlying it, due to a considerable accumulation of round cells beneath the epithelium; a prolongation, in finger-like processes, of the surface epithelium into the scar for some little distance; and a large accumulation of cells between the lips of the wound surrounding the entangled lens capsule. Nearest to the capsule many of these cells were of an epithelioid type. Within the line of the wound a corrugated piece of the anterior lens capsule was fixed at from half to two-thirds of the depth of the wound and the lips of the wound gaped apart, although in one case five months had elapsed since the removal of the cataract. He concluded from the features of the sections (1) that the entangled lens capsule acted as a foreign body and produced about it just that arrangement of cells found around a foreign body, such as an eyelash, implanted within the healthy cornea either accidentally or experimentally; (2) that the presence of the capsule in the wound delayed healing; (3) that the delayed healing increased the liability to infection by micro-organisms from the conjunctiva and therefrom ensued the irido-cyclitis; and (4) that a tendency to irido-cyclitis was predisposed to in these eyes by the constant drag kept up on the ciliary body through the entangled capsule. Either or both ends of a divided capsule might become agglutinated to the posterior surface of the wound or the inflammatory exudate on the posterior surface of the wound might extend between the two lips of the divided anterior capsule and unite the posterior capsule to it. This agglutination did not delay healing but it advanced the position of the lens capsule from that which it occupied normally and consequently advanced the position of the iris. This might be so marked that the root of the iris might be dragged into apposition with the posterior surface of the cornea so as to obstruct filtration and produce glaucoma. The existence of a previous iridectomy did not completely remove this risk. This agglutination of the capsule to the wound was not so serious a matter as the incarceration of the capsule within the wound. In some few cases in eyes with adherent capsule no increase of tension might occur until a subsequent needling operation was performed; this might result from a new and stronger attachment of the capsule which brought forward the root of the iris still further. In other cases the irritation of the ciliary body by the disturbance of the tense capsular remnant just sufficed to block filtration by a new exudate. Even if no seriously untoward effects resulted such eyes not uncommonly remained irritable for some time after interference. Mr. Collins next considered how these risks of capsular complication might be best avoided and what could be done to remedy the condition when found to exist. He believed that the operation of extraction without iridectomy was less liable to be followed by complications of this order (the iris interposed between the cornea and the capsule), yet the risk was not thereby wholly avoided. He had recorded a case where on removal of a lens in its capsule without iridectomy the anterior hyaloid membrane was incarcerated and ultimately caused glaucoma. He next considered the possibility of preventing the complication by taking special precautions in opening the capsule before the liberation of the lens. Capsulotomy by forceps seemed to afford the best protective as compared with capsulotomy by needling. It made sure of the removal of the loose central capsular remnant but did not eliminate risks of peripheral portions becoming entangled.

attacks of mould and the beetle exhibited by rice from different countries, and the association of the mould with articles of food other than rice—such as maize, sago, dried fish, &c.

After a short discussion, in which the PRESIDENT of the section, Dr. T. SHENNAN (Edinburgh), Dr. G. T. CLARKE, and Major G. H. FINK, I.M.S., took part, Dr. HAMILTON WRIGHT briefly responded.

Dr. W. PAGE MAY (London) gave a lantern demonstration of a remarkable series of sections of the brain and spinal cord of

A Case of Microgyria or Cerebral Hemiatrophy.

The right side of the brain was less than two-thirds of the size of the left and its convolutions, though not simpler in form, were less than half as rich in grey and white matter. On the affected side the large motor and pyramidal cells were absent or markedly degenerated, whilst the pyramidal layer and the inner line of Baillarger were notably diminished in size. There were similar degenerative and atrophic changes in the parietal and frontal regions and to a lesser extent in the occipital. The basal ganglia on the affected side were much wasted and also the pyramidal tract and fillet. The opposite (right) lobe of the cerebellum was wasted and the cells of Purkinje were absent or degenerated. Marked atrophy in the nucleus dentatus and in the superior cerebellar peduncle was also a striking feature of the condition, and whilst the tangential fibres in the cerebrum and cerebellum were slightly affected the large associational tracts were normal. In the spinal cord marked degeneration in the anterior horn cells was associated with degeneration in the affected pyramidal tract and in the antero-lateral column.

Dr. R. CATTLEY (Leeds) and Dr. A. S. F. GRUNBAUM (Leeds) then communicated their observations

On the Mitoses in the Cells of the Graafian Follicle.

They stated that some of the mitoses found in the Graafian follicle of the rabbit's ovary bore a strong semblance to heterotype division; so much so that one of them at first thought some of the divisions were of that type. Further investigation had not confirmed this opinion. The ovaries examined included those of the human female, of the chimpanzee, and of the rhesus monkey, as well as of other mammals. So far as they were aware no previous records existed concerning the mitoses in the Graafian follicles of the three first named. The best preservation was obtained with "weak" Hermann's fluid—viz., the ordinary formula with half the quantity of osmic acid—and iron hæmatoxylin was the stain most frequently used. Many other methods of preservation and staining were tried. The appearances in the rabbit were peculiar and, as could be seen from the lantern slides, more difficult to interpret than in other mammals, although in these also shortness and thickness of the chromosomes occasionally made it difficult to say that a particular mitosis was not heterotype. But although these particular mitoses, all in metaphase, bore some resemblance to such forms, yet the absence of any heterotype prophase in all the numerous sections examined made it extremely probable that there were *only somatic mitoses* present. Moreover, there appeared to be no reduction to one-half the ordinary number of chromosomes. The absence of heterotype divisions in other animals made it unlikely that the forms seen in the rabbits were really of that nature. Even in the rabbit's ovary there were numerous mitoses obviously of the somatic type and it would be contrary to all experience for the majority to be heterotype; and since their existence would have supported certain views as to the embryological origin of the cells of the Graafian follicle it seemed to Dr. Cattley and Dr. Grünbaum of some importance to establish the negative proposition that heterotype divisions did not occur there.

Dr. F. G. BUSHNELL (Brighton) and Dr. F. HINDS (Worthing) then demonstrated a series of wet preparations illustrating Some Aspects of Carcinoma Ventriculi: its Variations in Malignancy, and Dr. BUSHNELL further demonstrated a specimen of Red Degeneration—so-called Necrobiosis—of a Fibroma of the Uterus which had been removed and lent by Mr. T. H. Ionides, surgeon to the Sussex County Hospital.

FRIDAY, JULY 28TH.

Dr. SHENNAN, who occupied the President's chair, opened the proceedings by calling upon Major FINK who read a paper entitled

Cancer and Pre-cancerous Changes: their Origin and Treatment,

in which he contended that cancer was due to a parasite, most probably a fungoid growth or mycetozoon, basing his arguments on analogy with "kohlhernie," a disease of the cabbage plant which was investigated a few years ago by Woronin and Eidam and stated to be due to one of the myxomycetes termed by its discoverers plasmodiophora brassicæ.

In reply to a question by Dr. MOTT, Major FINK said that he had no specimens illustrating the subject of his paper to submit to the meeting.

Sir JAMES GRANT (Canada) spoke at some length on the value of the results now being obtained by workers in the field of cancer research, particularly those associated with the Imperial Cancer Research Fund and expressed the hope that the time was at hand when the results obtained by research workers would justify the opening of an active campaign directed against the dread disease. Passing to the economic value of abstract science to the State, Sir James Grant enlarged upon the freedom of the Japanese troops from such diseases as dysentery and typhoid fever, due, in the opinion of the speaker, to the fact that a highly trained staff of bacteriologists preceded the army and advised as to the localities to be chosen for camps, &c.

In the absence from England of the author, one of the secretaries read a paper by Lieutenant-Colonel C. BIRT, R.A.M.C., entitled

The Caffeine Enrichment Method.

The pronouncements of Roth in 1903 regarding the selective action of caffeine upon bacilli of the colon and typhoid groups raised the hope that a medium had been found which would encourage the growth of the bacillus typhosus at the expense of the bacillus coli, for Roth stated that the former thrived upon agar which contained 0·6 per cent. caffeine (trimethylxanthin), but that the latter was entirely suppressed. A year later Roth admitted that the caffeinated agar did not fulfil all requirements and he advocated preliminary incubation—i.e., enrichment—of the suspected material in broth faintly alkaline to phenolphthalein and containing from 0·8 to 1 per cent. caffeine and claimed to have obtained constant results with diverse races of colon and typhoid bacilli. Other workers—Hoffmann and Ficker, Reitsch, Courmont and Lacomme, and others—attempting to repeat Roth's observations, recorded very conflicting results; the last-named observers, however, recorded a very striking peculiarity of the bacillus typhosus, as they found that cultivations of this organism obtained from a patient's urine thrived in caffeine broth whilst those isolated from the blood died, and Horrocks noted similar behaviour on the part of the micrococcus Melitensis from urine and the spleen when inoculated into this medium. Lieutenant-Colonel Birt therefore experimented with 31 varieties of Eberth's bacillus—all typical in their morphological and cultural characters and in their serum reactions. After five days' incubation at 37° C. the tubes containing 26 out of the 31 strains were sterile and on repeating the experiment a like result was noted at the end of three days; five races grew freely in the 0·5 per cent. caffeine peptone water. Fæces from five enteric fever patients were inoculated into the caffeine broth, incubated at 37° C. for six hours, then plated on Drigalski and Conradi's agar, but no typhoid bacilli could be isolated. Negative results were also obtained in the examination of suspected water-supplies; control experiments where water was experimentally infected with the bacillus typhosus also failed. Lieutenant-Colonel Birt also studied the effect of caffeine on the growth of 18 strains of bacillus dysenteriæ, all identical with Shiga's bacillus and found that none would grow in this medium; nor could the bacillus be recovered from the fæces of dysentery patients by this method, although the colon bacillus could usually grow through. Streptococci (both from the intestine and from pus), staphylococci, bacillus proteus (from the human intestine), bacillus pyocyaneus, and bacillus paratyphosus, type B, all thrived in the medium. Lieutenant Colonel Birt concluded by stating that 0·5 per cent. caffeine in 1 per cent. peptone water did not always restrain the development of the bacillus coli, whilst 26 out of 31 strains of the bacillus typhosus and all (18) strains of the bacillus dysenteriæ were completely inhibited; therefore negative results could not be relied upon to exclude these organisms from dejecta or water. Caffeinated media were of service in isolating streptococci and staphylococci.

Dr. J. W. H. EYRE (London) said that the experiments which he had already carried out with caffeinated media and others that he now had in progress fully confirmed Lieutenant-Colonel Birt's results. He considered that the paper was a valuable one as it sounded an urgently needed note of warning to those workers who even now reposed confidence in caffeinated media.

Dr. BERTRAM ABRAHAMS (London) showed an extremely interesting series of lantern slides illustrating the

Morbid Anatomy and Histology of Various Forms of Acute and Chronic Diseases of Joints.

Skiagrams, photomicrograms, and photograms were exhibited from cases of rheumatism, acute and chronic arthritis deformans, gonorrhœal arthritis, infective arthritis, Charcot's joint, gout, and Still's disease. It was pointed out that in all instances in which an acute or subacute infective origin could be postulated the only change to be noted in the bones was a marked thinning of the epiphysial ends. There was never any trace of overgrowth or the formation of osteophytes. It was suggested that the difference between the acute and chronic varieties of arthritis deformans was dependent upon the length of time during which the patient was exposed to the influence of an intoxication and stress was laid upon the importance of the indications for treatment which might be derived from a careful pathological and skiagraphical study of individual cases.

Dr. MOTT, Dr. A. W. GILCHRIST (Nice), and Dr. SHENNAN took part in a short discussion on the subject of this demonstration.

Dr. EYRE and Dr. J. F. FLASHMAN (Sydney, New South Wales) communicated a paper on

Diphtheroid Organisms in the Throats of the Insane.

They briefly recapitulated the work of Dr. Ford Robertson whose results suggested the probability that general paralysis f the insane was caused by the invasion of the body, already eakened by syphilis, by some member of the diphtheria roup of bacilli—possibly the Klebs-Löffler bacillus itself—nd further that it was this organism or its toxin that gave he paralytic aspect to the disease; and they explained hat their investigation into the occurrence of diphtheroid rganisms in the throats of general paralytics and patients ith other forms of insanity at Claybury and Colney Hatch sylums was undertaken with a view to determine the tability of his premisses. By carefully analysing recent iterature dealing with the incidence of the bacillus diphtheriæ in the throats of the presumably healthy and normal individual on the one hand and of diphtheria "contacts" on the other, average figures were obtained which served as a basis for comparison. They then proceeded to examine in detail the material from the throats of 60 cases of general paralysis of the insane and of 78 cases representing other forms of insanity; and material derived post mortem from the throat, pharynx, bronchi, cerebro-spinal fluid, heart blood, bile, and scrapings from various portions of the intestinal mucosa of ten cases of general paralysis and 26 cases representing other forms of insanity. Whenever a bacillus resembling the bacillus diphtheriæ was noted in any of these situations the organism was isolated and thoroughly studied, its identity established, and its virulence tested. Incidentally the value of Neisser's stain in the differentiation of Klebs-Löffler bacillus was discussed and they expressed their opinion that Neisser's so-called differential stain afforded no information beyond that given more easily and more conclusively by a simple carbolic methylene-blue stain. They summed up their results by stating the percentage incidence of all "diphtheroid" organisms in the throats of the insane as 17·3 per cent, a figure not in excess of that noted (18·5 per cent.) in the same population outside the walls of an asylum. The percentage incidence of genuine bacillus diphtheriæ at 5·07 per cent. in the throats of the insane (a large proportion of the diphtheroid organisms noted were common saprophytic members of the diphtheria group of bacilli) compared well with 6·9 per cent. in the healthy sane. Dealing more particularly with general paralytics they were unable to satisfy themselves that the bacillus diphtheriæ was more common in their throats (5 per cent.) than in the throats of cases of other forms of insanity (5·1 per cent.), whilst the majority of the strains isolated were of low virulence and slight toxicity and so compared in these respects with the types found in the throats of the healthy sane. The number of cases (10) of general paralysis studied post mortem was too small to permit of trustworthy deductions but it was significant that the bacillus diphtheriæ was not met with in any. As the result of their work they were unable to trace any causal connexion between the bacillus diphtheriæ and general paralysis of the insane.

Dr. MOTT and Dr. SHENNAN took part in the discussion that followed.

One of the secretaries then read a paper by Dr. CECIL PRICE JONES (London) entitled

The Influence of Certain Micro-organisms on the Cellular Constituents of the Red Bone Marrow,

in which he described his researches in this connexion. The procedure adopted comprised—(1) the examination of bone marrow obtained from a number of presumably healthy rabbits and guinea-pigs; (2) the examination of bone marrow obtained from a number of these animals that had died from the effects resulting from the inoculation of cultures of different micro organisms, the rabbits being inoculated with the diplococcus pneumoniæ and the guinea-pigs with the micrococcus Melitensis; (3) the estimation of the watery content of the bone marrow obtained from these healthy and infected animals; and (4) the comparison of the above results with those obtained from the examination of bone marrow obtained from children who had died from various causes, including pneumococcic septicæmia, broncho-pneumonia, epidemic diarrhœa, &c. Dr. Jones referred to a note previously published[1] in which the technique and the classification which he employed were detailed but he advocated for the present purpose a more general classification of the cell elements of the marrow into *non-granular* or lymphoid cells, *granular* or leucocytic cells, and *nucleated red cells*, these last being expressed in percentages of the total number of the white cells counted in each case. A series of examinations of bone marrow from 11 healthy rabbits gave an average percentage differential count of 51·3 per cent. lymphoid cells, 48·4 per cent. granular cells, and 11·7 per cent. of nucleated red cells. A similar series from five healthy guinea-pigs gave an average of 43·3 per cent. lymphoid cells, 56·2 per cent. granular cells, and 8·04 per cent. of nucleated red cells. An example of healthy human marrow obtained from a man who was killed in a carriage accident gave a percentage cellular composition of 50·4 per cent. lymphoid cells, 49·5 per cent. granular cells, and 8·2 per cent. of nucleated red cells. A series of examinations of marrow from 13 rabbits that were inoculated intraperitoneally with the pneumococcus, and with three exceptions died within 24 hours of infection, showed a marked lympho-erythroblastic type of marrow, giving an average percentage cellular composition of 61·4 per cent. lymphoid cells, 38·1 per cent. granular cells, and 35·0 per cent. of nucleated red cells; whereas a series of five rabbits inoculated subcutaneously with the pneumococcus, and surviving infection at least three days, showed a leucoblastic type of marrow, giving an average count of 34·3 per cent. lymphoid cells, 65·4 per cent. of granular cells, and 15·0 per cent. of nucleated red cells. A series of examinations of marrow from five guinea pigs inoculated subdurally with the micrococcus Melitensis showed a lympho erythroblastic type of marrow and gave an average percentage cellular composition of 61·1 per cent. lymphoid cells, 38·4 per cent. granular cells, and 18·3 per cent. of nucleated red cells. A series of examinations of marrow from eight children who died from pneumococcic infection showed a pronounced leucoblastic type of marrow, with average percentage counts of 32·17 per cent. lymphoid cells, 67·75 per cent. granular cells, and 6·1 per cent. of nucleated red cells, the type being especially strongly marked in two cases in which empyema was present. Another series from five children who had died from dysenteric diarrhœa presented a marrow that differed only slightly from the healthy type, giving average percentages of 45·4 per cent. lymphoid cells, 54·5 per cent. granular cells, and 10 per cent. of nucleated red cells. Dr. Jones concluded, first, that infection by different micro-organisms resulted in the production of different types of bone marrow dependent not only on the virulence but also on the specificity of the organism; and secondly, that apparently a lymphoblastic marrow was usually accompanied by an increased production of erythroblasts, but that, on the other hand, a leucoblastic marrow was not associated with increased erythroblastic production.

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[1] Brit Med. Jour.

Dr. P. J. CAMMIDGE (London) read a communication on

Observations on the Fæces in Biliary Obstruction and Pancreatic Disease,

first describing the methods he adopted for the examination of the fæces. After noting the naked-eye and microscopical characters of the specimen and the reaction to litmus the nitrogen was determined by Kjeldahl's method, the fat was estimated by a modification of the Schmidt-Stokes method for estimating milk fat, which was described in detail, and finally a rough colour estimation of the amount of stercobilin was made. Dr. Cammidge then summarised the results obtained in the examination of the stools from 53 cases of biliary obstruction and pancreatic disease, grouping his cases under five headings—viz., (1) stone in the first or second part of the common duct, eight cases; (2) stone in the third or fourth part of the common duct, nine cases; (3) chronic pancreatitis, 21 cases; (4) cancer of the pancreas, 13 cases; and (5) pancreatic diabetes, two cases. In colour the stools varied from white to a practically normal tint; but in all except the cases of cancer of the pancreas stercobilin was present and yielded a marked reaction; the reaction in all but those in which there was obstruction high up in the common duct was acid; muscle fibres were detected microscopically in all but cases of pancreatic diabetes; the percentage of total fat in the fæces showed wide variations, even in the same groups of cases, but was usually in excess of normal. Comparison of the percentages of neutral fat and fatty acids in the various groups of cases showed that when obstruction high up in the common duct seriously interfered with the entry of bile into the intestine the fatty acids showed an excess over the neutral fats; in all other lesions the neutral fats were in excess.

Dr. A. F. DIMMOCK (Harrogate) and Mr. F. W. BRANSON (Leeds) then demonstrated

A Rapid and Simple Process for the Estimation of Uric Acid.

The method consisted in the precipitation of the uric acid from a slightly alkaline solution as urate of ammonium and subsequently measuring the precipitate in a glass tube which was narrowed at one end and graduated experimentally. 100 cubic centimetres of urine were placed in a conical flask (Erlenmeyer) of about 250 cubic centimetres capacity; one gramme of lithium carbonate was added and the whole was boiled for three minutes. By this means practically the whole of the phosphates were precipitated as phosphate of lithium and free carbonic acid was eliminated. The liquid was filtered whilst hot to remove precipitated earthy salts, &c., and the filter was washed with distilled water until the filtrate measured 100 cubic centimetres; the filtrate containing the uric acid as lithium urate was then cooled down to 60° F. 50 cubic centimetres of the filtrate were transferred to a flask and five grammes of ammonium chloride were added and the flask was shaken until the salt was dissolved. After standing for three minutes the contents of the flask were warmed to 120° F. to secure a uniform aggregation of the precipitated urate of ammonium and the turbid mixture was now poured into a tube graduated in parts per 100 of uric acid and deposition was allowed to take place, the reading being taken after four hours had elapsed.

DENTAL SURGERY.

FRIDAY, JULY 28TH.

Mr. J. F. COLYER (London) read a paper on

Dental Diseases in Horses.

Mr. Colyer said that he had examined some 500 skulls of horses which had died in London. In 66 cases dental caries was present, in some instances slight and in others causing extensive destruction, as many as ten teeth being affected. The clinical and pathological conditions differed from those seen in the human teeth from the difference in structure, the greater part of the carious dentine being worn away in mastication. Caries was more common in the maxillary than in the mandibular teeth; only three cases of caries were seen in the lower jaw. Although caries was more common in old than in young horses cases did occur in quite young ones. Cupping, unequal attrition, and sometimes one tooth worn almost away were also frequently observed. The appearances generally suggested that the food of the horse had in its composition some ingredients which appeared to cause caries. Peridental disease was common in horses; 166 specimens showed more or less injury to the peridental membrane ranging from slight injuries to the most aggravated form of bone infection, together with occasional infection of the antrum. In these cases the breath of the animal was extremely offensive. When extra molars were present with mal-occlusion peridental disease was marked in their neighbourhood. The peridental disease in the horse appeared to be local in origin and to be due to hard bodies in the diet becoming lodged in the gum or between the gum and the tooth. A consideration of the peridental disease in horses would appear to suggest that the same disease in man was of more local origin than was generally supposed.

Mr. P. SIDNEY SPOKES (London) communicated a paper on

The Teeth as a Test of Age: a Note on Eruption.

He said that it was recently pointed out in THE LANCET that there were numerous practical occasions when the age, usually of a minor, was of forensic interest. The fact might be required for registration purposes (marriage, census returns, or death); for exemption from attendance at school, and under the Employment of Children Act, 1893; for indictments under the Criminal Law Amendments Act, 1895, and the Prevention of Cruelty to Children Act, 1904; for superannuation; and notably in the application of the legal presumptions that a child of less than seven years of age was incapable of committing an indictable offence and could only be punished if under 14 years of age on proof of actual malice. English statutes usually imposed the onus of proof upon the defendant; at the common law in cases of dispute infancy was presumed. Certificates of birth, baptismal registers, and, as with a case in 1808, the receipted entry in an accoucheur's day-book, had all been produced and admitted as valid evidence. There were, however, cases where documentary evidence was not forthcoming; the age of these persons must be presumed. Recent Acts had adopted the principle of facial diagnosis: "Where a child is ...... alleged ...... to be under any specified age and the child appears to the court to be under that age, such child shall, for the purposes of this Act, be deemed to be under that age unless the contrary is proved." The state of dentition might assist and this, Mr. Spokes thought, was the most that they could say. The late Sir Edwin Saunders, in the hope that he might assist in the prevention of the employment of young children in factories, examined the mouths of several hundred children of known ages and was of opinion that from their great uniformity of configuration, size, and arrangement the teeth possessed characters more definite and constant than any other parts. Their physiological history was consequently more precise and subject to less variation than that of any other organ. His examination of 227 boys, aged 13 years, showed that 25 per cent. of the second permanent molars were absent. In 111 girls 14 per cent. were absent. But he seemed to have adopted the principle of assuming the presence of the fourth when the other three were fully erupted and thought that of the 338 children, 13 years of age, no less than 294 might have been pronounced with confidence to be of that age from the inspection of their teeth. In 49 boys between 12 and 13 years of age, 16 (32 per cent.) had all four second permanent molars erupted; five (10 per cent.) had all four absent. These boys should have accounted for 196 second molars; 32 per cent. of these were fully erupted, 38 per cent. were erupting, and 28 per cent. were absent. Of the latter 34 were missing from the maxilla and 22 from the mandible. Taking, then, the erupted and the erupting together, 71 per cent. of the second permanent molars were visible in the mouths of those boys who had not completed their thirteenth year. In 638 boys between the years of 13 and 14 the percentage of those with all four second molars properly erupted rose to 62, but 4 per cent. had all four absent, 5 per cent. had three absent, 7 per cent. had two absent, and 7 per cent. had one absent. Of the teeth themselves, 62 per cent. were present, 23 per cent. were in process of eruption (making 85 per cent. visible in the mouth), and 14 per cent. were absent. Of 492 boys between 14 and 15 years 404, or 82 per cent., had all the four second molars in place. Only 2 per cent. had all four absent, 2 per cent. had three absent, 3 per cent. had two absent, and 7 per cent. had one absent. 10 per cent. of the teeth were in the eruptive stage, making 92 per cent. visible in the mouth, and 7 per cent. were still absent. The examination of boys over 15 years of age showed that in some cases second molars were absent and others only just showing. In some others the third molar or wisdom tooth was visible. Mr. Spokes said that he was afraid he could not hope to make the enumeration of these figures very interesting but every care was taken to insure accuracy. They must speak for themselves, but he thought they must confess that they were unable to rely entirely upon the teeth as a test of age. In some cases they could say affirmatively that the individual had in all probability reached a certain age. They could not so certainly say negatively that he had not attained a stated age. Certain other conditions of the denture might possibly have to be considered, as, for instance, the previous extraction of the first permanent molar which favoured the earlier eruption of the second molar. Of the missing molars 329 were from the maxilla and 229 from the mandible. With regard to the other permanent teeth, 12 per cent. of canines were absent in those under 13 years of age, 3 per cent. of those under 14, and 1 per cent. in those under 15. Here, again, a large proportion were upper teeth; only 18 lower canines were unerupted. The first bicuspids were more constant, due allowance being made for the removal of some for regulation purposes. 5 per cent. were absent at 12 years of age, 2 per cent. at 13 years, and 0·26 per cent. at 14 years. As might be expected a larger proportion of second bicuspids were unerupted and here the lower ones were most frequently missing. The percentages were: 15 at 12 years of age, 8 at 13 years, and 4 at 14 years. Of course, the presence or absence of all teeth should be taken into account in endeavouring to estimate age.

Dr. E. A. Bogue (New York) read a paper entitled

The Influence on Development of arranging Irregularly Placed Teeth into Normal Positions.

The paper was illustrated with lantern slides. At the outset Dr. Bogue explained that the question of adenoid growths and their influence had been omitted, the paper dealing more especially with the effect produced in the other structures by rendering normal an abnormal dental arch. The normal articulation was first discussed and it was pointed out that slight alterations in the position of the temporary teeth might antedate more grave irregularity in the permanent dentition. When the temporary teeth were lost early the permanent molars travelled forward and occupied a more anterior position than normal, so that early extraction might result in a diminution of the whole arch and of the accessory cavities. There was no such thing as large teeth in a small jaw, the bone being formed round the teeth after the crowns were complete. If the irregularities of the temporary teeth were noted it would be possible to prevent irregularity of the permanent dentition without extraction but by mechanical methods. The growth of the bones would be thus promoted. The results of so increasing the size of the dental arch and the jaw allowed of much better development of maxillæ as well as respiration and articulation. In the examination of many hundreds of aboriginal skulls he found that where irregularities existed in the dental arch there were also abnormalities of development in the maxillæ, palate bones, and sometimes lower sphenoid and ethmoid as well. It appeared, therefore, that by just so much as the permanent teeth were regular in their development and were regularly placed in their arches, so all the sinuses of the maxillæ and facial bones were better developed, the nasal septum became straighter, and the turbinated bones less obstructive.

Mr. Colyer considered that Dr. Bogue placed too much stress upon the influence of teeth in the development of the jaws and adjacent parts. It would rather appear that the development of the nasal cavities, &c., together with muscular development, influenced the position and arrangement of the teeth.

Mr. E. Lloyd-Williams (London) was sure that he only expressed the feelings of the section in thanking Dr. Bogue very heartily for visiting the meeting, for however much he disagreed with non-extraction and expanding methods of treating all irregularities Dr. Bogue's reputation for careful and scientific work was well known and the paper was deserving of attention.

Mr. J. G. Turner (London) and Mr. Mummery also discussed the paper.

Dr. Bogue, in his reply, said he was aware that there were objections to what he had said and it was difficult to demonstrate changes of development in the accessory nasal sinuses; unlimited expansion was, no doubt, an evil. He thanked the section for the reception of his paper.

Mr. D. P. Gabell (London) gave a lantern demonstration of Some Pathological Conditions of the Teeth.

Mr. J. F. Rymer (Brighton) read a paper on

Vegetarianism and its Effects upon the Teeth.

He considered the various diets and their necessary constituents and referred to the deficiencies of diet among the working classes. He also discussed the diet of the more wealthy classes, especially of the children, and pointed out that the more simple constituents and vegetable elements of diet had become in a large measure superseded. He then described an order of monks who were vegetarians with the addition of eggs and fish to whom he was in the habit of rendering professional services. The incidence of ordinary dental caries was very small but there were a good deal of alveolar suppuration and loosening of the teeth.

Dr. Astley V. Clarke (Leicester) read a paper on an Unusual Case of Necrosis of the Jaw occurring in a child two and a half years of age. The case was treated with antistreptococcic serum.

A paper on an Unusual Case of Alveolar Abscess persisting for two years was read by the honorary secretary on behalf of Mr. F. L. Dodd (London).

The President of the section (Mr. Morton Smale), in concluding the proceedings, congratulated the members on the success attained and the meeting terminated with a vote of thanks to the honorary secretaries.

TROPICAL MEDICINE.

Thursday, July 27th.

Dr. J. M. H. MacLeod (London) opened a discussion on

Tropical Diseases of the Skin

by regretting the absence of Dr. Jeanselme of Paris, whose presence they anticipated and hoped for, as he had made the subject of tropical dermatology a special study. Dr. MacLeod arranged tropical skin ailments into four groups: 1. Skin diseases due to some known parasite. Of these, some were due to (*a*) bacteria, such as tuberculosis cutis and leprosy, which were, however, in no way specially tropical; (*b*) streptothrix, of which Madura foot was the best example; (*c*) blastomycetes or yeast fungi which were common infections in the tropics, and recently a variety termed blastomycetic dermatitis had been described in America which, clinically and histologically, bore a certain resemblance to lupus vulgaris of the verrucose type; (*d*) hyphomycetes or moulds of which the many varieties of ringworm were examples, chief amongst which was tinea imbricata, but as the fungi of ringworm varied in Europe so, no doubt, different tropical countries had their own types: the precise fungus in pinta disease was not yet settled; and (*e*) of diseases due to animal parasites they had the world-wide acarus. Craw-craw was said to be associated in some indefinite way with filaria perstans and the pani-ghao or ground itch of Assam was considered by Dalgetty to be due to the larvæ of ankylostoma. Elephantiasis arabum had been ascribed to blocking of the lymphatics by the immature ova of filaria Bancrofti but there was much to be said against the supposition. 2. Diseases in which there was strong evidence of a parasitic origin but in which a specific micro-organism had not yet been established. In this group some kind of micro-organism either of the staphylococcus or streptococcus type seemed to be responsible. The best known were the oriental sore now found to be associated with the Leishman body and the phagedænic ulcer of warm countries. The veldt sore had been stated by Bishop Harman to be due to a diplococcus which he named the micrococcus vesicans. Pemphigus contagiosus was possibly due to a virulent micrococcus of the streptococcal type, keloid to a micro-organism of some kind, and yaws had recently been still further proved to be nearly allied to syphilis inasmuch as a spirochæta had been found in both. Under this group also might be classed ulcerating granuloma of the pudenda. 3. Diseases in which micro-organisms were generally present but were probably secondary factors in the evolution of the disease. Prickly heat and dysidrosis were of this type. 4. Non-parasitic skin affections of the tropics. Pellagra and acrodynia were no doubt due to toxins and pigmentations of the skin, vitiligo, and ainhum had also a place in the category of tropical diseases of the skin.

Dr. F. M. Sandwith (London) read a paper on

Pinta, sometimes termed "Spotted Sickness" and "Carate."

Pinta was defined as a tropical disease caused by a fungus which produced various discolourations in the uncovered parts of the skin and sometimes on the mucous membrane. It belonged to the group of specific skin diseases caused by vegetable parasites. Pinta was endemic in the Republic of Colombia, in Venezuela, Peru, Bolivia, Chili, Central America, Mexico, and British Honduras; isolated cases had been met with in Tripoli, Egypt, and the Gold Coast. Dirt and poverty seemed to be the predisposing agents. Nine varieties of the fungus (trichophyton pictor) were described, the differences consisting chiefly in the colour. The period of incubation was about one month; the eruption was not usually symmetrical and was accompanied by a furfuraceous desquamation. In the first stage of the disease there was active increase of pigment and in the second disappearance of pigment, a pseudo-vitiligo, of which the traces were said to be permanent. The disease might last a lifetime unless treated. The treatment consisted in the application of tincture of iodine and Vleminckx's solution applied to the spots in the early stages but in long-standing cases chrysarobin or nitrate of mercury ointment might be tried.

Dr. L. W. SAMBON (London) read a paper on

Pellagra

and urged the necessity for further investigation of this disease.

Dr. J. CAMPBELL GRAHAM (Deli, Sumatra) contributed

Notes on Frambœsia Tropica

and described two cases he met with in Sumatra in Europeans, one being a Dutch girl, aged four years, and the other a German girl, aged six years. In both cases it was only when the patients reached Europe that the disease disappeared. Frambœsia was scarcely ever seen in Europeans in Java or Sumatra. The Javanese responded to treatment more satisfactorily than did Europeans. Iodide of potassium and mercury with local applications of sulphate of copper were efficient remedies and lately Dr. Graham had met with encouraging results with bicarbonate of sodium given internally.

Dr M. E. JEANSELME (Paris) sent a paper (which was translated and abridged by Dr. SANDWITH) entitled

Notes on Pian (Yaws) met with in French Indo-China.

Dr. Jeanselme did not accept the idea that syphilis and yaws were identical diseases. He tabulated the differences between yaws and syphilis and drew attention to the fact that actinomycosis, as well as yaws and syphilis, was cured by iodide of potassium. Yaws was highly contagious, children especially being liable to become infected. The disease was not hereditary.

Mr. JOHN BELL (Hong-Kong) sent a communication on

A Tropical Skin Disease.

On the sole of the foot of an Indian policeman who had been in Hong-Kong nine years Mr. Bell found a large circular patch with undermined edges. In scrapings of the sore Dr. W. Hunter discovered a parasite which he identified as rhizoglyphus parasiticus, figured in Max Braun's "Die Thierischen Parasiten des Menchen." Treatment with 4 per cent. formalin in glycerin was rapidly successful.

Mr. GEORGE PERNET (London) contributed a paper entitled

Involvement of the Scalp in Leprosy.

The hairy scalp generally escaped in leprosy but Mr. Pernet had met with two exceptions to the rule in England. In lupus also the scalp was seldom attacked, although Mr. Pernet had seen lupus develop on the scalp separately; the dilated vessels coursing over the lupus infiltrations served to differentiate them from syphilomata and lepromata in this situation.

Dr. A. ALDO CASTELLANI (Colombo, Ceylon) sent the following papers:—

(*a*) *On the Presence of Spirochætæ in Two Cases of Ulcerated Parangi (Yaws).*

This communication is most important as it serves to affiliate syphilis and yaws still more closely seeing that a spirochæta has been recently met with by Schaudinn in syphilis. The yaws spirochæta was seen by Dr. Castellani in February, 1905, as an extremely minute and almost invisible organism stainable by the Leishman method.

(*b*) *Observations on the Dhobie Itch and other Tropical Trichophytic Diseases.*

Dhobie was the term applied by the laity in the tropics to any pruriginous skin affection, more especially when the genital regions, the axillæ, or the mammary regions were involved. In scrapings examined in liquor potassæ mycelial tubes and spores were to be seen; the segments of the mycelium were almost straight and had a double contour; the fungus grew slowly on maltose agar. In one patient in whom the disease persisted pure oil of turpentine brought about a cure. In one case met with the trichophyton of Dhobie itch attacked parts of the body other than the usual regions and gave rise to eruptions resembling tinea circinata. Dr. Castellani considered tinea and Dhobie itch as distinct diseases; the fungi of each differ and the fungi in tropical tinea were of various species and possibly differed from those met with in Europe. Dhobie itch and tinea circinata might occur in the same persons but on different regions of the body. Tinea imbricata due to the trichophyton Mansoni occurred in Ceylon. Ringworm of the scalp due to the trichophyton megalosporon endothrix was occasionally met with in Ceylon.

(*c*) *Tropical Forms of Pityriasis Versicolor.*

There were several forms of pityriasis versicolor met with in Ceylon. Two principal types might be distinguished: one black, pityriasis versicolor nigra; and one yellow, pityriasis versicolor flava. As regards the microscopical appearance of the fungi, that of pityriasis versicolor nigra was very abundant and had a mycelium of rather large size and very large spores which ran in clusters. Of pityriasis versicolor flava there were two varieties; one met with on the face, the neck, and the upper part of the trunk presented but few fungi, the mycelium being thick, irregular in shape, the spores few, not large, nor running into clusters. In the second variety of pityriasis versicolor flava the mycelium was found to be thin and regular in outline and the spores were very numerous, small, oval, and might be grouped in clusters. Judging from a few cultures made the fungi appeared to differ in their characteristics culturally.

Dr. KARL GROSSMANN (Liverpool) showed coloured photographs of Icelandic lepers by lantern slides, directing attention more especially to the condition of the eyes and palpebral surroundings.

In the discussion which followed Professor R. W. BOYCE (the President of the section), Dr. H. RADCLIFFE CROCKER (London), Major G. H. FINK, I.M.S., Dr. A. J. CHALMERS (Ceylon), Dr. SANDWITH, Dr. C. F. HARFORD (London), Dr. D. E. ANDERSON (Paris), and Mr. J. CANTLIE (London) took part.—Dr. CROCKER, discussing Dr. MacLeod's paper, pointed out the unsatisfactory state of the pathology of elephantiasis arabum and the confusion in regard to the varieties of ringworm. He also described a case of granuloma in the groins in a negro who had resided in London for many years.—Major FINK said that oriental sore was known by a variety of names in India. The idea prevailed in some parts of India that persons who suffered from oriental sore were believed to be rendered more or less immune to malaria. Major Fink also showed photographs of microscopic flagellates obtained from oriental sores which he had examined and of sand flies which he had collected with flagellated organisms like parasitic cercomonas in their interior.—Dr. SANDWITH, dealing with the relation of maize infected by weevils to pellagra, stated that he did not consider weevils the direct cause of pellagra in man, though it was true that weevils and mould often infected the maize side by side. The female weevil pierced the grain with its snout in order to make a convenient hole to lay its eggs in; it was therefore obvious that its could easily introduce inside the grain (which might be afterwards eaten by man) any spores of a fungus which happened to be outside the grain.

THE ANNUAL EXHIBITION.

V.—MINERAL WATERS, BEVERAGES, ETC.

MINERAL waters and beverages were not strongly represented and those shown belonged to the class of natural waters. The water derived from Vittel in the Vosges deserves attention, since it has gained reputation in the treatment of gouty disorders and urinary diseases. The water is not highly mineralised, is "clean" to the palate, and slightly alkaline. There are three springs at Vittel, the waters of which vary slightly as regards their mineral contents and two of them are ferruginous. Vittel contains all the usual appointments of a hydrothermal establishment. Another interesting natural mineral water from France, but without claims to any particular medicinal value, is Perrier, which contains its own natural carbonic acid gas associated with small quantities of carbonates. The water is agreeable to the palate and well adapted for table purposes. Apollinaris water and Johannis water are, of course, well known and samples were exhibited in by the Apollinaris Co., Limited, of 4, Stratford-place, Oxford-street, London, W. Samples also of Apenta from the natural bitter water springs near Budapest were shown. The waters of the State springs of Vichy were illustrated in the exhibit of Messrs. Ingram and Royle, Limited, of East Paul's Wharf, 26, Upper Thames-street, London. Samples also were shown of natural Carlsbad salts and Contrexéville water from the Pavilion springs. The waters of Buxton, Harrogate, and Leamington, together with photographs illustrating the hydropathic equipments at these places, were exhibited by the Buxton urban district council and the Harrogate and Leamington corporations respectively. Lastly, Messrs. C. Oppel and Co., of 10 and 12, Milton-street, London, E.C., exhibited samples of Friedrichshall water, which belongs to the pure bitter saline class of natural waters.

VI.—PUBLICATIONS.

The only publishers exhibiting were Messrs. W. B. Saunders and Co. of 9, Henrietta-street, London, W.C. (medical hand atlases and new surgical and medical works), and Mr. H. K. Lewis of 136, Gower-street, London, W.C. (practical series and the New Sydenham Society's publications).

VII.—MISCELLANEOUS.

The miscellaneous section of the exhibition chiefly comprised motor-cars designed more or less for the use of the medical man. The Clyde Motor Co., Limited, of Leicester, showed a Clyde 7–8-h.p. doctor's car, and besides a three-seated tonneau car and a Clyde 6-h.p. tricar. The Ryknield Engine Co., Limited, of Burton on-Trent, exhibited a well-designed car called the "Doctor's Landaulette," with 15-h.p. vertical engine and three separate cylinders. The Polymobile Co., of 6, Christopher-street, London, E.C., brought to the notice of the visitors a special car which has been designed for the medical practitioner. The Anglian Motor Co., Limited, of 78, Brompton-road, London, S.W., showed their Anglian light car and a tricar fitted with two speed gear and a motor bicycle. The Humber Co., Limited, of Coventry, exhibited their well-known Humber four cylinder touring car as well as three light cars. Lastly, Mr. S. J. Lilley, of Welford-place, Leicester, exhibited a motor-car and a medical brougham of excellent design, and the Central Motor Car Co., Limited, of 117, Long Acre, London, showed two examples of a 10-h.p. Ford car, one of which is provided with an attachable "tonneau," making the car "four-seated" or two-seated at will. Opportunities were afforded during the meeting of making trial runs in some of the cars exhibited.

THE PATHOLOGICAL MUSEUM.

THE Pathological Museum in connexion with the annual meeting of the British Medical Association, although itself of wide and varied interest, has undoubtedly gained enormously this year by being situated under one roof with all the sectional meeting rooms. Indeed, we have never before seen the museum utilised to such an extent or by so many visitors as in the present instance or the removal of individual specimens from the museum for the purpose of illustrating members' communications and discussions in the sections so readily carried out. The numerous exhibits comprised wet specimens, dried preparations, water-colour and oil paintings, photograms, skiagrams, microscopical preparations, and a large variety of lantern transparencies, both in monotone and in colours, and they were arranged in conspicuously labeled divisions to correspond with the various sections, so that it became an easy matter to find the exhibits relating to any particular subject.

The large room on the first floor of the technical school's in which the museum was housed was divided by partitions into three nearly equal compartments, one of which, that to the right of the entrance, was entirely filled by the exhibits of the gynæcological section. This exceedingly fine collection of specimens, &c., was, we understand, secured chiefly by the efforts of Dr. Louisa Garrett Anderson, one of the secretaries of that section. Grouped with consecutive numbering, the specimens illustrated extra-uterine gestation, degeneration of fibroids, malignant disease of the uterus, adenomyoma of the uterus, and a group of miscellaneous specimens, the most striking of which were full-sized sections of the pregnant tube and uteri showing cancer, tubercle, &c. The pathology of extra-uterine gestation was fully illustrated by drawings and sections from a case of ovarian pregnancy shown by Dr. Catherine van Tussenbroek of Amsterdam, and by an excellent series of sections, drawings, and slides shown by Dr. G. H. A. Comyns Berkeley and Dr. W. F. Victor Bonney. The group of specimens showing the degeneration of fibroids was particularly complete, the largest number and most interesting of the exhibits being contributed by Dr. S. J. Cameron (Glasgow), Dr. A. Leitch (Glasgow), and Mr. C. J. Bond (Leicester). Another exhibit in this group that attracted considerable attention was a series of 15 photographs illustrating degenerations of fibromyomata prepared by the Sanger-Shepherd three-colour process—the work of Miss A. Debenham.

The exhibits of the Section of Pathology occupied the central compartment of the museum and a portion of that to the left of the entrance and included many of more than passing interest. Immediately within the doorway was arranged a series of delicate little water-colour sketches lent by Dr. F. W. Mott (London) illustrating trypanosomes in blood-vessels of the central nervous system of animals, microscopical appearances of the lesions in sleeping sickness and in various forms of meningitis, &c., which bore high testimony to the skill and fidelity of the artist, Miss Kelly. Equally noteworthy was an extensive series of specimens illustrating the naked-eye appearances of leucoblastic and erythroblastic conditions of the bone marrow associated with various diseases, acute and chronic, and supplemented by a series of photomicrographic representations of bone marrow obtained from animals as well as from the human subject. These were exhibited by Dr. W. E. Carnegie Dickson (Edinburgh). Mr. Richard Muir (Edinburgh) showed a splendidly executed set of black-and-white drawings of pediculi and micro-photo transparencies illustrating the life-histories of trematode, cestode, and nematode worms and of malarial parasites. Not far off were to be seen embryo nematodes and the newly described *schistoma Cattoi* exhibited by Dr. J. Catto. Mr. W. Sampson Handley (London) showed a series of drawings, photographs, and microscopical preparations, illustrating by means of sections through the growing edge the theory that permeation is the principal factor in the dissemination of mammary cancer, and Mr. Bond (Leicester) had arranged a comprehensive series of photographs of uterine and ovarian physiology and pathology in the rabbit. Perhaps the exhibit which produced most comment was that shown by Mr. C. C. Hurst, F.L.S. (Burbage), consisting of specimens of peas, sweet peas, orchids, rabbits' pelts, and diagrams of domestic fowls and their combs, illustrating the principal point of Mendel's law of heredity—viz., the separate inheritance of single characters and the segregation and gametic purity of such characters after crossing.

The exhibit of the Section of Medicine was a small one but included an interesting series of wet specimens shown by Dr. R. A. Bolam (Newcastle-upon-Tyne) of aneurysm of the left ventricle and a number of photographs and skiagrams from cases of acute and chronic joint disease lent by Dr. Bertram L. Abrahams (London). A number of radiographs and some striking painted photographs of rodent ulcer and x ray dermatitis by Mr. J. Hall-Edwards (Birmingham) were placed in the Section of Surgery, together with an extensive set of radiographs of foreign bodies, stones, fractures, and deformities by Mr. C. Thurstan Holland (Liverpool). The Section of Navy and Army was occupied by an extremely interesting collection by Fleet-Surgeon C. Marsh Beadnell, R.N., of Lee-Enfield, Lee-Metford, Remington, and Mauser cartridges, bullets; various articles of clothing and materials showing bullet apertures and a series of Filippino skulls illustrating bullet wounds. To complete this series Mr. Lynn Jenkins (Hinckley) had lent a collection of shells and bullets from South Africa. The exhibit of the Section of Tropical Medicine was small also, the chief feature being the set of original drawings shown by Dr. J. H. MacLeod (London), illustrating the histo-pathology of yaws, lepra, syphilis, &c.

ST. PETERSBURG LADY PRACTITIONERS AND OPHTHALMOLOGY.—The Women's Medical Institute has again requested a subsidy from the St. Petersburg town council for the founding of an eye clinic. A similar request previously made had been refused but the need is so urgent that this time it is expected that the council will consent on the condition that the clinic is opened for the St. Petersburg population in accordance with the requirements of the town medical adviser.

THE LANCET.

LONDON: SATURDAY, AUGUST 12, 1905.

"Earth Temperature and Diarrhœal Diseases."

THE seasonal variations in the incidence of many acute and epidemic diseases are well recognised and have long exercised the minds of clinicians, hygienists, and bacteriologists. Much speculation has arisen and not a few experiments have been carried out with the object of throwing some light upon the relationship existing between meteorological and telluric conditions and the incidence of these diseases. So long ago as 1855 Dr. EDWARD SMITH published a paper[1] in which the conditions of atmospheric temperature, rainfall, and other climatological factors were carefully considered in relation to the outbreak of cholera in London in the previous year. Some years afterwards Dr. EDWARD BALLARD published a series of papers[2] in which he examined the influence of weather and season upon public health after a statistical study of 217,000 cases of disease occurring during nine years. The importance of the nature and the condition of the soil in relation to the occurrence of some bacterial diseases was also early recognised and studied by Sir GEORGE BUCHANAN, Dr. BOWDITCH, and Professor PETTENKOFER. In no group of diseases is the relationship between incidence and meteorological conditions more marked than in that which comprises cases of diarrhœa and acute gastro-enteritis. It has long been recognised that a hot, dry summer is associated with a larger number of cases and a heavier rate of mortality than a cool or wet one. The relationship was investigated by Dr. BALLARD and an exhaustive report was presented by him to the Local Government Board in 1887. Among many other inquiries he compared the curve of incidence of diarrhœal diseases in London and other towns with those of the temperature of the earth at depths of one foot and four feet below the surface respectively. His main results may be briefly summarised as follows. The summer rise of mortality due to these diseases does not occur until the temperature of the soil four feet below the surface reaches the level of 56° F. and the maximum mortality occurs in the week at which the temperature of the soil at the four-feet level attains its mean weekly maximum, while the decline of diarrhœal mortality coincides with the decline of the temperature of the soil at that level and does not follow the curve of the temperature of the atmosphere or of the soil at a depth of one foot.

These observations have been extensively quoted in various monographs and text-books but few attempts seem to have been made to put them to the test or to investigate the nature of the connexion between the two series of records. A paper has recently been published[3] by Sir JOHN W. MOORE on Earth Temperature and Diarrhœal Diseases in Dublin in 1904, in which this relationship has been tested by him in conjunction with his son, Mr. A. R. MOORE. Although the observations deal with one year only, owing to the fact that a climatological station was not installed at the University of Dublin until Jan. 1st, 1904, yet the results obtained are of considerable interest and confirm in the main those previously recorded by Dr. BALLARD. It was found that the diarrhœal mortality in the Dublin district was very small until the third week after the temperature of the subsoil at a depth of four feet had passed the critical level of 56° F., while the maximum mortality followed a fortnight after the maximum temperature. This fortnight of latent period or delay Sir JOHN MOORE attributes to the time occupied by the progress of the cases to the fatal issue and in the subsequent registration of the deaths. This seems to us in view of the rapidly fatal character which the disease frequently assumes to require verification which is, however, a matter of some difficulty, since the duration of the fatal illness is rarely recorded upon the certificate of death. It was further found that the four-feet earth thermometer stood at 56° F. or upwards for 11 weeks—namely, from July 10th to Sept. 24th. Taking a period of 11 weeks, dating from a fortnight later to allow for the period of latency—that is, from July 24th to Oct. 8th—the striking total of 249 deaths was found to have occurred, which is 71·7 per cent. of the total mortality from diarrhœal diseases for the year—namely, 339.

Dr. BALLARD, in the report to which reference has already been made, deduced the following conclusions from his observations. The essential cause of epidemic diarrhœa resides ordinarily in the superficial layers of the earth where it is intimately associated with the life processes of some micro-organism which is dependent among other things upon conditions of season and on the presence of dead organic matter which is its pabulum. On occasion this micro-organism is capable of becoming air-borne and infecting food and there finding conditions favourable to its development; and during development it leads to the production of a virulent chemical poison which is, in the human body, the material cause of epidemic diarrhœa. It is impossible not to admire the ingenuity and the far-sighted character of these deductions and it may be confessed that after a lapse of 18 years there is little to add to them. Most of them have been amply confirmed. Even now, however, our knowledge is far from complete with regard to the bacteriology of these cases, since such various organisms as Klein's bacillus lactis aerogenes, the bacillus coli and its congeners, and the bacilli of dysentery of Flexner and Shiga have all been isolated from cases of this nature. Probably it will be found that there is more than one exciting cause of diarrhœa of epidemic character. The relations between the growth of certain pathogenic bacteria in soil and the conditions of the soil itself have been the subject of investigation in this country by Dr. SIDNEY MARTIN and Dr. A. C. HOUSTON. Dr. MARTIN[4] has carefully studied the growth of the typhoid bacillus and has found that in certain virgin soils it neither lives nor grows but after cultivation such soils when sterilised become capable of maintaining the bacillus for a limited time. On the other hand, cultivated soils when unsterilised are inimical to the growth of typhoid bacilli which disappear in about 12 days after being placed in them. Dr. MARTIN concluded that the disappearance of the typhoid bacillus was probably due to the deleterious action on its growth of the products formed by the bacteria natural to the soil. Dr. HOUSTON has further investigated the question[5] and has found that if sewage be added to garden soil there is only a temporary increase of sewage microbes at the expense of the soil microbes, the latter eventually ousting the former, and also that pathogenic bacteria do not maintain their vitality for more than a brief period in the superficial layers of the soil. A further point of some interest, clearly brought out in Sir JOHN MOORE'S charts, is the influence of rainfall in diminishing the mortality of diarrhœal diseases. On two occasions during the epidemic period a rainfall of an inch or upwards was followed after a fortnight's interval by a definite fall in the mortality. According to Dr. A. NEWSHOLME rainfall is of more importance than temperature in relation to this disease. The whole subject of the relation of disease-producing organisms to meteorological conditions in the widest sense is one which offers a great field for future work, with the promise of results of far-reaching importance; and we welcome the interest which has been aroused in this matter in the United Kingdom.

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[1] Transactions of the Royal Medical and Chirurgical Society, vol. xxxviii., 1855, p. 101.

[2] Ibid., vol. l.–li.

[3] Dublin Journal of Medical Science, May, 1905, and THE LANCET, Feb. 25th, 1905, p. 500.

[4] Annual Report of Medical Officer to Local Government Board, 1900–01; THE LANCET, Sept. 13th, 1902.

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The Control of Proprietary Remedies.

A SERIOUS attempt is being made by the Council of Pharmacy and Chemistry of the American Medical Association to control the various secret remedies which are put before the medical profession in that country. The following particulars of the scheme are taken from a copy of the rules for which we are indebted to the courtesy of a well-known firm of druggists. It appears that in the United States of America there is a rapidly growing sentiment against the increasing legion of secret preparations. The *Journal of the American Medical Association* conceived the idea of forming a board of control, to be composed of pharmacists and chemists, which should pass in review all medicinal preparations offered for insertion in the advertising pages of that journal. That idea has been modified by making the functions of the proposed board similar to those of the Committee of Revision of the United States Pharmacopœia. The work is to be taken up where that committee left off and a description of the unofficial preparations which conform to the required standard will be published in the form of a book to be entitled "New and Unofficial Remedies." In other words, it will form an extra pharmacopœia giving useful details of reputable preparations. The board of trustees of the American Medical Association has authorised the formation of an advisory board, to be known as the Council of Pharmacy and Chemistry, to carry out the work. The council is composed of men eminent in medicine and pharmacy as writers, teachers, and research workers. The council proposes immediately to examine into the composition of the various medicinal preparations that are offered to physicians and are not included in the United States Pharmacopœia or in other standard text-books or formularies. In the rules here given the term "article" is applied to any drug or preparation used in the treatment of disease.

RULE 1.—No article will be admitted unless the names of the active ingredients and the strength be given for publication. It is considered the duty as well as the right of the physician to know the composition of medicines which he prescribes for his patients. No one would voluntarily call in a physician who was in the habit of prescribing remedies the constituents of which were not known to him. The published statement will in some instances give the general character of the vehicle and flavouring agents, and in the case of preparations intended for external use the character of the vehicle or base must be stated in order to indicate whether the article has penetrative or simply protective properties.

RULE 2.—No chemical compound will be admitted unless information be furnished regarding tests for identity, purity, and strength, and in the case of a synthetic compound the rational formula must be given.

RULE 3.—No article that is advertised to the public will be admitted, excepting disinfectants, cosmetics, foods, and mineral waters, when such articles are advertised in an unobjectionable manner.

RULE 4.—No article will be admitted bearing the names of diseases in the treatment of which the article is indicated but the therapeutic indications, properties, and doses may be stated. This rule does not apply to vaccines and antitoxins, nor to advertising in medical journals, nor to literature distributed solely to physicians. This rule is framed with a view of stopping the practice of self-drugging, and is in the interests alike of the laity and the profession. The laity are not competent to determine whether the employment of a given article is safe and proper, and they are often induced to continue its use or to recommend it to others quite regardless of the evident dangers of forming drug habits or of doing serious injury by employing a remedy that in reality may be contra-indicated. It is the prerogative of the physician alone to determine in what disease a given article may be indicated.

RULE 5.—No article will be admitted or retained about which the manufacturer or his agents make false or misleading statements regarding the country of origin, the raw material, or the method of collection or preparation.

RULE 6.—No article will be admitted or retained about whose therapeutic value the manufacturer or his agents make unwarranted, exaggerated, or misleading statements.

RULE 7.—Labels on articles containing poisonous substances should show the amounts of each of such ingredients in a given quantity of the product. This information enables the pharmacist to safeguard the patient and physician.

RULE 8.—Every article should have a name indicative of its chemical composition or pharmaceutical character in addition to its trade name, when such trade name is not sufficiently descriptive.

The manufacturers of legitimate preparations have nothing to fear from this action on the part of the American Medical Association. On the contrary, they are to be congratulated that the Association has undertaken to separate the wheat from the chaff. In this country medical practitioners are overwhelmed with samples and literature of preparations which may be good, bad or indifferent. The composition is not usually disclosed and the habit is formed of throwing all aside, the good and the bad together. The list of unofficial preparations of known composition and strength when published by the American Medical Association should prove valuable to the medical profession and a safeguard to the public. Measures of similar character might with advantage be adopted in this country. It should not be difficult to find funds for the purpose, especially if a working arrangement were made with the American Medical Association whereby each country should investigate its own products to avoid covering the same ground twice.

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[5] Reports of Medical Officer to Local Government Board, 1898–1902.

Though the rules adopted by the American Medical Association are good and worthy of imitation they are not sufficiently comprehensive to nullify entirely the present system which leads to self-drugging. The weak points are not hard to find. Let it be imagined that a practitioner prescribes a preparation which is labelled on the lines laid down in the rules, as follows: "A hypnotic and sedative, containing three-quarters of a grain of morphine in 110 minims. Dose 5 to 30 minims." Unless the practitioner initials and dates the prescription whenever he requires it to be repeated there is nothing to prevent the repetition of the prescription dozens and even hundreds of times. Pharmacists should be requested to consider it a breach of etiquette to copy a prescription for a patient or to make it up for any other person. Again, it should be a rule that no proprietary medicine should be delivered to the patient in the original package in order to prevent the purchase of further supplies without a prescription. The excellent rules of the American Medical Association should therefore be supplemented by further rules for the guidance of pharmacists on these points touching the repetition of prescriptions and the transference of medicines from original packages before delivery to the patient. A set of rules of this kind, supplemented by a more complete code of pharmaceutical etiquette, would benefit alike the public and the medical profession and should find a place in the system of medico-pharmaceutical ethics.

Again, it is obvious that another weak point in the proposed scheme is that it will almost of necessity fail to touch the very class of secret or proprietary remedies which are productive of the largest amount of self-drugging—viz., so-called "patent" medicines produced for the express purpose of appealing to the credulity of the multitude. Since the proposed list is rightly intended solely for the use of medical men the failure to secure recognition will hardly be of any material detriment to the sale of such preparations which will still be advertised in the lay journals and reach the public for whom their proprietors cater.

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The Prevention and Treatment of Anthrax in Man.

The danger of infection from anthrax incurred in the handling of wools, hides, and horsehair, especially in the sorting and preparation of imported supplies from certain foreign districts, has long been recognised in this country and the popular name of "wool-sorters' disease" frequently applied to some of these infections is an evidence of this. To endeavour to deal with this matter and to minimise the risk of infection the processes of sorting, willowing, washing, combing and carding wool, goat hair, and camel hair have been classed as dangerous and included within the provisions of the Factory and Workshop Act, 1901, and all cases of anthrax contracted in connexion with such industries must be reported to the Home Office. After a detailed discussion at Bradford by a joint committee, to which representatives of both masters and men were invited, a draft series of regulations has been issued by the Home Secretary and transmitted to those whom they concern, with an accompanying letter dated July 13th, stating that if objections of substance are taken to them either by the occupiers or the workpeople, or by any other persons affected, these objections, which must be addressed in writing to the Home Secretary, together with the specific grounds of objection, will be the subject of full inquiry by a competent person appointed by the Home Secretary before the final regulations are made. At this inquiry employers, owners, occupiers, workpeople, and all others concerned will be entitled to a full hearing.

The draft copy of the regulations contains a short note describing in simple terms the character of the disease and the probable channels and methods of infection, such as by breathing or swallowing the dust from infected wools or hairs or by such dust lodging in a cut or scratch or in the cracks of chapped hands. The proposed regulations deal especially with the opening, sorting, and willowing of wool and hair, which for this purpose are classed under three schedules. Schedule A comprises Van mohair, Persian locks, and Persian, or so-called Persian (including Karadi and Bagdad), if not subjected to the process of sorting or willowing; all in this class must be thoroughly steeped in water while in the bale before being opened. Schedule B includes alpaca, pelitan, East Indian cashmere, Russian camel-hair, Pekin camel-hair, and Persian, or so-called Persian (including the two above named), if previously sorted or willowed; hairs and wools in this class may either be opened after steeping or over an efficient opening screen with mechanical exhaust draught in a room set apart for this purpose. Schedule C simply includes all mohair other than Van mohair; these need not be opened over a screen but must be sorted over a board provided with a downward draught. It is further ordered that all opening and sorting shall be carried out by men skilled in judging the condition of the material and that 1000 cubic feet of space shall be allowed for each person in each sorting room and that there shall be efficient ventilation. All pieces of skin, scab, clippings, or shearlings shall be removed daily and disinfected or destroyed, and detailed regulations are proposed for dealing with the dust extracted by exhaust draughts and for the supply of respirators and overalls to be worn by all persons engaged in collecting and removing the dust. The floor of every room where opening, sorting, or willowing is carried on is to be sprinkled with disinfectant solution daily and to be swept immediately after sprinkling; the walls and ceilings are to be cleansed and lime-washed regularly. Suitable washing accommodation and rooms for meals are to be provided away from the sorting and willowing rooms. No person with an open cut or sore is to be allowed to work in the rooms and requisites for treating scratches and slight wounds are to be kept at hand. These regulations seem to represent a very fair and equitable attempt to deal with a difficult problem and we may express the hope that the owners and the men concerned will loyally support the measures recommended, the more so that they have been carefully consulted in these preparations and still have opportunity for suggesting improvements or alterations.

To prevent infection by horsehair and by hides and skins seems, if anything, a more difficult matter, since even steam disinfection or boiling of horsehair cannot be absolutely relied on, while in the case of hides the anthrax spores resist even the action of the fluids used in tanning and it is difficult, if not absolutely impracticable, to disinfect hides which have to be tanned subsequently. Unfortunately, the most rational method of dealing with the problem, that of preventing the importation of infected wool, hair, and hides, is a counsel of perfection which is unattainable. For much valuable information on the subject of infection from anthrax in relation to industrial processes we are indebted to the valuable Milroy lectures delivered before the Royal College of Physicians of London by Dr. T. M. LEGGE, His Majesty's medical inspector of factories.[1] Dr. LEGGE deals especially with the 261 cases reported to the Home Office during the six years 1899–1904. Of these 88 occurred worsted- and wool-workers, 70 in workers with horse-ir and bristles, 86 in those engaged with hides and skins, d the remaining 17 in those engaged in miscellaneous cupations, such as horn-workers, rag-sorters, and porters. he cases infected through wool occurred almost entirely in e Bradford district of the West Riding and in Worcesterire, the reason being that in these places the dangerous lasses of wool are used, while colonial wools, which are ree from infection, are used elsewhere. On the other and, cases due to horsehair are more general in their distribution, while those due to hides and skins occur mainly n London and Liverpool. Cases of anthrax also occur mong persons coming in contact with infected live cattle r engaged in slaughtering or in the disposal of the arcasses, but it is difficult to obtain statistics of these, except of the fatal cases. Dr. LEGGE's figures, however, show that since 1899 the majority of the fatal cases (55 out of 72) have occurred in association with factories or workshops. Among the 261 cases investigated by Dr. LEGGE there was a mortality of 25·6 per cent., which agrees very closely with the rate of 24·1 per cent. among 34,052 cases occurring during the 11 years 1889–1900 in Italy, where the disease is notifiable. It is of interest to notice the source of the materials to which these 261 cases have been attributed. No single case has been traced during the whole six years to wools imported from Australia and New Zealand, although the amounts are very large, the value in 1902 of such imports being estimated at over £13,500,000, whereas at least 30 cases and possibly 40 occurred from Persian wool, the value of which in 1902 was only a little over £13,000. Apparently the reason there is a demand for Persian wool is due to the fact that the Persian breed of sheep is one of the few in which the wool is naturally of a black, brown, or fawn colour. In regard to horsehair the infected supplies seem to come chiefly from Russia and China—in fact, some observers maintain that all bales of mane hair from China should be regarded as infected.

In regard to the prevalence of anthrax its occurrence in animals offers some difficult problems for discussion. Anthrax is a not uncommon disease of animals in all parts of the world; in Great Britain during 1903 there were 1143 cases. The incidence of anthrax shows some peculiar seasonal variations which are different in different countries, the probable explanation being the variations produced by seasonal changes in the conditions favouring the growth of the organism outside the body. There is no doubt that animals have been infected by the refuse from factories in which raw animal products are dealt with but it is probable that many cases are due, as suggested by Professor J. McFADYEAN, to artificial manure and imported foodstuffs, which it has been shown may be carriers of the infection. Again, infection may occur from other cases of the disease or from the careless treatment and disposal of the carcass of an animal dead from the disease. The treatment adopted in human cases, in which the disease is usually local, cases of internal anthrax being rare nowadays, has until recently consisted in simple surgical procedures, such as excision or cauterisation or of subcutaneous injections of weak carbolic acid solutions, while some surgeons have applied powdered ipecacuanha to the wound and have administered the same drug internally. Since 1897, when Professor SCLAVO of Siena first introduced his anti-anthrax serum, widely extended trials of the serum treatment have been made and, according to Dr. LEGGE, who has devoted particular attention to this matter, it is claimed that even in large doses the serum is innocuous, that no case is fatal if serum is given in an early stage, that some apparently hopeless cases have been saved by it, that it reduces the destruction of tissue to a minimum, and, lastly, that in internal anthrax it is the only treatment affording any hope. After injection of the serum there is usually a rise of temperature, often above 105° F., which Professor SCLAVO regards as of favourable prognostic import. The mode of action of the serum is at present the subject of some controversy; Professor SCLAVO regards its main effect as that of stimulating the defensive activities of the phagocytes. It is certainly rather an antibacterial than an antitoxic action. During the past year SCLAVO'S serum has been used in this country and cases have been recorded[2] with encouraging results and afford us some grounds for hoping that the present mortality-rate of 25 6 per cent. may be very considerably reduced. It is of interest to note that in Santa Croce, an Italian town with a number of tanneries, the workers practically insist on having the serum treatment and being now no longer in fear of operation present themselves for treatment at an early stage of the disease.

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[1] Vide THE LANCET, March 18th (p. 689) and 25th (p. 765) and April 1st (p. 841), 1905.

[2] THE LANCET, Feb. 4th, 1905, p. 292, and Brit. Med. Jour., Jan. 7th and Feb. 11th.

POLISH DEATH CERTIFICATES IN RUSSIAN.—According to the *Kur. Lodz*, Dr. Grosglika has protested against the requirements of the Warsaw Medical Department that certificates of death submitted as to insurance or for permission to remove bodies should be in Russian. His protest has been reinforced by that of 96 other medical men of Warsaw and a number of lady medical practitioners.

Annotations.

"Ne quid nimis."

THE WORK OF THE GOVERNMENT LABORATORY.

The report of the principal chemist of the Government laboratory generally affords interesting reading and the one recently issued is no exception. The total number of analyses and examinations made in the laboratory in Clement's Inn Passage during the year ending March 31st, 1905, was 88,757. It is obvious that the work must relate to many diverse substances and must therefore require knowledge and experience in almost all the branches of chemical analysis. We are therefore disposed to suggest that the Government might see its way to publish a book on the analytical methods employed in its laboratory. Such a book would not only lead to the adoption of uniform methods of analysis and so avoid controversy based on different methods employed but would be of the greatest value to the general analyst. We commend this suggestion to Dr. T. E. Thorpe, the able principal of the Government laboratory. The laboratory returns this year afford additional evidence of the fact of the reduced consumption of alcoholic beverages, since the number of samples of beers, wines, and so on, examined was considerably less than in the previous year. It is interesting in passing to consider the causes of the decided decline in the consumption of alcoholic beverages. It would appear that this consumption bears some relationship to the prosperity of the country. In prosperous times the consumption increases so that doubtless diminished spending power is a factor, while we think that the recent revelations in regard to the practice of substitution in the wine and spirit trade, in which we have taken a share, have made an undoubted impression upon the public. Owing to the recent proceedings in the police courts against vendors of brandy not made exclusively from the juice of the grape there has been an increase in the number of such samples referred to the laboratory and 13 cases were referred to the Government chemists under the Sale of Food and Drug Act. We are glad to find that the Government chemists were able to sustain the charge of adulteration in regard to 11 of the samples. Our satisfaction is due to the fact that the Government chemists evidently agree with us that chemical analysis does throw light on the question as to whether brandy is or is not made from grape juice. We note that grape juice is admitted free of duty provided that it is genuine and free from spirit. This concession seems to us to encourage the production of wines, the so-called basis wines, in this country which thus escape the duty that is levied on imported wines. This seems to be not only unfair to the importers of wine in this country but to be calculated to give rise to a fraudulent practice. There is no doubt that large quantities of grape juice are imported into this country and fermented into wine which is afterwards sold as genuine Bordeaux wine. There has been a decided increase in the number of samples of tea examined owing, no doubt, to the increased duty on tea resulting in larger importations of lower grade qualities. In regard to the examination of beer there is shown to be a marked diminution in the amount of arsenic found in the materials used in the brewing of beer as compared with the last official year. Butter continues to be imported into this country containing boron preservatives but, as Dr. Thorpe points out, there is a difficulty in restricting this admixture so long as a legal limit is lacking. But why should a legal limit be lacking since we gained the definite pronouncement of a departmental committee on this question some years ago? Under the Sale of Food an Drugs Act 105 samples in all were examined and in ten o these, or 9·5 per cent., the Government chemist's conclusion differed from the public analyst as against 14·4 per cent. las year and 15·2 per cent. for the previous year. It is eviden that the work of the public analyst in this country is reachin a higher standard in each succeeding year.

THE HOSPITAL SUNDAY FUND.

It is now possible to calculate fairly closely the resul of the thirty-third annual collection on behalf of the Metro politan Hospital Sunday Fund, which took place last June The amount actually received at the Mansion House up t date, including Mr. Richard Herring's generous contributio exceeds £75,000, and in all probability another £3000 will b received before the close of the financial year of the Fund o Oct. 31st next. It was hoped that the much-coveted sum o £100,000 would have resulted from the collection this year but bearing in mind the many generous contributions whic have been made to King Edward's Hospital Fund, and the many appeals which have been made for financial suppor for individual hospitals, the collection of £78,000 as a result of the appeal of the Metropolitan Hospital Sunday Fund for 1905 is by no means an unworthy effort and i some £14,000 more than any total that has been previousl collected. On behalf of the suffering poor of our London hospitals we thank all those who have so generously contributed to this gratifying result.

RED RUBBER.

In our issue of June 10th we published a letter from Mr. F. A. Pond of Liverpool drawing attention to the amount of antimony contained in red rubber and to the possibility of a connexion between the use of red rubber rings in bottles of effervescing beverages and food materials and the occurrence of cases of appendicitis and other intestinal disorders. In commenting on this communication[1] we pointed out that the antimony in red rubber is with great difficulty dissolved out of it and after careful trials we could find no evidence that any such solution occurred in the fluids ordinarily kept in the bottles. At the same time we considered the use of rubber of this character for the purpose as undesirable. We have received from a correspondent a copy of the *Wochenschrift für Brauerei* of July 22nd containing an article criticising Mr. Pond's conclusions in very much the same sense. It is there stated that the antimony in red rubber is almost insoluble in organic acids, such as 10 per cent. acetic, but is soluble in hydrochloric acid. On the other hand, there is no evidence of its being dissolved by beer, conserves, or drinks containing fruit juices. The statement that small particles of the rubber become detached and swallowed is also looked upon as very improbable, since particles of cork, which are more frequently found in beverages kept in bottles, are rarely swallowed, and even if small particles of rubber should reach the stomach it is unlikely that the digestive juices would be capable of exerting any solvent action upon them. The writer of the article regards it as noteworthy that in Mr. Pond's series of cases the beverages used were for the most part non-intoxicating or non-alcoholic in character and suggests that since antimony is not dissolved by them some constituent of the fluids themselves may be responsible. He offers the suggestion to medical men that the saponin preparations frequently used to induce frothing of temperance beverages may be the cause of the sequence of events occurring in such a series of cases as that observed by Mr. Pond, since Kobert[2] has recorded weakness and paralysis of muscles following the administration of saponin ies. Coming from a brewing journal and being printed arger type, the suggestion looks not unlike hoisting the otaler with his own petard but it is made in all serious- s. The article concludes with the statement that rubber nufacturers can easily produce rubber rings free from imony and yet of equal value to those at present in use. may add that we have received a further communica- n from Mr. Pond in which he points out that the Austrian vernment has a regulation to the effect that tubes, rings, ts, and the like used for feeding-bottles, and rings used bottles for preserves, which are prepared with antimony y only be employed for this purpose when they yield no timony on being treated with tartaric acid.

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[1] The Lancet, June 24th, 1905, p. 1736.

[2] Toxicologie, p. 23.

PANCREATITIS IN MUMPS.

THE structure of the pancreas so closely resembles that of salivary glands that the Germans have called it the bdominal parotid." This similarity suggests that the tastases of mumps should include pancreatitis. However tle has been written on the point. Perhaps the most im- rtant communication is one by M. Simonin.[1] He found at symptoms of pancreatitis occurred in ten out of 2 cases of mumps treated in the military hospital Val-de-Grâce. The pathology of the pancreatitis is ly a subject of inference, for it generally runs a nign course and no opportunity is given for examination the gland. At the meeting of the Société Médicale s Hôpitaux of Paris on July 7th Professor G. H. Lemoine d M. F. Lapasset reported a case of pancreatitis in mumps hich is of great importance, for it is the first on record in hich a necropsy has been performed. A soldier, a native of lgiers, aged 19 years, was admitted into hospital on Oct. 2nd, 02, suffering from mumps. The only previous illness as malarial fever. The case ran a benign course, the tem- erature not rising above 100·2° F. and becoming normal on e fifth day. On the eighth day the illness appeared to ave terminated but on the evening of the tenth day there as a rigor with a rise of temperature to 103 8° and pain nd swelling in the right testicle. The orchitis rapidly ubsided, the temperature became normal on the fourteenth ay, and the patient was again pronounced convalescent, ut when visited on the morning of the fifteenth day he omplained that he had not slept and that he vomited several times during the night. Although the temperature was normal he appeared to be prostrated. The conjunctivæ showed a slightly icteric tinge. The upper abdomen was tender, especially in the epigastrium and the region of the gall-bladder. Here the patient had a feeling of weight. The spleen was enlarged and tender. The pulse was slow (52) and the axillary temperature was 97·3°. An aperient was given but it was vomited and produced no action of the bowels. On the sixteenth day the icteric tint involved the whole skin and the discolouration of the conjunctivæ was more marked. Vomiting had become more frequent and the intolerance of the stomach was absolute, all liquids being rejected. The hepatic and splenic regions were very painful, with a maximum in the region of the gall-bladder, which organ appeared to be enlarged. The temperature and pulse remained the same. An injection of 1000 grammes of saline solution was ordered in order to provoke diuresis, as the kidneys had ceased to act since the previous day. In the evening the general condition seemed to have improved. Vomiting had occurred only once during the day. 80 grammes of brownish-red urine containing one gramme of albumin per litre and abundance of biliary pigments had been passed. The patient continued to be very prostrate and spoke of his approaching death. In the night the vomiting recurred and was uncontrollable. At first the vomit was black, then it gradually became sanguineous. There was also constipation. On the seventeenth day the hæmatemesis was incessant and the patient lost consciousness. The pulse rose to 120 and the temperature to 101·5° and the jaundice increased in depth. Death occurred on this day. At the necropsy all the tissues had an icteric tinge. The liver did not appear to be enlarged but it was much congested; on section it looked like a "cardiac liver." Some lobules seemed to be in a state of incipient degeneration. The gall-bladder was voluminous and œdematous. This œdema extended as far as the beginning of the common bile duct where an enlarged gland pressed on the latter and appeared mechanically to produce the œdema of the gall-bladder and the icterus. The bile in the gall-bladder was brownish, thick, and very viscid. The stomach contained black fluid; its mucous membrane was spotted with fine ecchymoses which extended as far as the first part of the duodenum. The pancreas was greatly enlarged, œdematous, and congested. It weighed 190 grammes and was of a reddish-grey colour. All the region around the pancreas, the duodenum, and the hilum of the liver contained a large number of swollen lymphatic glands. The spleen was enlarged and weighed 1200 grammes. The kidneys were a little congested and the capsules were adherent in places. Microscopic examination of the liver showed proliferation of the connective tissue surrounding the biliary canaliculi and a number of nodules composed of embryonic cells. The spleen also contained nodules of embryonic cells and its capsule and trabeculæ were thickened. In the kidneys lesions were limited to the convoluted tubes, the cells of which showed signs of granulo-fatty degeneration and the lumen of which was filled with epithelial débris. The cells and acini of the pancreas were abnormally large but the islands of Langerhans were diminished, being compressed by the turgescent tubes. The nuclei of the pancreatic cells stained badly and many of them were vesicular. The complexity of this case is noteworthy. Not only was there epigastric pain which was the principal symptom of the pancreatitis, but the gall-bladder was tender and the spleen was enlarged and tender. The symptoms of grave icterus—hæmatemesis, prostration, subnormal temperature, and elevation of temperature at the time of death—developed. The embryonic nodules found in the liver and spleen and the cellular degenerations are common to all infectious processes. Were these lesions due to the infection of mumps or were they the result of a biliary infection consecutive to the obstruction of the bile duct by the enlarged pancreatic lymphatic glands? The early appearance of the icterus in the case is in favour of the former hypothesis.

MEDICAL APPOINTMENT TO THE METROPOLITAN WATER BOARD.

Dr. Alexander Cruikshank Houston has been appointed to the important post of director of water examinations, Metropolitan Water Board, at a salary of £1000 per annum. Dr. Houston is an Edinburgh graduate and took the degrees of M.B., C.M., in 1889; B Sc. (Public Health) in 1891; and D.Sc. (Public Health) in 1892, being awarded the Gunning Victoria Jubilee Alison prize in public health and medical jurisprudence in the same year. During the past 12 years he has carried out special chemical and bacteriological researches in relation to water-supply for the Local Government Board. His investigations on the subject of lead poisoning by moorland waters (1893-97) are well known and have received favourable notice in our columns. During recent years his work for the Local Government Baord has attracted considerable attention, both in this country and abroad, and his reports on the bacteriology of soils, water, sewage, and the excrement of man and the lower animals have been widely read and appreciated. Dr. Houston has also carried out extensive researches for the London County Council on water-supply, watercress pollution, milk-supply, and disinfection; and from 1898 to 1900 he acted as bacteriologist to the main drainage committee of the Council in connexion with the purification of sewage at Barking and Crossness. During the last five years he has held the important post of bacteriologist to the Royal Commission on Sewage Disposal and has written valuable reports on the land treatment of sewage, the bacteriology of oysters and estuarial waters, and other public health subjects. Dr. Houston has frequently been called in to carry out special investigations for public bodies, his recent experiments on the sterilisation of the Lincoln water-supply being a case in point. No one has devoted more time and labour to the serious and complex problems connected with water-supply than has Dr. Houston and we have on numerous occasions pointed out the value of his work. The Metropolitan Water Board and the consumers of London water are to be congratulated on Dr. Houston's appointment to the most important "water post" that has ever been made either in this country or abroad.

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[1] THE LANCET, Sept. 12th, 1903, p. 772.

EFFECT OF SNAKE POISON ON TRYPANOSOMATA.

Dr. Goebel of the Ghent University Institute of Hygiene and Bacteriology publishes in *La Belgique Médicale* an account of some researches on the effect of cobra poison on trypanosomata. He found that it destroyed them very rapidly at the temperature of the body but much less so at the ordinary temperature of the laboratory, while at zero (C.) it exerted practically no action at all. The effect produced was much the same as that which occurs when cobra poison is brought into contact with the red corpuscles of the blood and the dose required appears to be about the same. Dr. Goebel thinks that there is a singular analogy between the osmotic properties of trypanosomata and red corpuscles.

PERITONITIS IN TYPHOID FEVER DUE TO RUPTURE OF A CHRONIC PYOSALPINX INFECTED BY THE TYPHOID BACILLUS.

IN the *Boston Medical and Surgical Journal* of July 20th Dr. C. L. Scudder has reported a case of peritonitis in typhoid fever due to an unusual cause—rupture of a chronic pyosalpinx acutely infected by the typhoid bacillus. A married woman, aged 38 years, was admitted into hospital on May 20th. About four weeks previously she was taken ill with malaise, cramps in the abdomen, and diarrhœa. She took to bed on the 15th. Excepting the illnesses of childhood she had always been well previously. On admission the abdomen was distended, tympanitic, and somewhat rigid. The temperature was 102·2° F., the pulse was 102, the respirations were 32, and the leucocytes were 9900. On the 22nd rose spots were observed and on the following day the Widal reaction was obtained. On June 5th the temperature was nearly normal and the patient was very comfortable. At 6.30 A.M. on June 8th after a normal action of the bowels she was seized with severe pain in the abdomen, principally in the lower part. After this attack the abdomen was rigid and tender in that region. A chill followed and the temperature rose to 103·6° F. Slight moveable dulness was found in the flanks. The rigidity increased and the number of leucocytes rose from 9000 to 18,000. At noon the temperature was 105° and the pulse was 130. Vaginal examination showed in the left fornix fulness and increased resistance, with a suggestion of bogginess. Laparotomy was performed and thick puriform fluid was found throughout the abdomen. The fluid had not a fæcal odour and there was no gas in the peritoneal cavity. The appendix was normal. The ileum was examined for several feet above the cæcum but no perforation was found. On exploring the pelvis, where the pus was most abundant a left pyosalpinx was found. It corresponded to the tumou felt per vaginam. The salpingitis was chronic; the wall the sac was thick and œdematous and had rupture allowing the escape of its contents into the peritone cavity. Salpingectomy was performed. The abdomen wa flushed with saline solution and a gauze wick and drainag tubes were placed in the pelvis. Recovery followed. Th walls of the tube which was removed were covered wit exudation which on microscopic examination showed fibrous structure and round cell infiltration. The tube yielde a culture of the typhoid bacillus.

UNILATERAL PROPTOSIS AND ŒDEMA OF TH LIDS IN SCARLET FEVER.

IN the *Ophthalmoscope* for May Mr. Louis Werner ha reported a case of scarlet fever attended by an unusua complication—unilateral proptosis and œdema of the lids probably due to thrombosis of the cavernous sinus. Th patient was a boy, aged six years, who made good progre until the ninth day of an attack of scarlet fever. Then th temperature, which had been normal for two days, rose t 101·4° F. and he became drowsy. The right eye wa prominent and the lids were swollen and red. There wa no congestion of the conjunctiva. In a few days th temperature returned to normal but the ocular symptom persisted. Mr. Werner was asked to see the case. On examination there was a bright red blush over the upper li only. The lids were swollen and œdematous, especially the upper lid. The swelling was not tense or indurated and the boy could keep the eye open. No enlarged veins were visible but the lower lid was slightly bluish. Proptosis was very evident. The cornea was clear and the pupil normal in size and reaction. Unfortunately, an ophthalmoscopic examination was not then possible but a few days later, when further improvement had taken place, the fundus was found to be normal. For some weeks slight swelling of the lids occurred at variable intervals. It then disappeared but the proptosis persisted for two months. Complete recovery took place. Orbital complications are very rare in scarlet fever. A few cases of orbital cellulitis with proptosis have been observed and a case of periostitis has been recorded. Dr. Sidney P. Phillips reported three cases of unilateral œdema of the eyelids in scarlet fever complicated by otitis media. The œdema improved concurrently with the otitis media. Dr. Phillips attributed the œdema to thrombosis of the cavernous sinus and Mr. Werner adopts the same hypothesis in his case. Thrombosis might, of course, result from otitis media but primary thrombosis is also possible. Sir William R. Gowers says that primary thrombosis of the cerebral sinuses occurs most frequently in children and may follow any prostrating malady, including the specific fevers. Mr. Werner's patient was very anæmic and debilitated. The interesting points in the case are the absence of otitis media, the long duration of the proptosis after the subsidence of acute symptoms, and the complete recovery without suppuration.

THE UNIVERSITY OF MELBOURNE.

THE University of Melbourne is inviting applications for a new professorship of anatomy, with a salary of £900 per annum and £80 per annum for insurance. Professor H. B. Allen, who has hitherto held the combined chairs of anatomy and pathology, retains the professorship of pathology.

WE regret to announce the death of Dr. John William Ogle, consulting physician to St. George's Hospital, which occurred on August 8th. We hope to publish an extended notice of his career in a future issue.

BRITISH PHARMACEUTICAL CONFERENCE.

THE forty-second annual meeting of the British Pharmaceutical Conference was held at the Hôtel Métropole, Brighton, from July 24th to 28th. This conference is solely concerned with the encouragement of pharmaceutical research and the promotion of friendly intercourse and union amongst pharmacists. It thus differs from the armaceutical Society of Great Britain which is a statutory dy charged with the administration of the Pharmacy Acts d the examination and registration of those who desire to registered under these Acts. The members of the conferce were received by the Mayor of Brighton at the Royal avilion on July 24th and on the following morning the Presient, Mr. W. A. H. Naylor, F.I.C., of London, delivered address[1] on the Standardisation and Storage of Drugs fter which the reading and the discussion of communiations arising from researches were commenced. The conerence was attended by nearly 300 pharmacists and many adies from all parts of the United Kingdom, together with everal colonial pharmacists. Excellent arrangements had een made by the pharmacists of Brighton and Eastbourne to ender the meeting a social success, the round of amuseents including dances, smoking concerts, drives, a trip by ea to Eastbourne, and a whole day excursion to Arundel, he magnificent Sussex seat of the Duke of Norfolk.

Of the 20 papers read before the conference the majority were of purely pharmaceutical interest. The remainder possessed some medical interest, particularly a paper by Professor W. E. DIXON on

The Physiological Standardisation of Drugs, including a Suggested Physiological Standard for Insertion in the next British Pharmacopœia.

Professor Dixon dealt with certain drugs—e.g., ergot, cannabis indica, lobelia, grindelia, hemlock, and the digitalis group, including digitalis, strophanthus, and squill—for all of which there was at present no trustworthy chemical method of analysis. For such drugs the biochemical method of determining the strength was applicable and should be resorted to in order to obtain galenical preparations having a fixity of strength. The drugs which especially required standardising were the members of the digitalis group, ergot, and cannabis indica. It was necessary to apply biochemical tests to the lower animals owing to the difficulty of recognising small effects in man and the danger of the experiments involved. The principal difference in the action of drugs on man and animals occurred with those remedies which attacked the central nervous system. This point was made clear in a table which showed the degree of development of the brain in different animals and the amount of cocaine required to produce convulsions:—

Animal.	Grammes of brain per kilogramme of animal.	Dose in grammes of cocaine per kilogramme of animal required to produce convulsions.
Rabbit	4	0·18
Guinea-pig	7	0·07
Pigeon	8	0·06
Dog	9	0·02
Ape	18	0·012

But on other tissues the difference was not apparent. If a drug attacked the heart of a man in a certain way it attacked the heart of every mammal in precisely the same way; or if the attack was upon glands the type of action was constant in all mammalia. To take one example of this, secretin was a remedy prepared from the duodenum; it increased the flow of pancreatic juice as was the case with no other drug. But secretin prepared from man or dog had precisely the same effect on the pancreas of every vertebrate throughout the animal kingdom, including that of the frog. The principal objection to this type of experiment was that the reagent—namely, the animal—was too sensitive, so that changes in the conditions under which the experiments were performed might lead to some error. However, if due precautions were taken to keep the conditions of experiment as constant as possible this method of standardisation was wonderfully accurate. The members of the digitalis group might be standardised on male frogs, weighing about 25 grammes each. A tincture of the drug to be standardised was diluted with an equal volume of water and injected into the dorsal lymph sac. Six minims of the diluted tincture should kill the frog by stoppage of the heart within an hour. Professor Dixon proposed that three minims should form the standard unit and that all tinctures of digitalis should bear a label stating how many minims went to the unit. Supposing it was found that five minims of a diluted tincture was the maximum lethal dose then this tincture should be diluted with water to bring it down to the standard. If, however, eight minims of a diluted tincture formed the maximum lethal dose then the label should state that the unit corresponded to four minims instead of three minims. This did not necessarily mean that a prescription containing digitalis should differ in any way from a present-day prescription, but the quantities prescribed by the physician would refer to standardised tincture. If the chemist's tincture was not of standard strength he could by a simple proportion sum calculate the necessary quantity of his tincture to correspond to the quantity prescribed. Tincture of strophanthus was invariably more toxic than that of digitalis. In treatises on medicine it was stated that in certain cases of cardiac disease where digitalis failed to give relief strophanthus might succeed. The explanation was that strophanthus preparations were more powerful than those of digitalis and were absorbed more quickly into the system. But as tincture of strophanthus had the same dose as that of digitalis it should have an equal toxicity. It might be standardised in precisely the same way as digitalis. This would generally require the dilution of the tincture as at present prepared to bring it down to the same standard. Tincture of squill might be standardised in the same way. It was usually a little less toxic than digitalis. This method of assaying could be controlled still more accurately upon rabbits and it was generally advisable that such control experiments should be performed. Professor Dixon deferred the publication of the details of these experiments till later, as well as the methods of standardising the other preparations of this group. Ergot was another drug that varied enormously in its activity. Professor Dixon recently obtained six specimens of the liquid extract from six different sources. Two of these were moderately active, two possessed a feeble action, and the remaining two either had no action at all or their effect was so feeble as to be absolutely worthless for therapeutic use. At the present time the only method of standardising ergot that had been adopted was the injection of the drug into roosters. If the dose was sufficiently large they developed gangrene on the comb and wattles after the necessary interval of time. This method was open to several objections, of which the most important, perhaps, was the difficulty of determining the miminal dose that would produce gangrene. In the opinion of Professor Dixon it was doubtful whether the production of gangrene was in any way proportional to, or indicative of, the therapeutic action required when ergot was administered. The gangrene was not due to simple constriction of the vessels but to a secondary degeneration of the vessels which resulted in the complete blocking of the arterioles. Professor Dixon found, however, that the rise in blood pressure in mammals was proportional to the effect of ergot upon the uterus. This rise was mainly due to constriction of the vessels. Hence, by measuring the increase of blood pressure under fixed conditions they possessed a method of standardisation which was rapid, trustworthy, and proportional both to the vaso-constriction and the effect on the uterus, which were the two principal uses of ergot in therapeutics. The experiments should be performed on rabbits, conforming as nearly as possible to a standard weight and anæsthetised with urethane, of which 1·25 grammes per kilogramme body-weight were necessary to complete anæsthesia. In this way all the disturbing influences of a volatile anæsthetic were avoided. The blood pressure might be taken from the carotid artery and the liquid extract of ergot injected into the femoral vein. The injection should occupy a definite fixed time and the fluid should be at the temperature of the body. Experiments performed in this way afforded a sure method of determining to a fine degree of accuracy the relative activity of different specimens of ergot. Professor

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[1] Vide THE LANCET, July 29th, 1905, p. 304.

Dixon deferred to a future communication suggestions as to the exact amount of ergot necessary to produce the standard rise in blood pressure. Cannabis indica was another drug which varied greatly in toxicity, owing to the varying climatic conditions in which the plant was grown. It could not be assayed on animals with the same degree of accuracy as the drugs previously mentioned because the action was on the central nervous system and because the degree of action must be gauged by the experimenter and could not be recorded. The tincture should be diluted with an equal volume of water and ten minims injected subcutaneously into a cat about two and a half kilogrammes in weight. In an ordinarily active sample this animal soon began to show physical signs of intoxication. The pupils dilated, the reflexes were increased, and the gait became exceedingly awkward, the animal rolling from side to side and showing other signs of incoördination. Quite a number of tinctures on the market, even in four times this dosage, produced no effect at all, whilst a few others produced a greater degree of intoxication. Lobelia could be standardised very accurately by its effect upon blood pressure and its subsequent paralytic action on certain nerve cells. Professor Dixon had often found lobeline, like many of the so-called active principles derived from digitalis, to be quite inactive. In the case of opium it might occasionally be necessary to test for the presence of excessive amounts of alkaloids other than morphine. It was well known that some specimens of opium produced excitement and increased reflexes due to the presence of excessive quantities of narcotine. In such cases the injection of the opium into a frog led very quickly to convulsions and afforded a test of the usefulness of the opium. In conclusion Professor Dixon pointed out that pharmacological methods of standardisation should only be resorted to when chemical methods were inadequate. In the examples given it was the only method available.

A paper was read by Mr. STANLEY READ, L.D.S. R.C.S. Eng., on

The Composition of Dentifrices as affected by Recent Investigation in Dental Science.

Mr. Read in his paper put forward the view, based on the researches of Dr. Miller of Berlin, that the use of antiseptic substances in dentifrices was wrong in principle as they were likely to destroy the protective bacteria which were normally present in the mouth as well as those which produced dental caries. On this view a dentifrice was regarded merely as a mechanical agent for removing stains.

Mr. D. B. DOTT, F.I.C., contributed a paper on

Mercurio Zinc Cyanide.

Mr. Dott drew attention to the variableness of this substance and gave reasons for believing that it was not a definite compound. He suggested the adoption of an arbitrary standard of strength, say 20 per cent. of mercuric cyanide.

Mr. W. HARRISON MARTINDALE, Ph.D. Marburg, gave an interesting summary of

Recent Work on Radio-activity.

This paper included an account of experiments which had been made on the internal use of radium for therapeutic purposes. Other radio-active salts, notably those of uranium and thorium, which had the advantage of comparative cheapness, were dealt with by Dr. Martindale.

A valuable paper was contributed by Mr. A. W. GERRARD, dealing with

Capsicum and its Preparations.

This paper was mainly of pharmaceutical interest but one important fact may be referred to—viz., that alcohol was the best solvent of the active constituents of capsicum.

Another interesting paper read at the conference was a preliminary communication from Mr. H. FINNEMORE, A.I.C., and Mr. H. DEANE, B.Sc., A.I.C., entitled

Castor Oil (Part I.).

This paper consisted of a summary of work that had been done on castor oil by previous investigators. From this it appeared that the therapeutic activity of the oil was due to the fatty acids.

Mr. H. WIPPELL GADD, F.C.S., read a preliminary paper on

The Chemistry and Pharmacy of the Leaves of Viola Odorata.

From the experiments described in the paper Mr. Gadd concluded that any therapeutic activity which violet leaves might possess was due either to a glucoside or to the products of its decomposition or to a natural ferment associated with it. About three and a quarter ounces of the leaves were infused in a pint of boiling water and the infusion taken internally or applied externally as a fomentation. The leaves which were most sought after at the present time were those of a cultivated variety of the *odorata* group and known to horticulturists as the "Princess of Wales." He found that this variety had a stronger taste than the wild violets possess.

In a discussion which followed the reading of this paper Mr. G. CLARIDGE DRUCE, M.A. Oxon., curator of the botanic gardens at Oxford, pointed out that the reputation of violets for the treatment of malignant growths was founded on the use of wild violets at least as far back as the days of James I. It was desirable, therefore, that in any inquiry into the subject wild violets should be used, such as had been used for centuries, and not a recent cultivated variety as was employed at the present time.

MEDICINE AND THE LAW.

The Cheap Pistol Again.

SINCE the passing of the Pistols Act, 1903, accidents of a dangerous or fatal character resulting from boys playing with revolvers bought in toy shops have no doubt been less frequent than formerly and crimes perpetrated with weapons which anyone could buy without restriction for a few shillings may have diminished in number. At the same time neither of these two classes of avoidable death and injury can be said to have disappeared and in instances where shopkeepers have been prosecuted for not complying with the terms of the Act their usual excuse has been ignorance of the law, which may not be a legal defence but which usually serves to mitigate the penalty imposed. At Bow-street recently, for example, a shopkeeper in the Euston-road pleaded ignorance of the law when summoned for selling a revolver to a boy under the age of 18 years. This youth, who was aged 14½ years, had been told that he must have a licence and had gone to the nearest post-office where he obtained one without difficulty, which points to an omission in safeguarding the public. Many lads under 18 years of age shoot but there can be no reason why their licences should be supplied directly to them instead of on the authority and responsibility of a parent or guardian. The lad then proceeded to write to the Commissioner of Police and to ask that authority whether he would be justified in shooting anyone who insulted him. His letter, which might suggest somewhat unusual mental conditions, had the effect of provoking inquiry and the prosecution was instituted, with the result that the vendor of the pistol was fined 40*s.* with costs. Apparently he was aware of the need for a licence on the part of the customer but did not know of the age limit. Surely, however, there is no reason why it should not be impossible for any tradesman even to suggest ignorance of a law which particularly affects himself. Every shopkeeper's door must be passed by a policeman from time to time and a warning given by the police would readily afford information as to an Act of this kind within a day or two of its being passed, while the statute itself only occupies a couple of printed pages and a copy of it costs 1*d.* or 1½*d.* Moreover, it provides for the keeping of a book in which the sale of pistols is to be recorded and this is open to inspection by any officer of the police or of the inland revenue. The Act must necessarily be useless if no effort is made to enforce it until a breach of it is brought to the notice of the authorities.

Common Lodging-houses further Defined.

The appeal in the case of Gilbert *v.* Jones, heard by the Lord Chief Justice, Mr. Justice Lawrance, and Mr. Justice Ridley in the Divisional Court on August 2nd, will strengthen the hands of local authorities in dealing with certain charitable institutions which at any time might have become otherwise a source of danger to the health of the community. The decision will affect one or two other prosecutions which have been adjourned in order to await it, the facts being that Father Gilbert, a benevolent Roman Catholic clergyman, had opened a night refuge for the most destitute classes of the community without obtaining a licence as for a common lodging-house. There was no suggestion that the house was not admirably conducted from a sanitary point of view but the London County Council maintained nstitutions of this class must under the law be d as common lodging-houses and as such subject to ion, it being obvious that if improperly kept from a y point of view the circumstance that no payment ken from the inmates would make no difference to obability of the spread of disease. The only point by the appellant, who had been convicted by Cluer of the offence alleged, consisted in the e of all payment. It was held once upon a in the case of Salvation Army shelters, where a sum was charged but where no profit was made by my, that these were not common lodging-houses; this, er, had been overruled long before Mr. Gilbert led by a court over which Lord Russell of Killowen led. The court therefore had to decide whether there ny distinction to be made between a night refuge or ng house where the lodgers paid a trifle, as in the case he Salvation Army refuges, and one in which there no charge made of any kind, and in which, as quite fairly argued, the lodgers might be looked as the guests of those maintaining the institu- Lord Alverstone delivered the judgment of the t upholding the conviction. He was unable to draw the nction which he was invited to, between the charitable e where a small payment was exacted and that in which e was none at all, and he pointed out that the decision lved no interference whatever with any charitable work ied out under proper sanitary conditions. In dismissing appeal he granted an application for costs on behalf of London County Council who, as Mr. Avory, K.C., it, were, in fact, the ratepayers of London and none uld question the justice of this. It is unreasonable of ritable persons dealing with difficult social and sanitary blems to maintain that because their own work is ond reproach they, and with them others who may less scrupulous, should be beyond the reach of all ticism. Certainly they have no right to expect to have ir errors of judgment paid for by the ratepayers.

Accident or Disease?

The Workmen's Compensation Acts, as lawyers have good son gratefully to remember, while providing for the pay- nt of compensation to workmen incapacitated by "acci- nt" omitted to define the manner in which this word was be interpreted. Such mishaps as rupture when lifting avy weights and infection with anthrax have been declared various times to be "accidents," and the tendency has doubt been to extend the meaning of the word beyond e sense in which it is used in everyday life. At loomsbury county court recently a man claimed as for an ccident compensation for his loss of employment when ffected by caisson disease, the defendants being the contractors for the new tube railway from Charing Cross to ampstead. Judge Bacon, after hearing argument and the uthorities upon the subject, refused to hold that caisson isease was an accident but presumably the Court of Appeal nd possibly the House of Lords will be asked to review his ecision. It would be interesting to ascertain the legal xpenses that might have been saved by a fuller definition in he original Bill upon this point alone. The question is of some interest to medical men who are the most important witnesses in compensation cases of this kind and who naturally find it useful to know when treating a case whether they will some day have to depose to symptoms and treatment in a court of law.

LITERARY INTELLIGENCE.—A work on Criminal Responsibility will shortly be issued from the Oxford University Press. The author is Dr. Charles A. Mercier and the book is intended to complement that by Sir FitzJames Stephen. Dr. Mercier points out that the question of criminal responsibility should be considered anew by a psychologist—Sir FitzJames Stephen was handicapped by insufficient knowledge of the work of the mind in health and disease—and that in 20 years our knowledge of insanity has advanced.—A book is to be published in the autumn by the De La More Press entitled "A First German Course for Science Students," and written by Professor H. G. Fiedler and Dr. F. E. Sandbach. The book assumes no previous knowledge of German and consists of German passages, the vocabulary of which is strictly scientific. It is printed in the English characters and illustrated and contains a brief outline of grammar and a vocabulary.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the General Sanitary Circumstances and Administration with Special Reference to Infectious Diseases of the County Borough of Hanley, by DR. S. MONCKTON COPEMAN.[1]—The borough of Hanley (population 63,889) in the Staffordshire pottery district presents several interesting problems in public health administration. On the question of housing Dr. Copeman shows that although there is sufficient accommodation for the working classes who are able and willing to pay for it, much difficulty arises with regard to a considerable proportion of the poorest class, largely Irish, who apparently cannot afford to pay a higher rent than 2*s.* 6*d.* a week. People of the latter class inhabit a set of areas which are extremely insanitary in their condition but with which it is evidently not easy to deal under the Housing of the Working Classes Acts. Proposals for municipal dwellings for the very poor have been made but it would probably be found impossible to supply such dwellings without entailing a considerable burden on the local rates. Another special difficulty in Hanley results from the frequent subsidences of the surface of the ground on which the town is built, due to sinking of old mine workings. In some instances water mains have been broken from this cause and bacteriological evidence has been obtained that objectionable pollution of the water supplied to certain areas of the borough has resulted from the fractures. For similar reasons sewers often need renovation or repair. In the course of five years it has been necessary to open up sewers for repairs of one or another kind as often as 704 times and on several occasions the sewers in question have had to be relaid wholly or to be abandoned in consequence of the extent of the settlement. Gas mains are also frequently affected by these subsidences. The steepness of gradients in certain of the sewers has rendered them liable to damage from excessive pressure in time of rain. A complete "separate system," dealing with storm water by separate sewers, is now contemplated. Large new works of sewage-disposal by means of tanks and continuous filters are being constructed. House drainage is often defective, the pipes until a few years ago having been jointed merely with clay. Another serious defect in the borough consists in the accumulations of house refuse which are allowed to take place in the numerous large middens. Where moveable ashbins have been provided their contents are emptied not more often than once a week. Frequently in the process of emptying receptacles for house refuse it is necessary to carry the refuse through the living rooms of the house, while it is a common practice to dump the collected material in heaps either in the street or alongside the footpaths to await the arrival of the scavenger's cart. "This method," Dr. Copeman observes, "would be sufficiently objectionable were the process carried on early in the morning. But it not unfrequently happens, as I was informed, that the cart may make its rounds in the busiest hours of the day or at a time when children are playing about in the streets between school hours." Various methods of disposal of excrement exist—Rochdale pails, Duckett's and Fowler's slop-water closets, cesspit privies, and water-closets with or without flushing cisterns. The supply of water to closets which possess flushing-apparatus is often cut off by the water company for non-payment of rates and in consequence a great many flushing cisterns have fallen into disuse. Dr. Copeman draws attention to the advantage of the Hanley public abattoir and considers that it would be a most desirable reform to enlarge it and to abolish the private slaughter-houses which still exist in the borough. For some years the general death-rate in Hanley has remained at a higher figure than the average for the 76 greater towns included in the Registrar-General's weekly returns and the same has been true for the infantile mortality. To a large extent this higher death-rate has been due to continued and excessive prevalence of infectious diseases—diphtheria, enteric fever, measles, and summer diarrhœa—during recent years. The heavy infantile mortality, in the opinion of Mr. J. Clare, the borough medical officer of health, is attributable to the excessive employment of adult female labour in the Potteries, which leads to bad feeding by hand and to many children being put out to nurse. Dr. Copeman points out the various ways in which the pollution of soil in the neighbourhood of the dwellings probably conduces to the propagation of the infection of summer diarrhœa and of enteric fever. Between 200 and 500 cases of diphtheria have been reported annually since 1899 and the average case mortality from this disease during the past six years is no less than 20 per cent. Dr. Copeman discusses the share of schools in spreading infection and draws attention to the manner in which epidemic diphtheria in recent years has slowly spread from one to another of the adjoining townships in the Potteries. In making recommendations attention is drawn to the need for revision of by-laws and the report states that the long delay in dealing with this matter has been largely due to overwork of the borough surveyor who in addition to his numerous other duties has been acting as engineer to the new electrical installation of the borough. Municipal enterprise in such matters as electric light may be well enough but obviously it should not be so indulged in as to encourage neglect of important measures of public health. Hanley has the population and the dignity of a county borough and Dr. Copeman strongly recommends that the town council should follow the example of the majority of such boroughs and pay a salary to its medical officer of health which will enable him to devote the greater part of his time to official duties. This step would obviously place the sanitary service of the town in a much better position for effective work than it at present occupies.

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[1] London: Wyman and Sons, Fetter-lane. Edinburgh: Oliver and Boyd. Dublin: E. Ponsonby. No. 217. Price 1s. 6d.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8719 births and 5080 deaths were registered during the week ending August 5th. The annual rate of mortality, which had been 12·9, 13·4, and 15 0 per 1000 in the three preceding weeks, further rose last week to 17·0 per 1000. In London the death-rate was 15·6 per 1000, while it averaged 17·6 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 6·0 in King's Norton, 7·4 in Hornsey and in Reading, 7·6 in Handsworth (Staffs), 7·9 in Bournemouth, 9·0 in Walthamstow, in Northampton, and in Great Yarmouth, 9·2 in Croydon, and 9·6 in Leyton; the highest rates were 22·8 in West Ham, 22·9 in Warrington, 23·2 in St. Helens, 23·5 in Wigan, 23·7 in Grimsby, 24·1 in Bootle, 24·3 in Tynemouth, 24·4 in Stockport, 26·9 in West Bromwich, 28·4 in Sheffield, and 62·2 in Rhondda.[1] The 5080 deaths in these towns last week included 1507 which were referred to the principal infectious diseases, against 486, 612, and 1101 in the three preceding weeks; of these 1507 deaths, 1247 resulted from diarrhœa, 77 from whooping-cough, 71 from measles, 44 from diphtheria, 39 from scarlet fever, 28 from "fever," and one from small-pox. No death from any of these diseases was registered last week in Burton-on-Trent, and while Croydon, Hornsey, Hastings, Brighton, Bournemouth, King's Norton, Bury, Swansea had low death-rates from the principal infectious diseases, the highest rates were recorded in West Ham, Grimsby, Birkenhead, Liverpool, Bootle, Wigan, Sheffield, and Rhondda. The greatest proportional mortality from measles occurred in Barrow-in-Furness, ; from scarlet fever in Blackburn; from whooping-cough in West Ham, Oldham, and Rhondda; and from diarrhœa in West Ham, Grimsby, Birkenhead, Liverpool, Bootle, Wigan, Sheffield, and Rhondda. The mortality from diphtheria and from "fever" showed no marked excess in any of the large towns. One fatal case of small-pox was registered in Birmingham but none in any other of the 76 towns. The number of small-pox cases remaining under treatment in the Metropolitan Asylums Hospitals, which had been four, three, and three at the end of the three preceding weeks, was two at the end of last week; three new cases were admitted during the week, against two, none, and none in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, August 5th, was 2632, against 2520, 2485, and 2550 on the three preceding Saturdays; 366 new cases were admitted during the week, against 356, 304, and 352 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 104, 117, and 116 in the three preceding weeks, fell to 111 last week, and were one below the number in the corresponding period of last year. The causes of 46, or 0·9 per cent., of the deaths in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Bristol, Salford, Leeds, and in 47 other smaller towns; while the largest proportions of uncertified deaths were registered in Birmingham, Leicester, Liverpool, Manchester, Sheffield, Gateshead, and Newcastle-on-Tyne.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 14·3, 15·2, and 15·3 per 1000 in the three preceding weeks, fell to 14·8 per 1000 during the week ending August 5th, and was 2·2 per 1000 below the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 8·7 in Aberdeen and 10·2 in Leith to 16·8 in Perth and 18·3 in Paisley. The 496 deaths in these towns last week included 59 which were referred to diarrhœa, 15 to measles, 14 to whooping-cough, two each to scarlet fever, diphtheria, and "fever," but none to small-pox. In all 94 deaths resulted from these principal infectious diseases last week, against 55, 61, and 66 in the three preceding weeks. These 94 deaths were equal to an annual rate of 2·8 per 1000, which was 2·2 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 7·22 and 39, further rose last week to 59, of which 36 occurred in Glasgow, nine in Edinburgh, and four in Leith. The deaths from whooping-cough, which had been 25, 12, and 14 in the three preceding weeks, were again 14 last week, and included five in Edinburgh, four in Glasgow, and two in Dundee. The fatal cases of measles, which had been 19, 21, and eight in the three preceding weeks, rose to 15 last week, of which ten were registered in Glasgow and two in Edinburgh. The deaths from diphtheria, which had been one, three, and five in the three preceding weeks, declined to two last week, both deaths having occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 65, 62, and 70 in the three preceding weeks, fell last week to 48, and were one in excess of the number in the corresponding period of last year. The causes of 13, or 2·6 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 19·7, 20·1, and 20·8 per 1000 in the three preceding weeks, further rose to 21·2 per 1000 during the week ending August 5th. During the past four weeks the death-rate has averaged 20·5 per 1000, the rates during the same period being 13·6 in London and 15·9 in Edinburgh. The 154 deaths of persons belonging to Dublin registered during the week under notice were three in excess of the number in the preceding week and included 29 which were referred to the principal infectious diseases, against 17, 20, and 22 in the three preceding weeks; of these, 25 resulted from diarrhœa, two from diphtheria, and two from whooping-cough, but not any from small-pox, measles, scarlet fever, or "fever." These 29 deaths were equal to an annual rate of 4·0 per 1000, the mean rates last week from the principal infectious diseases being 4·2 in London and 2·8 in Edinburgh. The fatal cases of diarrhœa, which had been 14, 18, and 20 in the three preceding weeks, further rose last week to 25. The 154 deaths in Dublin last week included 52 of children under one year of age and 29 of persons aged 60 years and upwards; the deaths of infants exceeded the number in the preceding week by one, and those of elderly persons showed an increase of six deaths. Two inquest cases and three deaths from violence were registered; and 53, or more than a third, of the deaths occurred in public institutions. The causes of seven, or 4·5 per cent., of the deaths registered in Dublin last week were not certified.

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[1] Excluding 79 deaths due to the colliery explosion at Wattstown, the death-rate in Rhondda during the week would have been 29·2.

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON.

(*Specially compiled for* THE LANCET.)

Cities and Boroughs.	Estimated population in the middle of 1905.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,684,794	4	1469	527	—	118	—	16	307	—	2441	6·8	—	91	32	24	78	—	17	1	361	604	1·7	4270	11·9	112
West Districts.																										
Paddington	147,935	—	30	12	—	5	—	—	13	—	60	5·3	—	5	—	—	2	—	1	—	9	17	1·5	113	10·0	98
Kensington	180,083	—	30	14	—	4	—	—	12	—	60	4·3	—	5	—	2	2	—	1	—	9	19	1·4	145	10·5	142
Hammersmith	119,037	—	26	18	—	5	—	—	7	—	56	6·1	—	3	1	—	1	—	1	—	7	13	1·4	91	10·0	105
Fulham	167,210	—	92	18	—	5	—	1	10	—	126	10·4	—	4	2	2	5	—	—	—	20	33	2·7	176	14·6	151
Chelsea	74,496	—	9	7	—	2	—	1	7	—	26	4·5	—	—	1	—	—	—	—	—	3	4	0·7	67	11·7	89
City of Westminster	175,606	—	21	6	—	4	—	2	6	—	39	2·9	—	6	—	—	1	—	—	—	3	10	0·7	149	11·1	87
North Districts.																										
St. Marylebone	129,453	—	17	13	—	5	—	—	12	—	47	4·7	—	3	1	1	2	—	1	1	8	17	1·7	127	12·8	72
Hampstead	88,142	—	20	10	—	1	—	—	4	—	35	5·2	—	1	1	—	—	—	—	—	1	3	0·4	56	8·3	92
St. Pancras	236,183	—	43	20	—	2	—	—	10	—	75	4·1	—	5	—	—	2	—	1	—	11	19	1·0	207	11·4	102
Islington	342,994	1	75	36	—	11	—	1	10	—	134	5·1	—	1	1	3	7	—	3	—	12	27	1·0	253	9·6	95
Stoke Newington	62,828	—	16	10	—	1	—	—	2	—	29	7·2	—	—	—	—	—	—	—	—	—	—	—	48	11·8	117
Hackney	223,479	—	76	35	—	9	—	1	24	—	145	8·3	—	3	—	3	2	—	1	—	27	36	2·1	202	11·5	140
Central Districts.																										
Holborn	56,481	—	2	1	—	2	—	—	2	—	7	1·6	—	1	—	—	—	—	—	—	5	6	1·4	54	12·5	84
Finsbury	98,207	1	34	13	—	8	—	—	7	—	63	8·4	—	6	—	1	3	—	1	—	13	24	3·2	131	17·4	138
City of London	22,425	—	4	—	—	—	—	—	—	—	4	2·3	—	—	—	—	—	—	—	—	1	1	0·6	24	14·0	42
East Districts.																										
Shoreditch	116,665	—	101	8	—	1	—	1	11	—	122	13·6	—	4	1	—	7	—	—	—	48	60	6·7	205	22·9	317
Bethnal Green	130,401	1	65	19	—	3	—	1	14	—	103	10·3	—	1	2	3	2	—	1	—	15	24	2·4	144	14·4	161
Stepney	305,466	—	161	31	—	10	—	2	39	—	243	10·4	—	4	3	1	8	—	4	—	48	68	2·9	320	14·0	116
Poplar	170,280	—	73	68	—	3	—	1	12	—	157	12·0	—	2	3	3	6	—	1	—	21	36	2·8	191	14·6	134
South Districts.																										
Southwark	203,528	—	65	21	—	7	—	2	16	—	111	6·9	—	3	2	2	2	—	1	—	13	23	1·4	197	12·3	112
Bermondsey	129,006	—	43	14	—	2	—	—	10	—	69	7·0	—	3	—	—	2	—	—	—	14	19	1·9	135	13·6	112
Lambeth	313,045	—	86	46	—	7	—	—	19	—	158	6·6	—	5	4	1	9	—	—	—	26	45	1·9	307	12·8	88
Battersea	177,532	—	60	23	—	1	—	1	8	—	93	6·8	—	4	4	—	5	—	—	—	11	24	1·8	140	10·3	97
Wandsworth	265,392	—	84	25	—	8	—	1	16	—	134	6·6	—	11	3	1	4	—	—	—	9	28	1·4	201	9·9	96
Camberwell	271,240	—	105	15	—	3	—	—	15	—	138	6·6	—	3	1	—	2	—	—	—	6	12	0·6	203	9·8	68
Deptford	114,495	1	52	10	—	2	—	1	5	—	71	8·1	—	3	1	—	1	—	—	—	5	10	1·1	114	13·0	96
Greenwich	103,493	—	18	4	—	5	—	—	8	—	35	4·4	—	2	—	—	—	—	—	—	8	10	1·3	86	10·8	110
Lewisham	144,420	—	36	10	—	2	—	—	4	—	52	4·7	—	1	—	1	2	—	—	—	3	7	0·6	76	6·9	58
Woolwich	125,372	—	25	20	—	—	—	—	4	—	49	5·1	—	2	1	—	1	—	—	—	5	9	0·9	108	11·2	75
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

VITAL STATISTICS OF LONDON DURING JULY, 1905.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious disease it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·8 per 1000 of the population, estimated at 4,684,794 persons in the middle of the year. In the three preceding months the rates had been 5·6, 6·2, and 6·8 per 1000 respectively. The lowest rates last month were recorded in Kensington, the City of Westminster, St. Pancras, Holborn, the City of London, and Greenwich; while the highest rates occurred in Fulham, Shoreditch, Bethnal Green, Stepney, and Poplar. Small-pox was less prevalent than it had been in the preceding month; of the four cases notified during July one each belonged to Islington, Finsbury, Bethnal Green, and Deptford. The Metropolitan Asylums hospitals contained three small-pox patients at the end of last month, against 16, nine, and four at the end of the three preceding months; the weekly admissions averaged one, against four, two, and two in the three preceding months. The prevalence of scarlet fever was slightly greater than in the preceding month; among the various metropolitan boroughs this disease was proportionally most prevalent in Fulham, Shoreditch, Bethnal Green, Stepney, Poplar, Camberwell, and Deptford. The number of scarlet fever patients in the Metropolitan Asylums hospitals, which had been 2152, 2236, and 2444 at the end of the three preceding months, had further risen to 2527 at the end of last month; the weekly admissions averaged 338, against 266, 302, and 301 in the three preceding months. Diphtheria was slightly less prevalent during July than in the preceding month; the greatest proportional prevalence of this disease occurred in Stoke Newington, Hackney, Stepney, Poplar, and Woolwich. The Metropolitan Asylums hospitals contained 785 diphtheria patients at the end of July, against 719, 684, and 715 at the end of the three preceding months; the weekly admissions averaged 118, against 83, 89, and 111 in the three preceding months. The prevalence of enteric fever was considerably greater than in the preceding month; among the various metropolitan boroughs this disease was proportionally most prevalent in Paddington, Chelsea, St. Marylebone, Hackney, Shoreditch, Bethnal Green, and Stepney. The number of enteric fever patients remaining under treatment in the Metropolitan Asylums hospitals at the end of last month was 94, against 65, 80, and 78 at the end of the three preceding months; the weekly admissions averaged 17, against 11, 14, and 10 in the three preceding months. Erysipelas was proportionally most prevalent in Paddington, Chelsea, St. Marylebone, Hackney, Shoreditch, Bethnal Green, and Stepney. The 16 cases of puerperal fever notified during the month included two in the City of Westminster, two in Stepney, and two in Southwark.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in public institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ending July 29th the deaths of 4279 persons belonging to London were registered, equal to an annual rate of 11·9 per 1000; in the three preceding months the rates had been 15·1, 14·0, and 12·1 per 1000. The rates last month ranged from 6·9 in Lewisham, 8·3 in Hampstead, 9·6 in Islington, 9·8 in Camberwell, and 9·9 in Wandsworth, to 14·0 in the City of London and in Stepney, 14·4 in Bethnal Green, 14·6 in Fulham and in Poplar, 17·4 in Finsbury, and 22·9 in Shoreditch. The 4279 deaths from all causes in London last month included 604 which were referred to the principal infectious diseases; of these, 91 resulted from measles, 32 from scarlet fever, 24 from diphtheria, 78 from whooping-cough, 17 from enteric fever, one from ill-defined pyrexia, and 361 from diarrhœa, but not any from small-pox or from typhus fever. No death from any of these diseases was recorded in Stoke Newington; among the metropolitan boroughs they caused the lowest death-rates in Chelsea, the City of Westminster, Hampstead, the City of London, Camberwell, and Lewisham; and the highest rates in Fulham, Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar. The 91 deaths from measles were but half of the correct average number; among the various metropolitan boroughs this disease was proportionally most fatal in Paddington, the City of Westminster, Finsbury, Shoreditch, and Wandsworth. The 32 cases of scarlet fever were 14 below the average for the corresponding periods of the ten years; the greatest proportional mortality from this disease occurred in Fulham, Bethnal Green, Poplar, Lambeth, and Battersea. The 24 deaths from diphtheria showed a decline of 97 from the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Kensington, Fulham, Hackney, Bethnal Green, and Poplar. The 78 deaths from whooping-cough were 53 below the average number in the corresponding periods of the ten preceding years; this disease showed the greatest proportional mortality in Fulham, Islington, Finsbury, Shoreditch, Stepney, Poplar, Lambeth, and Battersea. The 18 fatal cases of "fever" showed a decline of 15 from the corrected average number; four of the deaths belonged to Stepney, three to Islington, and two to St. Marylebone. The 361 deaths from diarrhœa were 291 below the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Fulham, Hackney, Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was more than 45 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 112 per 1000. The lowest rates of infant mortality were recorded in St. Marylebone, Holborn, the City of London, Camberwell, Lewisham, and Woolwich; and the highest rates in Kensington, Fulham, Hackney, Finsbury, Shoreditch, and Bethnal Green.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon E. H. H. de Courtmacsherry, to Royal Naval Engineering College, Keyham. Surgeons: H. F. Iliewicz to the *Powerful*; J. Barry to the *Centurion*; G. E. Kennedy to the *Royal Oak*; A. J. Pickthorn to the *Ocean*; and W. P. Dyer and C. R. Sheward to the *President*, for three months' study at West London Hospital.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 3rd Kent (Royal Arsenal): Bernard Hudson to be Surgeon-Lieutenant (dated July 8th, 1905).

Rifle: 1st Volunteer Battalion the Suffolk Regiment: Herbert Mayris Sylvester to be Surgeon-Lieutenant (dated August 1st, 1905). 3rd Volunteer Battalion the Bedfordshire Regiment: Surgeon-Captain J. W. Bone resigns his commission (dated August 1st, 1905). 3rd Volunteer Battalion the East Surrey Regiment: Richard William Brimacombe to be Surgeon-Lieutenant (dated August 1st, 1905). 1st Volunteer Battalion the Gordon Highlanders: Surgeon-Major G. M. Edmond resigns his commission (dated August 1st, 1905). The Prince of Wales's Own 12th Middlesex (Civil Service): Acting Surgeon Robert Welsh Branthwaite, Cadet Corps (Civil Service), attached to the Prince of Wales's Own 12th Middlesex (Civil Service) Volunteer Rifle Corps, to be Surgeon-Lieutenant and to be borne as Supernumerary to the Establishment (dated July 31st, 1905). 14th Middlesex (Inns of Court): The undermentioned officer resigns his commission:—Surgeon-Captain F. C. Wallis (dated July 17th, 1905).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major A. B Wade to be Surgeon-Lieutenant-Colonel (dated July 29th, 1905) Surgeon-Lieutenant-Colonel D. E. Flinn, having resigned his commission in the Volunteers, ceases to belong to the Army Medical Reserve of Officers (dated August 5th, 1905).

OUR ARMY MEDICAL SERVICE.

The following is an extract from Lord Roberts's address on Imperial defence on August 1st at a special meeting of members of the London Chamber of Commerce at the Mansion House, as reported in the *Times*, August 2nd, 1905:

> Alarming as the figures I have quoted are, they only apply to the combatant branch of the army; there are other important branches upon the efficiency of which the success of a campaign in no small degree depends. One very important branch is the medical. There

is a great outcry in this country during the South African war when became known that the number of medical officers and nurses was sufficient and that there was a lack of proper hospital equipment id appliances. Civil surgeons and nurses were hurriedly entrained, dditional field hospitals were despatched, and the timely aid afforded by rivate persons was eagerly accepted. But the fact remains that for the rst few months of the war the medical arrangements were quite unequal o cope with the strain put upon them. For this I do not think anyone an be blamed. Certainly not the medical officers, who were most evoted and untiring in their endeavours to overcome the enormous ifficulties with which they had to contend. It had been generally ccepted that the *maximum* strength of any force despatched from this ountry would not exceed two army corps—say, 75,000 men—whereas the rce actually employed amounted to between 300,000 and 400,000 scattered ver a vast area with inadequate rail transport, and for the greater part ithout roads. But it will not be possible on any future occasion to ake allowances for failure in the medical arrangements. We have een taught by sad experience that we must be prepared for a much rger force being sent into the field than was contemplated before the outh African war and a much larger percentage of disease. Yet at resent we are not much better off as regards medical requirements han we were in 1899; for although the Royal Army Medical Corps was ncreased by 125 officers and 1200 other ranks under Mr. Brodrick's *égime*, out of its own establishment it can now only provide for an xpeditionary force 55,000 strong. It has been proposed to supplement the *personnel* by the addition of 45 per cent. of civil surgeons and 7 per cent. of civil subordinates, which would provide for a force 3,000 strong; and certain further proposals have been made by the dvisory Board which if adopted would enable the Royal Army Medical orps to deal with a force 140,000 strong. But both these proposals are till only under consideration, nothing has been done, and, as matters ow stand, the balance of any larger force than 55,000 would have to ake the field without any properly trained establishment whatever. No help could possibly be afforded to the army in India, which would e sadly in need of medical aid in the event of a prolonged war.

Correspondence.

"Audi alteram partem."

MISTAKES IN THE DIAGNOSIS OF INFECTIOUS DISEASE.

To the Editors of THE LANCET.

SIRS,—The statement of the chairman of the statistical committee of the Metropolitan Asylums Board last week and the pointed prominence given to it by the press (with respect to the 2000 mistakes and loss of £12,000 of the ratepayers' money), on the face of it implies, and is no doubt intended so to do, a grave reflection on the competency of the London medical men and draws marked attention to their inability to diagnose correctly the various infectious disorders to which they may in their daily round be called and the consequences thereof to the public. I am willing to acknowledge that it is unfortunate so many should have occurred and that not only has the money been to all intents and purposes wasted but also that the patients have been needlessly brought into contact with diseases which they themselves did not suffer from—a much more serious matter than loss of money and time; but is there nothing to be said on behalf of the poor practitioner who is called on suddenly to make an immediate diagnosis of the case and to act on it? As one of these latter, and one whose diagnosis having been reviewed has been found wanting, may I be allowed to plead extenuating circumstances in mitigation of judgment and explain *some* of the possible circumstances in which some of these errors occur?

The case to which I was called was apparently one of diphtheria and I gather from the general statement in the newspapers that many or most of the errors occurred in diagnosing this disorder. I say apparently it was one of diphtheria, for all the clinical symptoms were identical with those of that disorder. It occurred in the house of a training home for servant girls, with no possible accommodation for isolation. What was one to do? Theoretically one ought to have isolated the patient until one had taken a swab from the throat and had this examined and the diagnosis confirmed or otherwise. In the circumstances, however, I took on myself the responsibility of notifying the case and of having it immediately removed, and with all that I now know (and I have had a very considerable acquaintance with diphtheria) I should in the circumstances assume the risk again, and I have the approval of the medical officer of health for the action. Now, Sirs, not only is there considerable difficulty in the correct recognition of the various membranous sore-throats but since joining the profession (I am sorry to say a good many years ago) the typical symptoms of various of the infectious diseases have been more or less altered. For instance, how rarely now do we meet with the fulminating death-dealing scarlet fever epidemics that used to be prevalent? Scarlet fever is now a mild, almost non-pyrexial exanthem. More frequently than not the child has little or no rash, is perfectly well after a couple of days' slight feverishness, and returns to school in a week. Typhoid fever is now as often accompanied with constipation as with diarrhœa, and small-pox as modified by vaccination is almost unrecognisable except by an expert. In these circumstances mistakes do and will occur, giving cause for the uninitiated layman to blaspheme and the profession to be condemned in consequence. Recognising this fact and that the mistakes are not always due to ignorance alone, what means have we as a profession or what means have the various sanitary bodies for the more effectual checking or stopping of these errors and their results? With the profession, of course, the encouragement of more perfect study of the various infectious disorders and the modifications met with will immediately occur to one. With regard to the various sanitary bodies, the provision of shelters for observation, of some provision for bacteriological investigation, for the examination of slides, for the supply of tubes for Widal reaction, the examination and staining of sputum, the supply of antitoxin (how many have done these!), and lastly, the willing coöperation of the medical officer of health in friendly consultation in difficult cases. With regard to the Metropolitan Asylums Board, could not it provide some observation wards where cases of doubtful nature could remain under observation for a few hours and not be pushed straight into the wards? It must be remembered, too, that cases admitted with one kind of disease have been inoculated with others during their stay in these hospitals, so that errors occur inside as well as outside. To lessen the evil effects of these errors and the disrepute that they bring to the profession must be my excuse for ventilating my protest and urging the necessity of finding a remedy if possible. I am, Sirs, yours faithfully,

Kensington, August 5th, 1905. RICHARD BEVAN.

ANATOMICAL PECULIARITIES OF A GALL-BLADDER.

To the Editors of THE LANCET.

SIRS,—The following may be of interest in connexion with Dr. Ferguson Lemon's case of abnormality of the gall-bladder reported in THE LANCET of May 13th, p. 1265. I had occasion recently to make a necropsy on the body of an Italian who was killed by an explosion of dynamite in a mine in this district. On opening the abdomen I noticed that the gall-bladder was apparently absent. On turning up the liver a slight elevation of the usual colour of the gall-bladder was seen on the under surface of the right lobe about two inches from the anterior border. On incision it proved to be a normally sized gall-bladder containing bile, almost entirely embedded in the liver substance. As in Dr. Lemon's case, the coat of the gall-bladder was marked off very definitely from the liver substance but unlike his case was of normal thickness. The cystic duct ran for some distance through the liver substance, emerged at a small fissure of its own near the transverse fissure, and joined the hepatic duct in the usual situation. The fissuring and lobulation of the liver were most irregular but the gall-bladder, liver, and all other organs were quite healthy.

I am, Sirs, yours faithfully,

H. GERALD LOUGHRAN.

Western Australia, July 7th, 1905.

LONDON SANITATION.

To the Editors of THE LANCET.

SIRS,—I desire to bring under your observation a most objectionable and insanitary practice which takes place on six days of the week during the fruit season in London. Carts bring to Covent Garden Market from the surrounding country baskets of strawberries, other fruits, and vegetables, and return to the country with the empty baskets packed with, and in contact with, horse dung and other manure. I have not the least doubt that these same baskets are again filled up the following day with market produce to be brought to Covent Garden and that the same thing is repeated day after day, the only cleansing that the baskets get being probably a washing with cold water, if even that. This practice may be constantly seen on the roads that lead out of London and more particularly on the Hounslow-road.

I returned from West Africa a few weeks ago and was amazed to find this state of affairs, which I understand has gone on for at least several years, in the very centre of civilisation, where one would expect to see sanitation made as perfect as possible. It is ridiculous, almost laughable, to visit a hospital and see the elaborate preparations that are made for disinfecting purposes and then to compare it with this filthy custom. Certainly, camels are swallowed, while gnats are strained at, and one is inclined to ask, Where is the sanitary official? I am, Sirs, yours faithfully,

C. B. HUNTER.

Charles-street, St. James's, S.W., August 7th, 1905.

HOMBURG.

THE PROBLEM OF MINERAL WATER HEALTH RESORTS.—WHAT SHOULD, AND WHAT DOES, DETERMINE THEIR POPULARITY.

(FROM OUR SPECIAL SANITARY COMMISSIONER)

PART I.

THE HOMBURG OF THE PAST.

Bad-Homburg, August 1st, 1905.

THERE is no disguising the fact that of late Homburg has been under a cloud—a light, passing cloud, perhaps, but still a cloud. Yet it is also equally evident that Homburg has never before possessed so many resources for the treatment of various and serious diseases. Why with an increase of facilities and advantages there should be a decrease of popularity is a problem for which there is no one all covering reply. Many causes have been at work and among them political estrangements have played their part. Then there are the ever fickle changes of fashion. One year it is thought "good form" or the "proper thing" to go to some well-advertised resort; and at another time it is some other place that comes in vogue. Where it is only a matter of pleasure and pleasure-seekers this fickleness does not do so much harm but when it is a question of health this is not only regrettable but mischievous. Indeed, in studying the history and the fluctuations in the fortunes of Homburg a big problem presents itself which interests all countries and all places where nature offers some special advantage for the treatment of disease. Too little thought has been given to such questions, too much has been left to mere chance or to the perspicacity of speculators. It is only of late that the State has attempted, at least in some measure, to safeguard the interests of the public. This is notably the case at Vichy. Other places in which the public should be greatly interested have been left almost entirely to rise or to fall according to the length of purse and the ability of certain speculators. Sometimes there have been both ability and money but no agreement as to which form of attraction should be encouraged. This is very generally the case in health stations; it is notably the case at Homburg. Here, as in so many other resorts, we find the two great rival parties. The one seeks to attract visitors by advocating the organisation of innumerable sports, festivities, and pleasures of all sorts; the other party argues that these things are detrimental, that they keep patients away, and that the real welfare of the town depends on the number of cases treated successfully.

So far as the interests of the public at large are concerned the position is very simple. Sports and pleasures do not need the presence of special facilities for medical treatment. Homburg possesses mineral springs of undoubted and exceptional medical virtue; it also enjoys very useful climatic advantages. It is these healing facilities that should be rendered accessible to the greatest possible number of sufferers. Any fluctuation in politics, in fashion, or in financial speculation which prevents the presence of sufferers when their health would be restored by going to Homburg or some other genuine health resort is to be deplored and set down as a public loss. In a word, all that contributes in any marked degree to the relief of disease should be as largely available as possible and no extraneous consideration should step in between the patients and the remedy that they need. Bearing, then, this principle in mind, what has been the history of Homburg? If studied in detail it will show that this resort has owed its prosperity to a fortuitous concourse of very exceptional circumstances rather than to any deliberate effort on the part of any public authority to satisfy an obvious public demand. Perhaps the ancient Romans managed matters better. When this part of the country was annexed to the Roman Empire the natives, said to have been Celts, were making use of the mineral waters to extract salt from them. The Romans did not fail to employ the waters for bathing purposes. The whole country around is rich with Roman remains. Close to Homburg, within an easy tramway ride, under the able direction of Professor L. Jacobi, the Roman fortress of Saalburg has been restored. This is one of the long line of forts that stretched from the Danube to the Rhine and is a great attraction to all who are interested in Roman history and in archæology.

After the departure of the Romans during the dark ages and up to the seventh century but little is known of Homburg. The waters seem to have been used merely for the salt which they contained and which was employed for culinary purposes. In 1622 the Landgraviate of Hesse-Homburg was created under Prince Frederick I. His successor, Frederick II., known as the Silver Leg, enlarged the town and built its present castle or princely residence. In 1766 the Landgrave Frederick Lewis came to power and by devoting especial attention to the mineral springs laid the foundation of the town's future renown. He also succceded in attracting various celebrities to live at, or to visit, Homburg. But these German princes were notoriously poor and could not do much. The next Landgrave, Prince Frederick Joseph, was, however, fortunate in marrying in 1818 Princess Elizabeth of England, one of King George III.'s daughters. This princess brought with her a settlement of £10,000 a year which was a substantial addition to the 20,000 or so florins which constituted the civil list of the Landgrave. The Princess Elizabeth made herself very popular and for this reason the principal spring at Homburg was named the Elisabethbrunnen. Gardens and walks were laid out, old houses were pulled down, and a deliberate attempt was made by the reigning family to render the mineral waters available for the treatment of disease. These efforts so far succeeded that it became worth while to keep a record of the persons who were now beginning to resort to Homburg for their health. The first such record is dated 1834 and in that year there were 155 visitors. The following year there were a few more; but in 1836 there were 294, and in 1837 no less than 800. In 1839 the maximum figure under the *régime* of the Landgraves was reached—namely, 829.

There now happened the event which has had the greatest effect over the destinies of Homburg. It is impossible to consider this fact without feeling much concern and doubt. Ought the interests of public health to depend to such an enormous extent on other and far less estimable considerations? In 1841 the Landgrave Philip, who had now succeeded to the Landgraviate, concluded a contract with Messrs. Louis and François Blanc conceding to them the right to establish gaming tables at Homburg. At first this did not make much difference. The brothers Blanc had very little capital. They put their roulette tables in a small building, now converted into an institute for mechano-therapeutics, and situated behind the row of jewellers' shops near the Kaiserbrunnen drinking fountain. But an incident soon occurred producing material consequences from which the inhabitants of Homburg still suffer. The Kurfurst von Hessen, who had a castle and an orangery in the neighbouring town of Hanau, was one of the earliest patrons of the roulette and he soon contrived to lose 100,000 gulden. This was the commencement of the fortune of the Blanc brothers and represented a much larger sum than the capital with which they had started. But what affects the town of Homburg to this day is the fact that the Kurfurst von Hessen having lost this sum proceeded to borrow money so as to try to win it back. In those days it was the fashion for princely families to rear orange trees and those at the castle of Hanau were celebrated for their splendour. Nevertheless, they were handed over to the Blanc brothers as a pledge in exchange for a loan of 40,000 gulden. But before this pledge was redeeemed their owner died and his son on succeeding to the estate claimed the orange trees back again. As, however, he could not pay the money which had been advanced they were not returned. The new Kurfurst von Hessen was much angered and it so happened that just at that time plans had been made to connect Homburg with Frankfort by a railway which would pass through some of his estates. The scheme was emphatically rejected. The railway nevertheless was built but having to avoid the estates in question has to follow such a roundabout course that the journey is twice as long as it need have been. For more than half a century countless thousands of people have had to perform a half-hour's journey when, but for the squabble over the orange trees and a gambling debt, 15 minutes would have sufficed. Further, it may be noted that while this dispute was proceeding the orange trees began to sicken and would probably have died if they had not been bought by the late Empress Frederick, then Crown Princess of Prussia, for her garden at Kronberg. Here they were restored to health by the science and skill of the gardener. It is on such incidents as these that the fortune of Homburg has depended, yet it should be based exclusively on the medical qualities of its waters, on its climate, and on the efficacy of its sanitary laws and administration, together with the comforts and accommodation available for patients and visitors.

After the first struggle and when once the winnings of the bank at roulette had accumulated sufficient capital to face all contingencies, the fortunes of Homburg and the Blanc family became identical and went up by leaps and bounds. In 1842 there were 1732 visitors and in two years this number was doubled. In 1847 there were 5187. Speaking of 1848, Heine said: "There comes a time when every monarch is feeling his head to see if his crown is still on it," and this insecurity caused a falling off in the number of visitors but the figures rose again in 1850 and attained 10,105 in 1856. At this they remained and 10,000 may be considered as about the average till 1865, when there were 12,473 visitors. Then was reached the eve of another great crisis in the fortunes of Homburg.

It must not be thought that the gambling alone attracted this increase of visitors. The ability, the enterprise, and the perspicacity of the Blanc brothers are well known, and as an authority on complex financial problems M. Louis Blanc elicited the praise of the late Lord Brougham when he came in contact with him on the Riviera. To make Homburg attractive the Blanc brothers lavished their money on improving the town. They built a palatial Kurhaus or Casino and soon found that it was not large enough and therefore added two wings, in one of which they built an elegant theatre. The cornfields behind the Casino were converted into a beautiful park, with lake, swans, and various picturesque attractions. Better still, deep borings were made for the mineral springs, to secure them against contamination and to increase the quantity and the trustworthiness of the supply of mineral water. Foreign medical practitioners were encouraged to settle at Homburg. There were one French, one Dutch, and two British medical men to attend to patients of various nationalities. The building of churches for various denominations and nationalities was likewise encouraged. If most of the people who came gambled it was entirely their own fault. Those who were wise enough not to play gratuitously enjoyed all the advantages that were offered.

There were, of course, evil sides to all this prosperity. For instance, the more the Blanc brothers did the less the town was disposed to undertake. Now although, to prosper the roulette, money was freely spent on theatricals, concerts, bands, fireworks, illuminations, parks, sports, casino buildings, and so forth, nevertheless it was scarcely to be expected that the Blanc brothers would devote the proceeds of the gaming tables to the carrying out of a scheme of drainage or of works to provide a well-protected, ample, and pure water supply. The houses and the hotels were then drained into cesspools which were built anyhow, were not properly cemented or ventilated, and were very generally in a leaky condition. Indeed, a case is related of a large part of the contents of a cesspool pouring out into the kitchen of a first-class hotel just at the moment when the *table d'hôte* was being served. There were some cases of typhoid fever in this hotel and in several other parts of the town. Yet in these old days when the accommodation for visitors was very insufficient and when the general conditions were most insalubrious there was a brilliant crowd. Royal princes and crowned potentates flocked to Homburg and with them the leaders of fashion and the queens of beauty. But the days of gambling were numbered.

The war between Prussia and Austria broke out in 1866 and one result was the annexation of Frankfort with all the surrounding country, including Homburg. There is no longer a Landgrave of Hesse-Homburg, now Homburg is simply a town in the Kreis or district of Ober Taunus and a portion of the kingdom of Prussia. But the Prussian Parliament had altogether abolished gambling. Considering, however, the vested interests that had grown up in Homburg the new Government was willing to give a fairly long notice to quit, though this was done only on condition that an enormous tax should be paid. Previously the town derived only indirect benefits from the gambling, as but a small tax was levied on the Casino. The tables were to be allowed to continue till Dec. 31st, 1872, on condition of paying an annual tax of £24,000. Then a great and final effort was made and the rush of visitors increased as the last moments approached. In 1869 they numbered 19,843. Even during the Franco-German war of 1870 there were 10,841 visitors. In 1871, in spite of the after-effects of the war, there were 18,067, and it was during the last year of all that the zenith was reached when no less than 21,001 persons visited Homburg. But when the last marble had been spun for the last time round the roulette it seemed as if the wheel of fortune had for ever been broken. Hotel-keeper and shop-keeper looked upon their establishments as useless and those who had not yet made their fortunes considered themselves as ruined.

There was, it is true, a faint flicker of hope. The tax which the Prussian Government compelled the owners of the tables to pay had been carefully hoarded up and there remained some £150,000 in hand for which 5 per cent. interest could be obtained in those days. Thus the town saved a permanent endowment out of the wreck of the roulette. Then there were the Casino itself and its magnificent park and gardens, to say nothing of the fact that the appurtenances of the mineral springs had been much improved, and all out of the profits derived from the roulette and the trente et quarante tables. Still it was quite evident that the French visitors who had done so much to render Homburg attractive would not come after the war, particularly as there were no more gaming tables. The Russians would not come, nor the Italians, nor wealthy persons from South America; in fact, it seemed as if no one would come at all unless it were a few English. Thus, and under these depressing anticipations, what may be qualified as a new Homburg, a modern Homburg, came into existence. It is the new, the modern Homburg that may justly claim to interest the medical profession. But when the history of ancient Homburg, the Homburg of a generation ago, is taken into consideration the question arises whether it is right that such valuable mineral springs should have to depend for their popularity on such antecedents. Should there not be some sort of official and scientific body or organisation to make known what is really valuable to humanity, instead of having to wait as was the case with regard to Wiesbaden, Baden Baden, and Homburg, for the advent of the enterprising owners of roulette tables?

(To be continued.)

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Monyhull Hall.

THE estate of *Monyhull Hall*, comprising in addition to the hall, a lodge, cottages, stables, outbuildings, and 174 acres of land, is shortly to be put to the purpose for which it was purchased—viz., a home for epileptics and feeble-minded individuals. The management is in the hands of a joint committee of the Birmingham, Aston, and King's Norton boards of guardians and accommodation will at first be provided for 110 patients from Birmingham, 50 from Aston, and 50 from King's Norton. The inmates will be engaged in agricultural pursuits. No one over 45 years of age will be eligible for admission and the necessary precautions will be taken to prevent them propagating their species; children will be left to the care of the education authority. Feeble-minded children on reaching the age of 16 years leave the special schools and it is to provide the extra care and protection necessary after that age that the scheme has been brought forward. The estate cost £100 per acre and although it is not expected that the colony will be self-supporting it is believed that the earnings of the inmates will reduce the cost of their maintenance. The estate is estimated to afford ample room for the erection of as many cottage homes as will be required during the present century. Two other schemes which the boards of guardians have had under consideration for some time—viz., a labour colony for the unemployed and a special home for the "ins and outs"—have been lately discussed and a definite resolution has been arrived at not to proceed further with them at present. The objection to both schemes has been based largely on the ground of economy.

The Birmingham and Midland Eye Hospital.

The seventy-fifth annual meeting of the friends of the above charity has lately been held. Although there has been a slight diminution in the annual subscriptions, still the item of legacies, due largely to the generosity of the late Mr. Richard Cadbury, amounted for the year to £5887 and the treasurer has been able to show a balance carried forward and partly invested of £13,664. The expenses for the year showed a decrease due to the smallness of the item of repairs and alterations. During the year 26,831 patients had been treated, of whom 1100 were in-patients, and since the foundation of the hospital in 1823 the number of patients admitted amounted to 782,557. During the last year the average number of beds occupied nightly was 73·6 and the average length of stay in hospital was 24·4 days. The number of operations performed on in-patients was 676, including 350 for the removal of cataract, 202 iridectomies, and 85 extirpations of the eyeball. In the out-patient department 637 operations were performed. Spectacles were supplied in 8979 cases and foreign bodies were removed from the ocular surfaces in 8428 cases. The Earl of Dartmouth was elected president for the ensuing year.

Lead Poisoning in the Pottery Trade.

A Parliamentary return has lately been issued relating to lead poisoning in earthenware and china works. The North Staffordshire return relates to 318 factories. In the Potteries 84 cases of lead poisoning were reported compared with 204 in 1899. The proportion of cases to persons employed in lead processes in the Potteries is 0·9 per cent. of males and 3 per cent. of females.

The Pollution of the Trent.

The reply of the Stoke town council to the letter addressed to it on the above subject by the Duke of Sutherland, to which I referred in my last letter, has just been published. In it the council states that it thoroughly sympathises with the duke as the council itself is a fellow sufferer. The council alleges that the pollution of the Trent and its tributaries takes place higher up the stream and it expresses the opinion that there would be little or no cause for complaint if all the other authorities put into the stream as good effluents as those from the Stoke sewage farm. Copies of remonstrances addressed by the council to neighbouring local authorities with regard to the pollution of the streams were inclosed with the reply. The letter further admits that within the last few months some pollution of the river has taken place but points out that this is owing to the breaking of the Campbell-road sewer by the mining operations of the Stafford Coal and Iron Company of which the duke is one of the largest shareholders. At the request of the company the council was making temporary arrangements until such time as the mining company's engineers were of opinion that the subsidence had ceased. However, the corporation, to show its *bona fides*, had decided to take steps to lay down a new iron-pipe sewer without waiting any longer. It has also decided, although it considers its effluent to be a fair one, to call in an expert to advise it on the whole matter. It further asks for specific information as to when and where the Stoke effluent had been turned into the river so as to cause the pollution complained of. The corporation of Newcastle-under-Lyme seems to be at present responsible for some part of the nuisance, since a huge volume of sewage matter is flowing down the Lyme brook from the Dimsdale sewage farm owing to the dam being broken. With these two exceptions, however, none of the local authorities are willing to admit any responsibility for the pollution, pointing to the money that they are expending in experimental works. The local authorities in North Staffordshire are at present actually pledged to the expenditure of £220,000.

The Birmingham Education Committee.

At the last meeting of the above committee the annual report of the special schools after-care subcommittee was approved and directed to be printed and circulated. The chief conclusions arrived at in the report were (1) that a certain percentage of mentally defective children should be educated in board schools to insure sufficient industrial training and to remove those who were known to be moral imbeciles from an environment which must necessarily lead to anti-social conduct ; and (2) that industrial colonies sh be established where cases which will never become supporting or morally responsible in ordinary circumsta may be placed under such supervision as will enable the contribute to their own support. Mrs. Pinsent, in movin adoption of the report, thought that in time they woul able to turn out 30 per cent. able to earn their own li since they were now attempting to educate in special cl children of a higher mental capacity than when the sch were instituted four years ago. At that time there were about 100 children so educated, the majority of whom almost imbeciles. An interesting statement in the re was that there were 206 epileptic children in the city an these all but 20 suffered in so slight a degree that they c be educated in the day schools under ordinary conditions by ordinary methods.

The Health of Birmingham.

The health of the city still remains good despite the that owing to the great dryness and heat there has bee outbreak of diarrhœal complaints. A significant fac connexion with deaths from diarrhœa is that practic all of them occur in the families of the working cla Further, amongst babies under six months old, fed natura 8 per 1000 died, while of babes not naturally fed 252 1000 died, or more than 30 times as many. Three fi cases of small-pox have been notified and the numbe cases of scarlet fever is slowly increasing, although they happily of a mild nature.

August 8th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

University of Liverpool: Award of Robert Gee Scholarsh

Two Robert Gee scholarships, each of the value of £ tenable for one year, have been awarded to Joseph Bamfo Warrington Grammar School, and Idwal J. Williams, H head County School. The successful candidates must regis as medical students in October and attend the clas required for the first year's study for a medical degree of University of Liverpool. The scholarships, which are f in number, are among the benefactions bequeathed to university by the late Mrs. Gee, widow of Dr. Robert G formerly physician to the Liverpool workhouse. The schol ships are only open to male students and to those who h not attended day classes at the University.

Munificent Bequest to the Delamere Forest Sanatorium.

The trustees of the late Mr. James Holden of Marslan near Rochdale, have made a grant of £10,000 to the Delam Forest Sanatorium for Consumption. One of the conditio is that six beds shall be set apart for the exclusive use Rochdale patients. Some time ago an influential Rochd deputation waited upon the trustees to ascertain wheth it were possible to make a grant to an institution the treatment of consumption at Rochdale, but that ins tution could not comply with the terms of the will, whi states that the money can only be given to well-establish institutions. The proposed grant to the Delamere Fore Sanatorium was then put forward as an alternative schem The total bequests to charities of the late Mr. Hold amounted to £250,000.

Liverpool Royal Infirmary: Appointment of Assistant Gynæcological Surgeon.

The newly created post of assistant gynæcological surge at the Royal Infirmary has been filled by the appointme of Dr. W. Blair Bell. There were four candidates for t election committee to choose from, two being local men a two from London.

Liverpool Institute of Tropical Research.

The initial meeting of the council of the Liverpo Institute of Tropical Research was held on August 2n when Sir Alfred Jones, K.C.M.G., was unanimously electe chairman. Viscount Montmorres was appointed the direct of the institute and Dr. Eric Drabell the economic botanis The following gentlemen were appointed to act as a pr fessional board: Professor E. C. K. Gonner (statistics Professor Harvey Gibson (botany), Professor W. A. Herdma (zoology), Professor B. Moore (physiological chemistry), an Professor Ronald Ross, C.B., F.R.S. (tropical hygiene an itation). At the end of the meeting the chairman nounced that Mr. W. H. Lever had promised a similar arantee to his own—£1000 a year for four years—that Mr. Sutton Timmis would contribute £250 a year, Mr. John nkin £250 a year, and Mr. H. Sutton Timmis £50 a year.

August 8th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

The North Devon Infirmary.

THE annual meeting of the governors of the North Devon nfirmary at Barnstaple was held on July 25th, the Lord ieutenant of the county (Viscount Ebrington) presiding. he report stated that during 1904 the in-patients numbered 92, against 840 in 1903, and that there were 4014 out-atients treated as compared with 3032 in the previous year. he average daily number of in-patients was 53. The nancial statement showed that the receipts amounted to £2593 and that the expenditure was £2510. It was decided o make several structural alterations in the building so as o provide accommodation for 50 additional beds, 16 being or men, 20 for women, and 14 for children.

The Sale of a Medical Practice in Bideford.

Allusion has been made in THE LANCET[1] to litigation connected with the transfer of a medical practice in Bideford. Dr. Alexander Lane sold the practice to Mr. C. Pearson who subsequently brought an action against Dr. Lane, when the jury gave a verdict in favour of Mr. Pearson or £200. Dr. Lane subsequently became bankrupt in Newcastle-on-Tyne, whereupon the judge of the Newcastle County court granted him an immediate and unconditional discharge. An appeal against this decision was heard by Mr. Justice Bingham and Mr. Justice A. Lawrence on August 1st. Mr. Justice Bingham in giving judgment said that Mr. Pearson had not received a penny of the £200 which through the finding of the jury ought to have been paid to him by Dr. Lane; this was a state of things which the legislature distinctly said was not to be. His lordship added that Dr. Lane was not entitled to his discharge and the appeal against the decision of the Newcastle county court judge was upheld. Mr. Justice Lawrence agreed and the appeal was allowed, with costs, an order being made for the suspension of the discharge of Dr. Lane for two years.

The Appointment of Medical Officer of Health for Wrexham.

The Wrexham rural district, which has a population of 6,000 and an area of 65,000 acres, has two medical officers of health, following the custom which at one time was very common of appointing the Poor-law medical officers as medical officers of health. An endeavour is being made by the Local Government Board to put an end to this undesirable duplication of officers under one authority and one of the recommendations of Dr. L. W. Darra Mair, made after an inspection of the district two years ago, was that at the first opportunity an effort should be made to appoint one officer who should devote his whole time to his duties. The death in March last of Mr. R. W. J. Evans, the medical officer of health of Wrexham borough, has led the rural district council to suggest the appointment of a medical officer of health for the two districts at a salary of £500 per annum. The combined population is over 70,000. When the proposal came before the town council it met with some opposition, one member arguing that the size of the district was so great that it could not be efficiently covered by one official. No decision was come to in the matter and the question will be discussed again in September.

Llandrindod Wells.

The large common of about 50 acres, which adjoins the pump rooms at Llandrindod Wells, has been in danger of being given over to builders, and those who drink the waters have been perilously near being deprived of a breezy open space in which to take their ten minutes' walks between drinking each glass of saline or sulphur water. The district council has succeeded, though with some difficulty, in getting a Bill through both Houses of Parliament enabling them to purchase the common and to secure nearly all of it as an open space for ever.

Lunacy in Herefordshire.

Mr. C. S. Morrison, the medical superintendent of the Hereford County and City Lunatic Asylum, in his annual report to the committee of visitors points out that Hereford can claim to be among the first to have recognised and to have provided for the more humane treatment of the insane, for as long ago as the year 1798 there was in the city a hospital for the mentally afflicted which had been founded by the private munificence of the few and was maintained by public charity. There are, it appears, certain endowments from this hospital which are administered by the governors of the general hospital and £10 yearly are given to the asylum committee to be used by them in aiding deserving patients when leaving the institution. Mr. Morrison suggests that the fund might be used for the maintenance of a special department of the hospital in which the early treatment of incipient insanity could be carried out.

Isolation Hospital Treatment in Newport.

The town of Newport (Mon.) is well provided with isolation hospital accommodation and this is made good use of by the inhabitants. During 1904 there were 259 cases of scarlet fever notified to the medical officer of health and of these 84 per cent. were treated in the hospital, while 71 per cent. of the patients suffering from typhoid fever and 60 per cent. of those suffering from diphtheria were also removed there. Since the extension of the hospital two years ago the town has been comparatively free from epidemics of these diseases and Dr. J. Howard-Jones, the medical officer of health, suggests that one of the small blocks should be used for the reception of early cases of pulmonary tuberculosis among the poorer classes of wage-earners who cannot afford to pay the fees which are charged in other sanatoriums. He considers that as the capital outlay would be small and as the administration charges have to be paid in any case the cost per patient would not exceed one guinea weekly.

August 7th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

The Professorship of Surgery at the University of Leeds.

Mr. Edward Ward, who has held the professorship of surgery for the past six years, has resigned and the council, in accepting his resignation, has expressed its sense of the loss which the University has sustained in the limitation which this will impose on his teaching. I say "limitation," for happily Mr. Ward, who is senior surgeon to the infirmary, retains his post as clinical lecturer on surgery and as such is a member of the Faculty of Medicine. The council is to be congratulated on its choice of a successor and Mr. Harry Littlewood, M.Sc. Leeds, F.R.C.S. Eng., will, I feel confident, maintain the high standard of teaching which his predecessors have set. Mr. Littlewood began his connexion with the school as honorary demonstrator of surgical pathology and for the last six years has been the lecturer on practical surgery. His promotion causes a vacancy, therefore, which the council intends to fill up at a subsequent meeting.

Airing Grounds for Patients of Hospitals.

The use which is made as airing grounds for the patients of the open spaces, small though in many cases these may be, which are attached to the various London hospitals is familiar to all who visit these institutions, but probably there are few other than those who have been resident officers who are aware of the extent to which the terrace of the Leeds Infirmary is utilised for this purpose. This "terrace," which can only be seen from the surrounding thoroughfares at one or two points, forms a means of communication between the upper part of the five ward pavilions originally designed by Sir Gilbert Scott and provides a fairly extensive and elevated airing ground or balcony. It is now intended to provide means of access to this from the upper ward of the large new pavilion, which formed a part of the great extension of the infirmary carried out some 12 years ago. Plans have been prepared by Mr. Sidney Kitson and approved by the board which show a covered terrace or elevated corridor passing from No. 18 Ward to an extension of one of the three sides of the existing "terrace" which will be converted into a shelter.

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[1] THE LANCET, Feb. 18th (p. 465) and July 1st (p. 55), 1905.

Depôt for the Sale of Pure Milk.

It was announced some time ago that the Leeds corporation had decided to institute a depôt for the sale of pure milk by making an arrangement with a farmer to purchase all his milk subject to his observing certain stringent conditions as to the regulation of his dairy. This announcement, it is now found, was premature, for when the recommendation of the sanitary committee on which it was based came up before the city council for confirmation it was ruled that it was not in harmony with statute that the recommendation should be carried out. The opinion is held by some that certain corporations that have instituted such depôts are acting *ultra vires* and some think that Leeds might have followed suit and risked being pulled up. The lord mayor, who gave his ruling after careful consideration and consultation with legal authorities, has shown his sympathy by subscribing £200 towards the expenses of instituting such a depôt and no doubt the necessary sum will be readily secured. It is understood that the corporation intends to apply for powers to institute and to carry on such a depôt and it is gratifying to find that there is a practical certainty of the work being meanwhile carried on by voluntary effort.

August 8th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Inebriate Homes in Scotland.

IN his report on the Inebriate Homes in Scotland Dr. J. C. Dunlop, who is inspector for Scotland under the Inebriates Acts, deals with Girgenti. This reformatory is managed by a committee of the Glasgow town council and certified for the reception and treatment of 58 women convicted under Sections 23 and 24 of the 1898 Act. It has now been in existence for four years and to it 88 inmates have been admitted. On Jan. 1st, 1904, there were resident in the reformatory 39 inmates, absent on licence 18, and absent without leave (having escaped from the reformatory or absconded from guardians when out on licence) 10—in all 67. During the year 10 women were admitted, 29 were discharged at the expiry of sentence, four were transferred to the State reformatory, and one died. On Dec. 31st there were in residence 27, out on licence nine, and absent without leave seven, making a total of 43. The daily average number in residence in the reformatory during the year was 38. While stating that the amount of reformation resulting from treatment in this reformatory is small, Dr. Dunlop does not consider that it is in any way indicative of failure on the part of the institution, for the functions of these reformatories are twofold, the cure of the inebriate and the segregation of the inebriate, and if the reformatory fails to fulfil the one function entirely it is nevertheless useful in that it can, and does, fulfil the other. This second function, the segregation of drunken pests, is a most useful and beneficial one, and is one which perhaps the managers of this reformatory might give more credit to than they have recently done. If the managers would consider their reformatory as a means for preventing the spread of drunken habits in the town as much as, if not more than, a means of curing the degraded drunkard and would use it accordingly then the present useful functions of Girgenti Reformatory would be greatly enhanced. Let them look to their reformatory as an institution comparable to an infectious diseases hospital, an institution founded to serve a double purpose, the treatment of the sufferer and, in addition, the safeguarding of others. The cost of maintaining Girgenti Reformatory during the year has amounted to £2747 12*s.* 6*d.* Of this sum £1084 7*s.* 6*d.* were contributed by the Treasury; £4 14*s.* 10*d.* were received as payment for work done by the inmates; and the balance of £1650 11*s.* 5*d.* was paid by money collected by assessment in Glasgow. During the period under consideration at the Greenock Reformatory the average daily number of convicted persons in residence was 18·3; but in addition to these there was a considerable number of voluntary inmates. The convicted cases were all confirmed inebriates and most of them had been so for years. The ages of the 15 admitted ranged from 21 to 48; their mental state as reported by the medical officer was good in only five cases, in four it was moderately good, while in six it was decidedly weak if not actually insane.

The Marine Biological Association of the West of Scotland.

This association is now holding its summer classes for teachers in marine biology. The "A" course finished last week and the "B" course commences this week. The first course includes description and dissection of certain types, external examination and identification of the remaining types, and demonstrations in the tank-room. The second year's course is chiefly taken up with the mounting of selected specimens which remain the property of the students. To this is added in the third year's course instruction in the systematic zoology of special groups. The steam yacht *Mermaid* is used for dredging excursions, and those who are taking advantage of the facilities placed at their disposal find that they are enjoying a pleasant holiday and at the same time acquiring a considerable store of knowledge. In order to encourage the study of this interesting subject certain of the school boards in some instances are paying the necessary fees.

Cottage Hospital for Port Glasgow.

At a recent meeting of the magistrates of Port Glasgow Mr. John Birkmyre intimated that he and his wife had decided to gift £10,000 to the burgh for the erection of a cottage hospital. A suitable site behind Chapelton school has been granted by Sir Hugh Shaw Stewart at a minimum feu-duty. The hospital is to be composed of two wards and to contain 22 beds. In the event of the whole £10,000 not being required for building purposes the balance is to be used as the nucleus of an endowment fund.

Swimming and School Boards.

The lessons in swimming provided by the Glasgow school board to the boys in the higher classes are much appreciated and the results are highly creditable. Over 600 boys were tested from 20 different schools and 90 per cent. of the boys who have had two lessons per week during the last eight weeks were able to swim satisfactorily, while 50 per cent. of those receiving one lesson per week were able to swim fairly well. To any reader of the newspapers during the summer months when so many drowning accidents occur this action of the school board will seem highly commendable and should eventually if persisted in result in the saving of many valuable lives.

August 8th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Apothecaries' Hall of Ireland.

AT the annual meeting of the governor and council of the Apothecaries' Hall of Ireland held on August 1st the officers were elected for the ensuing year. The *personnel* of the council remains much as before but Lieutenant Colonel F. G. Adye-Curran, M.D. Dub., F.R.C.S. Irel., was duly elected governor and representative on the General Medical Council for the coming year.

Epizootic Lymphangitis in Ireland.

The alarm caused by the epidemic of glanders among horses in Ireland has been somewhat allayed by an official statement from Colonel Davidson, A.Q.M.G. Irish Command, Royal Hospital, Dublin, stating that the disease which first appeared at the Curragh camp in last November was effectively checked by the preventive measures adopted, the total number of cases having reached only 42. The horses from the large districts of Waterford and Kilkenny are, however, prevented from being sent to the coming horse show held by the Royal Dublin Society, which latter constitutes both from the economic and social points of view the most important annual festival in Ireland. The recent discussion in the House of Lords shows the importance of the matter.

Health of Dublin.

A fair index of the zymotic health of Dublin is generally to be found in the records of the monthly meeting of the governors of Cork-street Hospital. On July 13th the medical superintendent reported that during the month of June there was a large increase in the number of cases of pneumonia of a severe type admitted to the hospital, scarlet fever and diphtheria contributed a fair share of the deaths, while cases of measles declined considerably. The admissions of enteric fever cases were not numerous but they were nerally of a severe type. There has been much comment the exceptionally dry weather which has recently pre-iled in Dublin and in Ireland generally. The governor of the yal Botanic Gardens, Glasnevin, has reported that during three months ending July 31st, 1905, the record of rainfall the district has been unusually low, the season having oved the driest since 1887—the jubilee year.

Health of Belfast.

At a meeting of the city council held on August 1st it was ported that measles is again more or less prevalent in lfast, 17 deaths having been caused thereby. Between ne 18th and July 15th there were notified 178 cases of motic disease; 65 cases of simple continued fever; 32 typhoid fever, 26 of scarlet fever, 24 of erysipelas, of diphtheria, four of croup, and one of small-x. The annual death-rate was 17·1. Diarrhœa is o very prevalent, having caused 26 deaths in the t month. A deputation appeared before the council presenting the inhabitants of the Shore-road and the rth-East district of Belfast to condemn the system of cteria beds, urging that there should be no more outlay d that a thorough investigation should take place into the oper method to be adopted. Finally they protested against discharge of sludge upon the beach in the neighbour-od. In reply it was stated that the bacteria beds worked isfactorily in Belfast and the last bed put down, which s somewhat of an improvement on the former ones, was rifying to the extent of 96 per cent. the sewage passing rough it.

Down District Asylum.

The report for the year ending Dec. 31st, 1904, has just en published. 179 cases were admitted during the year d there were residing in the institution on Dec. 31st 0 inmates—284 males and 316 females—the total cases der care during the year being 451 males and 391 nales. There were 84 discharges, the percentage of coveries on admissions being 41·9. With the possible ception of dysentery there was no disease due to local con-ions and this affection is reduced in frequency and in erity of type. The inspector of lunacy in his report has pressed "entire satisfaction" with the institution and he ide no suggestion for improvements which would entail y considerable expense.

Death of Mr. John Auterson, L.R.C.P. Edin.

On the night of August 5th as Mr. John Auterson, a well-own medical practitioner of Cookstown, co. Tyrone, was urning home from paying a professional visit in the country horse shied at the reflection of a lamp on the white-shed gable of a house on the road. The animal ran back d the vehicle with Mr. Auterson was precipitated into a bog feet below. The road at the place and for many yards is tally unprotected, not even a wire fence or hedge being ovided at a place where the bog has been gradually cut ay to provide firing by the use of the peat (or turf as it is lled in Ireland). The accident was fortunately seen and r. Auterson was removed to an adjacent house where Mr. R. rgess (Coagh) and Dr. C. H. P. D. Graves, Dr. W. J. R. ight, and Mr. R. Crossett (all of Cookstown) did every-ing in their power for their injured *confrère*. On the ening of the following day Mr. Auterson was removed to s own house where he died on August 7th. The deceased ntleman, who was born at Coolsaragh, Desertmartin, came in 1868 L.R.C.P. Edin., and practised at first in aperstown but 30 years ago removed to Cookstown, where built up a large practice and was greatly liked by the blic and his professional colleagues. He was unmarried d leaves a brother, a medical practitioner, in Magherafelt.

August 8th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

ction of Metallic Ferments on the Blood Cells and on the Production of Uric Acid and Urea.

IN THE LANCET of Dec. 24th, 1904, p. 1816, an account as given of some investigations made by M. Albert Robin owing that metabolic processes in animals might be odified by hypodermic injections of fluids containing a nute amount of certain metals in a state of extreme sub-vision. The metals in question were palladium, gold, ver, and platinum; their effects were shown by alterations in the quantitative composition of the urine and in the amount of carbon dioxide excreted and the name of "metallic ferments" was given to the solutions possessing this property. At a meeting of the Academy of Medicine held on July 18th M. Robin read a paper describing further observations which he had made on the same subject in conjunction with M. Émile Weil. He said that they had examined the effects produced by the metallic ferments on three patients suffering from subacute articular rheumatism or cancer of the stomach. The excretion of urea and uric acid and the assimilation of nitrogen were always increased with simultaneous production of leucocytosis and intense leucolysis. They had endeavoured to discover the origin of the uric acid thus produced and eliminated in excess. It was well known that uric acid was supposed to be derived from nucleins set free and decomposed in the organism as a result of the destruction of the white corpuscles of the blood, but in the present cases the polynuclear neutrophiles must be regarded as the source of the uric acid that was eliminated. It was to be remembered, however, that leucolysis and the formation of uric acid were not uniformly associated and might be brought about independently of one another by the use of certain drugs. It was obvious therefore that uric acid had no immediate and invariable connexion with the destruction of leucocytes but that it might arise from other causes influencing the hæmopoietic organs. To explain the observed facts M. Robin and M. Weil have suggested an hypothesis of which the following is an outline. The leucocytes are the carriers of the soluble organic ferments; these ferments when set free by leucolysis exercise a deoxidising action in the organism and give the first impulse to the processes which result in the formation of urea and uric acid. If, however, the ferments do not cause the elimination of uric acid, as is the case in cancer and cachexial diseases, it is probable that the leucocytes contain no diastase because destruction of the leucocytes is not followed by the ordinary results of the liberation of diastase. Whatever may be the value of this hypothesis the observed facts which it endeavours to explain at least deserve to be recorded.

Neuroses of Childhood and the Education Problem.

At the same meeting of the Academy of Medicine M. Maurice de Fleury described 37 cases of idle, inattentive, mentally depressed, and unruly children who were neurasthenic, arthritic, hysterical, and mentally deficient, with some indications of chorea and diabetes. An improvement followed on the use of appropriate treatment. M. de Fleury said that the physical conditions reacted on the moral conditions in children as well as in adults, a circumstance which justified medical treatment even when the disorder was apparently an intellectual perversion (*maladie de l'esprit*). Many troublesome school children upon whom punishment had no beneficial effect were found when carefully examined to be the subjects of either definite neuroses or nutritional diseases. The results of medical treatment showed that the association of these conditions was not a mere coincidence but that they were mutually related as cause and effect. The treatment required to be supplemented by intellectual and moral re-education.

Tetanus of Uterine Origin.

At the July meeting of the Société d'Obstétrique, de Gynécologie, et de Pédiatrie Dr. Ris described a case in which the patient was a primipara, 18 years of age. She was at first attended by a midwife, an elderly woman, but a medical man had to be sent for, who found that labour had been in progress for 48 hours, that the shoulder was presenting, and that the fœtus was dead. Dr. Ris decided to perform embryotomy by the method of Dubois. The uterus was in a state of tetanic contraction and rupture of it occurred as soon as the operation was attempted. Dr. Ris thereupon immediately performed Porro's operation. The patient's condition was favourable until the evening of the twelfth day, when her temperature rose slightly and her neck became stiff. The ordinary symptoms of tetanus afterwards appeared and she died suddenly. Fluid from the cervix contained the bacillus of tetanus in pure culture.

White Swelling of both Knees.

At a meeting of the Surgical Society held on July 26th M. Walther showed a man, 20 years of age, who when in his tenth year was found to have a white swelling of his left knee. Recovery followed after some months but the joint was ankylosed at a right angle. Last November the young man came under the care of M. Walther with a white swelling of the right knee. Orthopædic resection was necessary for the left knee, but as a double resection would have condemned the patient to walk with crutches for the remainder of his life M. Walther treated the right knee by the sclerogenous method (interstitial injection of chloride of zinc). The joint is now moveable and the man can walk very well.

The Relative Merits of Rapid and Slow Methods in Surgical Operations.

At a meeting of the Surgical Society held on July 27th M. Doyen delivered an interesting address on Rapid and Slow Methods of Operating. He said that prolonged operations had come into use since the discovery of the means of producing anæsthesia and preventing sepsis. The earliest of the prolonged operations were those in which the écraseur of Maisonneuve and Chassaignac was employed. The inventor of the serre-nœud aimed at the prevention of purulent infection. At the present time the rapid and slow methods had each their respective advantages. Most operations consisted of two distinct stages, the first being the removal of the affected part (*exérèse*) and the second being the procedures preliminary to closing the wound (*réparation*). The first stage ought to be accomplished in the least time possible so as to avoid loss of blood and to diminish surgical shock. The second stage, on the other hand, required both time and care in order that a good result might be secured. It was only by following a simple and definite method that the affected part could be removed both quickly and well. Skilful management of the first stage tended to simplify the second stage. In some instances the whole of an operation might include no more than one of the two stages already mentioned; for instance, the removal of large naso-pharyngeal polypi consisted only of the first stage and operations for fistula only of the second stage. Gastro-intestinal operations consisted principally of the second stage, because the removal of the affected part required minute precautions and complicated procedures. Every surgeon ought to possess manual dexterity and presence of mind sufficient for the rapid performance of such stages of an operation as should not be prolonged; he would then be able to give the necessary time to the ligatures, the sutures, and the closing of the wound. The future in surgery would belong to the most skilful and to those who followed the best methods.

Reflex Facial Movements.

At a meeting of the Medico-Chirurgical Society held on July 10th M. Maurice Bloch said that it was common enough to see the features of patients distorted with pain, but on carefully observing this reflex he had observed that it sometimes appeared on the side opposite to the seat of the pain. A man suffering from intestinal pain on the right side had facial distortion on the left side. Another man suffering from crural neuritis made spasmodic movements with the orbicularis muscle and the eyelids of the opposite side. This fact was an additional proof of the decussation of the sensory nerves and the close connexion of the sensory and motor fibres in the same cerebral hemisphere. This sign might be looked for in various other conditions and might, perhaps, in course of time become valuable. Care must be taken to distinguish between reflex grimacing and tic.

The Influence of Sea Salt on the Development of the Ova and Larvæ of Ankylostomum.

At a meeting of the Academy of Medicine held on July 25th M. Calmette said that he had found that common salt had no action on the ova of ankylostomum, but that, on the other hand, it affected powerfully the larvæ even in a solution of 2 per cent. strength. In salt water the larvæ generally died from two to seven days after coming out of the ovum. M. Calmette made experiments with the water of four ditches at Valenciennes the water in which contained salt added in proportions varying from 1·16 to 3·97 per cent. In the solutions of 1·16 per cent. strength the ova hatched out quite well but the larvæ died in 15 days. In the solutions of 3·97 per cent. strength the ova did not hatch out, but if after some time they were transferred to a normal medium hatching then took place, which proved that the salt had no destructive action on the ova. Salt water, however, could not be used in coal mines for the prevention of ankylostomiasis and energetic disinfection of the infected areas would be necessary.

Poisoning by Unripe Tomatoes.

A family consisting of four persons—father, mother, and two sons—fell ill two and a half hours after one of their meals, all complaining of violent colic and profuse diarrhœa. The father and one of the sons were in a very low condition and the medical man who was called in was surprised to find dilatation of the pupil in all the patients. The cooking vessels showed no particular feature; meat did not form a part of the food; and the only constituents of it which attracted attention were some tomatoes not fully ripe. The patients soon recovered after taking ipecacuanha and some tea with rum in it. A few days later the same practitioner was called to see a young man who presented similar symptoms one and a half hours after taking food which consisted partly of tomatoes. Some of them remained over and were seen to be not quite ripe. These two cases are interesting, for examples of poisoning by tomatoes have hardly ever been reported.

August 7th.

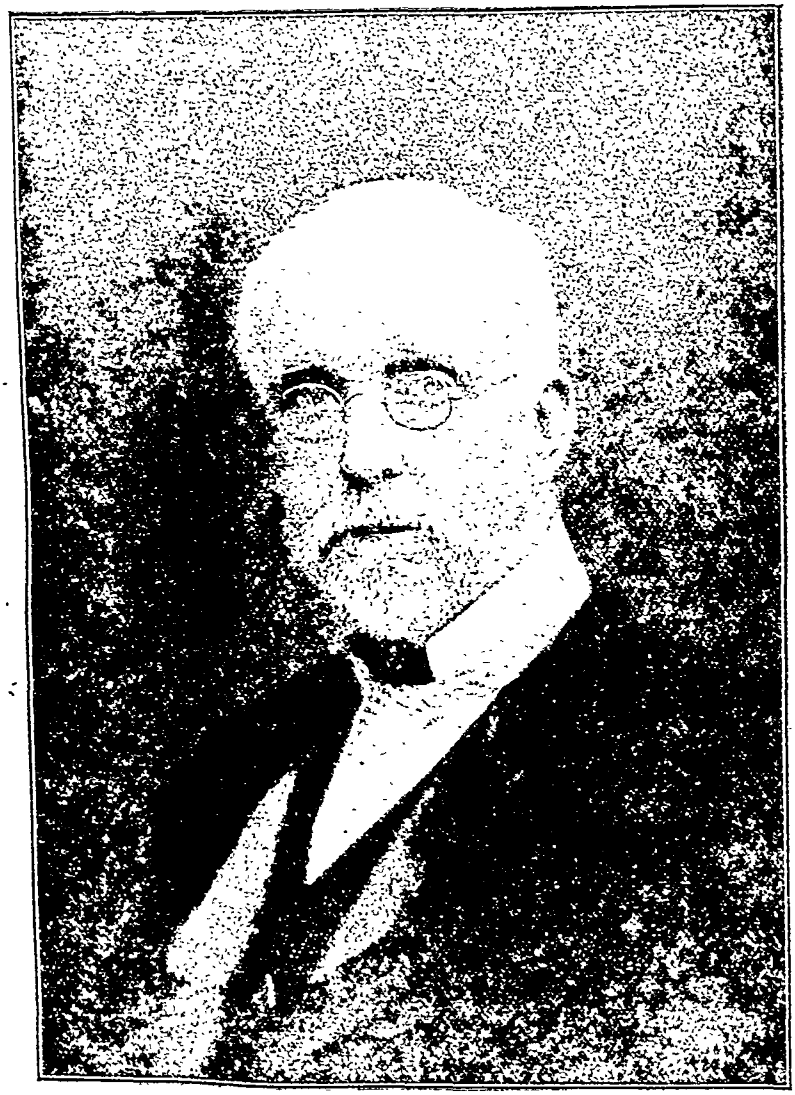
Obituary.

CHRISTOPHER HEATH, F.R.C.S. ENG.,

CONSULTING SURGEON, UNIVERSITY COLLEGE HOSPITAL, ETC.

WE regret to announce the death, which occurred suddenly on August 8th, at his residence, 36, Cavendish-square, W., of Mr. Christopher Heath, F.R.C.S. Eng., Emeritus Professor of Clinical Surgery in University College, London, and a past President of the Royal College of Surgeons of England. Christopher Heath was born in London in 1835, being the grandson of Mr. John Heath, a surgeon in the Royal Navy, who served in the flagship under Lord Howe about 100 years ago. He was educated at King's College School and at King's College and King's College Hospital, London. He served as a surgeon with the Baltic Fleet during the Crimean war in 1855 and in 1856 he became a Member of the Royal College of Surgeons of England, proceeding to the Fellowship in 1860. In the year 1856 he was appointed demonstrator o anatomy at Westminster Hospital and six years later h was made lecturer on anatomy and assistant surgeon at th same hospital. In 1866 he was appointed assistant surgeo and teacher of operative surgery at University Colleg Hospital and in 1875 he became Holme professor o clinical surgery and full surgeon at the same hospital. It was while he was at Westminster Hospital that he wrote his well-known "Practical Anatomy," a ninth edition of which was published in 1902, and the year after his appointment to University College Hospital he was awarded the Jacksonian prize for his essay upon "The Injuries and Diseases of the Jaws, including those of the Antrum, with the Treatment by Operation or Otherwise." In 1881 he was elected a member of the Council of the Royal College of Surgeons of England and in 1895 President of that body, a post which he held also during the year 1896.

Christopher Heath was an admirable teacher and the clearness and practical nature of his style are well known by his clinical lectures on surgical subjects, of which he published two series—one in 1895 and the second in 1902. Among his other well-known works were "A Course of Operative Surgery," the second edition of which appeared in 1884, and the widely-read "Manual of Minor Surgery and Bandaging," which ran into 12 editions. He was the editor of "A Dictionary of Practical Surgery," a well-known work which appeared in 1886. In 1897, as President of the Royal College of Surgeons of England, it fell to his lot to deliver the Hunterian Oration, the text of the oration being "John Hunter considered as a Great Surgeon." A very full abstract of the lecture appeared in THE LANCET of Feb. 20th, 1897, and in the same year he had the honour of delivering the second course of the Lane Medical Lectures which had recently been founded in connexion with the Cooper Medical College in San Francisco. To quote the words of Dr. Cooper Lane, the President of the College, "this course was addressed especially to the students of that school but was also attended by some hundreds of medical men of the Pacific coast; the attention of the audience to the teachings of this eminent English surgeon was markedly



Chrs Heath

intense and reverent. The closing lecture, 'A Century of Surgery,' was replete with illustrations of the advancement of surgery during the nineteenth century. As a contributor to this progress great distinction was given to Lord Lister. Other men, both Europeans and Americans, who have aided in this advancement received appropriate mention. The lectures of Mr. Heath were characterised by a judicious blending of the science and the art of surgery—of the one not so much as to be tedious, of the other enough for guidance to the surgical practitioner. He taught how in boldness not to be rash, how in conservatism not to be inactive. For the appreciated and satisfactory work done by Mr. Heath in San Francisco the New World now brings its honest tribute to add to the honours and renown, so well and worthily won, with which the Old World has so long distinguished him." It was upon this occasion that the University of Montreal conferred upon Mr. Heath the honorary degree of LL.D.

With regard to his surgical work Christopher Heath was a very bold and successful operator and having served as house surgeon to Sir William Fergusson at King's College Hospital he acquired much of the energy and quickness in operating which distinguished that great surgeon. It was in the surgery of the jaw that his operative power could be seen at its best and no one who has seen Mr. Heath removing the superior maxilla is likely to forget the operation. The rapidity and the decision with which it was done were very striking. He was fertile in resources and devised many ingenious methods of overcoming difficulties occurring in the practice of surgery. He had had much operative experience before the introduction of antiseptic surgery, and though he adopted and religiously practised the routine which characterised Listerism at its first introduction yet he was inclined to look down upon many of the precautions as useless fads, and therefore he welcomed the simplifications which more recent years have effected in its procedure. Great, however, as Mr. Heath was as an operator yet it was in his teaching that he shone pre-eminently. For many years as Holme professor of clinical surgery it was his task to instruct and to catechise the students about to present themselves for examination in surgery and the value of these classes to candidates was very great. At one time Mr. Heath had done much "coaching" in surgery and this experience no doubt stood him in good stead; his periods of office as an examiner were also doubtlessly of use, but whatever may be the explanation of it, the fact remains that as a teacher he was truly great. The facts which he communicated to his pupils and the answers which he endeavoured to elicit from them were exactly the facts and the answers which were needed for the *vivâ voce* examinations in surgery. He was somewhat inclined to think that the bacteriological theory of disease was a little overdone and he attached more importance than is customary now to what are called the contributory causes of disease and it must be confessed that he was partly right in this. It was not, however, only in the examinational aspect that his teaching was of value, for it abounded in useful practical points which were likely to remain in the memory of the hearer for long afterwards.

Christopher Heath was a born controversialist of the old-fashioned type—very direct, a hard hitter, and with an intense belief that his opinion was the right one. As in the cases of the late Lord Grimthorpe and the late Sir William Harcourt, his arguments had rather the directness of the bludgeon than the finesse of the rapier.

Mr. Heath was for a long time a leading contributor to THE LANCET and during his Presidency of the Royal College of Surgeons of England he acted as one of the Almoners of THE LANCET Relief Fund.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Moritz Elsner, at Homburg, after a long illness, at the age of 45 years. He was assistant to Professor R. Koch in the Institute for Infectious Diseases in Berlin and published numerous papers on Examination of Water, on Disinfection, the Value of Formaldehyde, &c.—Dr. Paul Schultz of the Berlin Physiological Institute, at the age of 41 years. He edited Munk's "Physiology" and Oestreich's "Compendium" and published numerous researches on the Physiology of Striped Muscles, of Respiration and of the Brain, as well as papers on many other subjects.—Dr. Augustus P. Dudley, Professor of Gynæcology in the New York Post-graduate School.—Dr. Edvard Schönberg, Professor of Midwifery, Gynæcology, and Children's Diseases in the University of Christiania.—Dr. J. L. Chaufleury van Ysselstein, formerly professor in the Amsterdam Medical Faculty, at the age of 86 years.—Dr. Leopold Treitel, a Berlin laryngologist and otologist, whose writings have dealt mainly with deaf-mutism.—Dr. Eduard Lewy, who is looked upon in Vienna as the founder of modern industrial hygiene and who taught this subject in the Vienna Polytechnic.—Dr. Bernhard Honsell, formerly assistant to Professor von Bruns in Tübingen.—Dr. Josef Brettauer of Triest, a well-known ophthalmologist and a voluminous writer.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Medical Men and Legislation.

Dr. Wiley, of the Department of Agriculture, makes a strong plea in favour of more medical men in our national legislature. He states that in the Fifty-seventh Congress there were 319 lawyers, 93 business men, 32 politicians, 12 editors, eight farmers, three teachers, one clergyman, one military man, and three physicians. In view of the great amount of sanitary matter involved in modern legislation it is to be deplored that the medical profession is not largely represented, and by the ablest medical men of the country. It is acknowledged by all that the building of the Panama Canal is more a sanitary than an engineering problem. The men who will really build the canal will be the physicians and health officers who eliminate the germs of malaria and infectious diseases from that locality. If the canal fails it will not be for the lack of dredges, shovels, picks, or machinery nor for want of money, but will be due to the ravages of cholera, of yellow fever, and of other malarial diseases.

The Campaign against Tuberculosis.

The recent meeting of the National Association for the Prevention and Study of Tuberculosis reveals the remarkable progress which has been made within the last year or two in simplifying the methods of prevention and treatment of this disease. The outlook now appears to prove that if equal progress continues to be made the great white plague, the scourge of the race for centuries, will be exterminated from civilised communities within a few years. Climate is now no longer regarded as essential or even the most important factor in its treatment. It is not so much the quality as the quantity of the air consumed. One locality is better than another only because the conditions favour living out of doors. The roof-garden in the city gives as good results as the far-away resorts of Colorado, Arizona, and New Mexico, provided the patient properly and persistently resorts to it. Protests are now being made by the people of the Far West against sending tuberculous persons from comfortable homes in the Eastern States to their climate. An important result of the new opinions in regard to the value of fresh air everywhere in the treatment of tuberculosis is the creation of local sanatoriums in every community for the benefit of the poor. It is no longer a question of State sanatoriums but the agitation is in favour of a sanatorium for every municipality and hamlet. The reports of the association at its late meeting show extraordinary activity among the entire people of this country in adopting the measures recommended for the prevention and treatment of tuberculosis and a greatly diminished death-rate from this disease in the large cities.

Tetanus Neonatorum in Cuba.

The President of the Superior Board of Health of Cuba, Dr. Carlos J. Finlay, attributes the frequency of this disease in that Republic as due to the use of a cheap cotton wick with which the funis is usually tied. An investigation shows that of six balls of this material five were found to be infected with the tetanus bacillus. The mortality records show that in two years 2902 deaths from tetanus were registered. Of this number 2430 occurred in the first year of life. That death was due to infection through the umbilicus was made more certain by a special investigation of 141 deaths by tetanus in the district of Havana, 131 of which occurred in the first year and ten in the second year of life. The remedy which the board has adopted is the distribution of sterile ligature material to the poor throughout the island with information as to the danger of using material of doubtful quality for ligatures. The distribution of sterile ligatures in the city of Havana was followed by a fall of the mortality from this disease from 64 to 38 in 1902 and from 38 to 33 in 1903.

The Conservancy of Potable Waters.

Little attention has hitherto been given to the protection of rivers and lakes in the United States from pollution. But the constantly recurring epidemics in cities and villages, traceable to the infection of the drinking waters, are beginning to excite a much-needed public interest in the subject. The matter was brought to the attention of the International Engineering Congress, when the fact was brought out that 75 per cent. of the 28,000,000 people living in cities discharge their sewage into inland waters, 23 per cent. into the sea or tidal waters, and only 4 per cent. maintain sewage purification plants. Several States have adopted more or less stringent laws against the pollution of running streams and lakes and if the present agitation continues the time is not distant when all urban populations will be compelled to maintain effective disinfecting plants.

New Tax on Immigrants.

The enormous and still increasing number of immigrants to this country is beginning to excite the interest of the public authorities. It is estimated that at least 1,000,000 immigrants will come into the United States during the fiscal year. This number will break all former records. It is learned by agents of the Government who are stationed at the ports of embarkation that foreign governments encourage in various ways the emigration of the criminal classes and those who are likely to be a public charge. This opinion is confirmed by observations made at the great immigration depôts in this country. The result is that the President will recommend to the next congress that the per capita tax on all immigrants be raised to $25 with a view to reduce the number of undesirable immigrants.

Disease due to Electricity.

An interesting observation has been made by Dr. Millener of Buffalo in regard to a disease that has appeared among workers in power-houses. These houses are located at Niagara Falls and 19 cases came under his investigation. It appears that in the case of persons whose employment brings them into the immediate presence of high voltage, alternating current generating or transforming machines, there uniformly result a grave disturbance of the digestive organs, loss of appetite, distress after eating, and whitening of the complexion almost to the colour of chalk. He attributes the cause to the chemical influence of either electric rays or some ray unknown as yet.

July 31st.

NOTES FROM INDIA.

(From our Special Correspondent.)

The Period of Study for Indian Medical Students.

The proposal to increase the period of study for medical students in the Calcutta School from five to six years has been under consideration for some time and was fully discussed at a recent meeting of the University. It was decided, however, to let matters remain as they are. Upon the prospect of an additional year's work a certain section of native medical men, supported by a limited portion of the native press, has been recommending students to go to Japan to study medicine rather than to go to Europe or to remain in Calcutta. One reason given for this advice is the reputed cheapness of study and of living in Japan, while at the same time it is argued that the education is equally good. It is forgotten that students who do not take qualifications recognised by the Government have naturally to shift for themselves as best they can in various forms of private practice. That a certain section of the native press should support such a proposal is not altogether astonishing and it is taken advantage of to attempt a sort of rebuff to British and European medical pretensions. In fact, the proposal was very inadequately considered on its merits and was chiefly made use of as a political move. It is poor patriotism, however, on the part of the Bengali "nation" to sacrifice its medical students for the sake of a very doubtful political snub.

The Plague Epidemic.

The plague epidemic has so far declined that there were only 1742 deaths reported for the week ending July 8th. Of this number the Punjab returned 1112, Bombay Presidency 321, Burma 157, Bengal 61, and the United Provinces 28. The Central Provinces, Central India, and Rajputana are said to be free but this is very doubtful. The great outcry and the disturbances which are raised from time to time about plague are almost invariably about measures and not from fear of the disease. During the past year all the usual religious fairs have been held and the dangers of plague have not diminished the numbers attending them. A warning was issued but there was no prohibition. In the Magh Mela at Allahabad only two cases of plague were reported. In the Dikhanti fair at Hardwar no epidemic disease was discovered and the same is reported of the Dadri fair at Ballia where 750,000 persons attended. It is possible that these fairs being held out of doors rather improve the health of the pilgrims and except for cholera the dangers of disseminating disease are comparatively slight. For the six months of plague in Rangoon there have been 1583 deaths and the expenditure has been Rs. 1,12,285. The disease, however, is still claiming a few victims and several schools have been recently attacked. In Calcutta there have been over 7000 deaths during the same period—not a large proportion compared to its size—and as far as can be gather the expenditure has been very much less. It is reporte that Dr. Martin and the officers engaged in investigati the etiology of plague will remain in India until Octobe They are now engaged in research work in Bombay.

Mortality in the Bombay Presidency.

The report of the sanitary commissioner for the Bomba Presidency for the year 1904 shows an unhealthy state in th province. The deaths exceeded the births by 115,000. I the previous year the deaths were in excess by 234,000, s that the province has decreased in population in two yea by 350.000. It is estimated that since plague first broke ou in 1896 the population has diminished by 1,150,000, and tha as plague deaths have accounted for 1,080,000 there are othe unfavourable causes at work. To those who know ho plague is reported the obvious explanation is that thes deaths have been largely under-estimated. It is noted tha in Ahmedabad the infantile mortality is 550 out of every 100 registered births.

Vaccination in Assam.

Vaccination in Assam seems to be carried on with earnestness and vigour as operations have increased 7 per cent. and one vaccination is performed for every 20·5 persons, whereas the rate in Bengal is 1 to 27. Amongst some of the hill tribes opposition exists to vaccination and in some of the large valleys inoculation is largely practised. The Shillong vaccine depôt is said to have supplied excellent lymph. The percentage of reported successes is put at 98·8. In 11 towns only is vaccination compulsory and it is estimated that in these 71 per cent. of the infants are protected.

July 21st.

Medical News.

Victoria University of Manchester.—At examinations held in the Faculty of Medicine in July the following candidates were successful:—

Final Examination.

Part I.—Daniel Dougal, Philip Ferguson, Jane A. Fleming, C. L. Franklin, E. F. S. Green, J. T. B. Hall, Cecil Hibbert, J. B. Macalpine, R. H. Mercer, F. R. Parakh, G. F. Porter, A. E. Quine, W. H. Ross, H. G. Ward, J. S. Webster, Edgar Wharton, W. A. Wheeldon, A. W. T. Whitworth, and William Wilson.

Part II.—Herbert Ainscow, B. M. Bennett, Frank Boothroyd, T. M. Bride, W. J. Cox, *C. M. Craig, W. R. Douglas, W. B. Hill, Lawrence Kilroe, A. J. Landman, *J. D. Marshall, G. C. Mort, Robert Ollerenshaw, H. B. Pare, Ethel M. Phillips, Joseph Rickards, Leonard Thorp, Douglas Wardleworth, and *S. R. Wilson.

* With honours.

Second Examination.

A. Anatomy and Physiology.—John Allen, Elsie Brown, J. F. Dow, A. K. Eatock, Edward Gandy, J. L. Moir, and H. V. White.

B. Materia Medica and Pharmacy. J. A. Bateman, R. J. Batty, T. B. Bolton, Norman Booth, C. G. Brentnall, C. H. Broomhead, George Crawshaw, W. C. Denniston, H. A. Dunkerley, Frances M. Huxley, F. F. Laidlaw, E. K. Lomas, W. P. Marshall, W. W. Martin, John Morley, Alice Oberdorfer, T. M. Popple, James Ramsbottom, J. B. Rigg, M. C. Skillern-Lawrence, H. E. R. Stephens, John Thompson, R. B. Thompson, W. W. Uttley, and T. G. Williams.

The undermentioned candidates for the degrees of Bachelor of Medicine and Bachelor of Surgery were presented to, and admitted by, the Vice-Chancellor, Dr. A. Hopkinson, on July 27th. The presentations were made by Professor R. B. Wild:—

Colin M'Kean Craig, John Dodds Marshall, and Sidney Rawson Wilson, each second-class honours; Herbert Ainscow, Bertram Marriott Bennett, Frank Boothroyd, Thomas Milnes Bride, William Joseph Cox, William Robert Douglas, William Bertram Hill, Lawrence Kilroe, Abraham Judah Landman, George Cecil Mort, Robert Ollerenshaw, Henry Burton Pare, Ethel Margaret Phillips, Joseph Rickards, Leonard Thorp, and Douglas Wardleworth.

University of Edinburgh.—The following is the official list of passes at the recent professional examinations for degrees in medicine and surgery:—

First Professional Examination.—D. C. Adam, David Aiken, R. J. Allsopp, Fergus Armstrong, T. H. Balfour, G. E. K. Branch (with distinction), J. A. Browne, B.A., O. S. Bullock, J. R Bullman, W. L. Burgess (with distinction), B. N. Burjorjee, G. L. Cawkwell, J. J. P. Charles, A. Dumas Child, W. F. Christie, Gladys H. Cook, James Crocket, J. M. Dalzell, Lucy E. Davies, R. W. Davies, W. N. Davies, Jemima B. Dickie, John K. M. Dickie, Adelaide A. Dreaper, J. W. C. Drever, William Dunlop, A. L. Dykes, J. M Elliot, A. M. Elliott, Euphemia L. Farmer, B A., H. G. Feltham, W. C. Fragoso, F. R. Fraser, Mary M. Gardner, G. H. Garnett, A. W. Gill, V. H. Gordon, W. T. Graham, E. S. B. Hamilton, H. F. Hamilton, Robert Hamilton, R. C. Harkness (with distinction), John Henderson, B. J. O. Hoare, R. L. Hughes, G. R. Inglis, Flora R. Innes, Hannah M. Irving, B Sc., H. E. Johnson, J. V. Karve, R. R. Kerr (with distinction), G. E. King (with distinction), C. G. Kurien, J. M. Lawl, A. J. B. Leckie, Janet Leiper, H. E. A. Lemerle, W. R. Logan, Mary Low, M.A., W. H. Lowe, R. C. Lowther, W. G. M'Atee, A. D. MacArthur, A. J. M'Connell, P. A. M'Cool, William Macdonald (with distinction), Thomas M'Fetridge, R. B. Macfie, Mary E. B. MacIlwaine, James Machail, M A., William M'Kie, G. V. T. M'Michael, R. D. M. Macpherson, C. G Marais, T. H. R. Mathewson, William Messer, R. W. Miller, A. M. Minford, John Montgomery, J. M. Moyes, James Oag, M.A. (with distinction), J. E R. Orchard, J. E. T. Oxley, J. J. Pace, H. F. Panton, Hugh Paterson, Ella F. Pringle, N. D. Pringle, Myfanwy D. Rees, D. G. Robertson (with distinction), James Robertson, Dermid M. Ross, William Ross, M.A., John M. Scott, K. R. G. Shah, Kerr Simpson, J. C. Smith, M.A., William Stevenson, C. P. A. Stranaghan, R. K. S. Sutherland, James Swan, Arthur L. Taylor, J. A. Thompson, J. G. Thomson, M.A., W. S. Thomson, L. J. Wallis, Allan Watson, Joseph C. Watson, J. P. Whetter, Seymour Williams, John Wilson, D. W. Woodruff, G. G. Wray (with distinction), and Margaret C. Young.

Second Professional Examination.—J. L. Annan, J. P. Berry, H. W. Binks, J. A. Brand, E. A. Brummitt, P. D. Cameron, W. D. Coghill, Theodore Craig, G. H. Dart, Margaret E. Davidson, C. H. Derksen, Thomas Derrick, C. A. A. Dighton, Joanna M. F. Drake, V. L. Evans, J. Letitia D. Fairfield, W. P. Ferguson, M A., B.Sc., Thomas Fraser, Hester M. Henderson, W. S. Heron, A. M. Hewat, Matthew Heyns, W. P. Holden, St. G. M. L. Homan, Lloyd Hughes, J. A. Jamieson, H. C. Johnston, W. D. S. Johnston, A. W. Kendall, J. S. Kinross, A. F. Lee, Cecil R. Letham, H. Bruce Low, C. W. L. Luthgen, G. J. Luyt, B A. (with distinction), L. G. M'Cune, W. S. M'Cune, Thomas M'Ewen, R. J. A. Macmillan, D. J. M'Rae, C. J van der Merwe, J. A. Morris, Ara G. Murchison, A. T. Paterson, O. E. Powell, Barbara Richardson, C. L. Digby Roberts, A. H. M. Robertson, R. L. Scott, Frederick Shannon, H. C. Simpson, J. T. Simson, Thomas Smyth, Alice M. Thompson, Eleanor M. Thompson, H. B. Thomson, L. R. Thomson, A. E. Turnbull, A. M. Vlok, Helen M. Wakefield, R. N. Wallace, W. C. Whiteside, G. S. Williamson, and E. D. Wilmot.

Third Professional Examination.—Alfred Arthur, R. O. E. Atkinson, M.A., R. G. A. Bagnall, C. R. M. Baker, M. M. Sujjad Beg, Mary Brown, Edward Burnet, B.A., Richard Davidson, Pollok Donald, E. W. Dyer, J. G. Fleming, F. S. B. Fletcher, F. H. Somers Gardner, K. N. Ghosh, G. H. R. Gibson, John Gilmour, W. H. Gowans, D. K. Henderson, F. O. Inglis, S B. Legge, J. P. Lowson, M.A., F. J. Luck, W. O. S. M'Gowan, J. B. Mackenzie, R. P. M'Morland, George M'Mullan, W. J. Macnab, John Mathewson, M.A., H. L. Morrow, Janet M. Murray, M A., A. S. Paterson, A. M'Tier Pirrie, C. S. U. Rippon, W. G. Rivers, Thomas Robertson, Æneas Rose, M.A., Frank Ross, W. S Stevenson, G. H. Stofberg, H. G. Sutherland, J. A. Taylor, E. W. Vaughan, A. S. Walker, F. E. Wall, R. M. Wishart, and A. F. Wright.

Third Professional (New Regulations—Pathology only).—D. M. Barcroft, F. G. H. R. Black, Frank Blamire, R. D. Clayton, J. H. Lamb, John Macdonald, G. B. Macgregor, G. D. M'Ivor, Kenneth M'Murtrie, J. M. M Phail, Jamesina J. Marr, C. J. Milne, J. E. Murray, A., J. P. Nowell, J. L. H. Paterson, H. B. Porteous, Claude Pycroft, Graham Robertson, J. M. Ross, Z. M. H. Ross, Elsie B. Saunders, Subrata Chunder Sen, and W. O. Welply.

Foreign University Intelligence.—*Baltimore (Johns Hopkins University)*: Mrs. Florence R. Sabin, M.D., has been appointed Assistant Professor of Anatomy.—*Chicago (Rush Medical College)*: Dr. John B. Murphy of the North-Western University Medical School has been appointed Professor of Surgery.—*Florence*: Dr. E. Filippi has been recognised as *privat-docent* of Experimental Toxicology.—*Greifswald*: Dr. Johannes Sobotta of Wurzburg has been elected to the chair of Anatomy, vacated by the retirement of Dr. Solger.—*Groningen*: Dr. de Vries Reilingh has been recognised as *privat-docent* of Physio-therapeutics.—*Halle*: Dr. Gabriel Anton of Gratz is expected to succeed the late Professor Wernicke in the chair of Psychiatry.—*Innsbruck*: Dr. Bernhard Mayrhofer of Linz has been appointed Extraordinary Professor of Odontology.—*Leipsic*: Dr. Hans Steinert has been recognised as *privat-docent* of Internal Medicine.—*Naples*: Dr. Rosario Buccheri has been recognised as *privat-docent* of the Surgery of Children.—*New York (Post-Graduate School)*: Dr. Samuel W. Bandler has been appointed Assistant Professor of Gynæcology.—*Padua*: Dr. Ettore Ravenna has been recognised as *privat-docent* of Pathological Anatomy.—*Rome*: Dr. Samuele Sereni has been recogised as *privat-docent* of Histology.—*Rostock*: Dr. Hermann Brüning of Leipsic has been recognised as *privat-docent* of Children's Diseases.—*St. Petersburg (Military Medical Academy)*: Dr. A. Redlich has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Strasburg*: Dr. Gustav Schickele has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Tokio*: Dr. Elwin Baelz, who taught medicine in the University for 25 years, most of the present generation of Japanese medical men having been his pupils, has now returned to Stuttgart, his birthplace. He had a great "send off," both by Japanese and by the English residents. The Emperor conferred upon him the Grand Cross of the Rising Sun.—*Turin*: Dr. Filippo Carta has been recognised as *privat-docent* of Surgery.—*Vienna*: Professor Nothnagel's chair has been declined by Professor Friedrich Kraus, Director of the Second Medical Clinic in the Berlin Charité. The selections for the chair of Hygiene, which has now been vacant for three years are: (1) Dr. Arthur Schattenfroh of the Vienna Institute of Hygiene. (2) Professor Prausnitz of Gratz, and (3) Professor Lode of Innsbruck.

A Russian Medical Editor and his Colleagues.—As is known, the editor of the *Journal of the Pirogoff Society of Medical Men* has been cited to answer for the appearance in the journal of articles not allowed by the censor. The provincial medical practitioners of a large number of districts have addressed the Procureur of the Moscow judicial circuit saying that they as contributors to the journal desire to be included in the indictment to show "their solidarity with the editor."

The Water-Supply of Mortehoe and Woollacombe.—The new water-supply for Mortehoe and Woollacombe in Devonshire was inaugurated on August 1st. The new supply is an extension of the Ilfracombe undertaking, being connected to the Ilfracombe mains by four and a half miles of iron pipe. The cost of the scheme is about £7000, exclusive of £2000 which will be required for the filter beds.

High Death-rates in Chili.—Mr. Rowley, acting British Consul-General at Valparaiso, in his report for 1904, just received at the Foreign Office, states that the mortality per 1000 was 55 in Talca, 54 in Chilán, 47 in Concepcion, 46 in Serena, 45 in Valparaiso, 43 in Curicó and Talcahuano, 38 in Santiago, and 35 in Antofagasta.

Sewage Disposal at Tavistock.—A Local Government Board inquiry was held at Tavistock in Devonshire on August 2nd, respecting the application of the urban district council for sanction to borrow £6250 for the purposes of sewerage and sewage disposal.

Teignmouth Hospital.—As a result of a recent fête the sum of £200 has been raised for the Teignmouth Hospital.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Factories and Workshops Legislation.

In the last days of the session an important private Members' Bill was introduced with the object of amending the law relating to factories and workshops It was brought in by Mr. Tennant, Mr. Button, Sir Charles Dilke, Sir John Stirling-Maxwell, Mr. Burns, Mr. Talbot, Mr. McKenna, and Mr. Haldane. The promoters realised, of course, that no progress could be made this year but now that the text has been issued as a Parliamentary paper the public interested will be able to consider the proposals and from the Parliamentary point of view that is helpful. It is pointed out in a memorandum printed with the Bill that the object of the first clause is the improvement and enforcement of the law relating to the sanitary condition of all places to which work is taken by outworkers. It is proposed to treat all such places, unless specially exempted by the Secretary of State, as if they were workshops, so far as concerns the provisions of the Factory Act and the Public Health Acts which relate to sanitation and inspection. It is also proposed to extend to the giver out of work the same responsibility for the sanitary condition of these places as is already placed upon the actual occupier or owner under the existing law Under this scheme the law will be enforced in the first instance, as at present, by the sanitary inspector Thus no new official will be introduced, unless the present official makes default, in which case the factory inspector, by virtue of his supervisory control over workshops, will have power to act The second clause, which also relates to outworkers, is intended to require further precautions with the object of preventing the giving out of clothes to be made, cleaned, or repaired on premises where there is infectious disease The Bill contains several new requirements with regard to the sanitary conditions of factories and workshops, especially with regard to overcrowding in underground workshops, the provision of adequate window space in new factories and workshops, precautions against injury to eyesight by artificial light, the condition of floors, protection against wet, the provision of lavatories, and the supply of drinking water for workpeople At present the provision of adequate ventilation is not compulsory except in special cases and for special purposes, it is proposed to make it compulsory everywhere

HOUSE OF COMMONS.

THURSDAY, AUGUST 3RD

Overcrowding of Wards for the Insane in a Workhouse.

Mr. JOSEPH DEVLIN asked the Chief Secretary for Ireland whether his attention had been called to the overcrowding of the wards for the insane in the Belfast workhouse, due to the fact that the Belfast corporation refused to supply the necessary asylum accommodation for the patients, and whether this overcrowding was denounced by the official inspector of lunacy in December, 1904, who recommended that inexpensive asylum accommodation should be provided for these patients elsewhere, and whether, seeing that in spite of the official recommendation nothing had been done by the corporation in the matter and that the number of these patients at the workhouse was increasing, he would order an inquiry into the subject or cause effective representations to be made to the local authorities with regard to it —Mr. LONG answered The number of insane inmates of Belfast workhouse has in recent years been greatly reduced by the transfer of such persons to the Belfast district lunatic asylum Since 1898 the number of insane in the workhouse has been reduced from 436 to 96 In December, 1904, the inspectors of lunatic asylums recommended that inexpensive buildings should be erected in connexion with the asylum for the accommodation of the insane inmates of the workhouse The necessary buildings are now in course of erection

The Alleged Harsh Treatment of a Medical Officer.

SIR WALTER FOSTER asked the President of the Local Government Board whether he would explain why a district medical officer of the Aylesbury union after being re elected for 23 years in succession had now, when 64 years old and eligible in one year for superannuation, been deprived of his appointment, and whether, in view of the Superannuation Act, 1896, he proposed to take any and if any, what action in the matter —Mr GERALD BALFOUR replied Until recently the late medical officer did not reside in his district and hence he was only appointed from year to year I am not informed why, when an appointment had to be made this year, the guardians preferred to appoint the present holder of the office but it was within their competence to do so if they thought fit The matter is not one in which I can take any action

Small pox in Liverpool

dent of the Local Government
lled to the recently published
of Liverpool upon small pox
the conclusions arrived at by
Dr R J Reece, that small pox
ls, and whether, in view of the
overnment Board proposed to
issue any further report or observations on the subject of the Liverpool small pox hospitals —Mr GERALD BALFOUR replied I have seen the
report of the medical ocal Government Board
proposes shortly to to the Liverpool town
council on the subject

MONDAY, AUGUST 7TH

The Medical Profession and the Army

Dr E C THOMPSON asked the Secretary of State for War what steps had been taken to form a reserve of officers to the Royal Army Medical Corps —Mr ARNOLD FORSTER answered The question of whether it may be possible to form a reserve has been under consideration but no
decisi
Mr whether there was a properly
traine lance of any army exceeding
55,000 Mr ARNOLD FORSTER replied
The w vide for a considerable portion
of the medical staff being civilians As the numbers of the latter available on mobilisation have not been determined on it would not be practicable to give the honourable Member any precise figures on the subject I may add that the Army Council is aware that the strength of the Royal Army Medical Corps is not yet adequate and it is making every endeavour to increase it The experience of the last war showed that we can rely on a large number of highly trained and competent civilian medical officers

TUESDAY, AUGUST 8TH

The Nursing of the Sick Poor in Workhouses

Mr TALBOT asked the President of the Local Government Board whether the order which he had announced to be in preparation with regard to the nursing of the sick poor in workhouses might be expected to be issued before the end of the current year —Mr GERALD BALFOUR replied I hope that this may be done

BOOKS, ETC, RECEIVED

ALCAN, FÉLIX, 108, Boulevard Saint Germain, Paris

Les Tumeurs de l'Encéphale Manifestations et Chirurgie Par le Dr H Duret, Ex Chirurgien des Hôpitaux de Paris Professeur de Clinique Chirurgicale à la Faculte Libre de Lille Price Fr

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta street, Covent Garden W.C.

A Manual of Veterinary Hygiene By Colonel F Smith C M.G., Army Veterinary Department, Fellow of the Royal College of Veterinary Surgeons, Fellow of the Institute of Chemistry Third edition, rewritten Price 15*s* net.

BROWNE AND NOLAN, LIMITED, Dublin

The Medical Profession By M Foster Reaney, M B Lond, M R C S, L R C P, D P H Lond, I M S The Carmichael Prize Essay for 1904 Price 3*s*, post free 3*s* 3*d*.

CHURCHILL, J AND A, 7, Great Marlborough street, W

Medical Officers of Schools Association On the Hours of Sleep at Public Schools Based on an Inquiry into the Arrangements existing in Forty of the great Public Schools in England, and others in the U S A A Paper read before the Association on May 11th, 1905, by T D Acland, M A, M D Oxon, F R C P, Physician to St Thomas's Hospital, and Consulting Physician to the Hospital for Diseases of the Chest, Brompton. Price 1*s*

DEACON, CHARLES WILLIAM, AND CO, Charing Cross Chambers, Duke street, Adelphi, W C

"Always" By S Eldom *Price 2s 6d*

FISCHER, GUSTAV, Jena

The Accessory Sinuses of the Nose and their Relations to Neighbouring Parts *Illustrated by Fifteen Coloured Plates* By Dr Gustav Killian Professor of Laryngology and Rhinology in the University of Freiburg i.B Translated by D R Paterson, M D M R C P, Assistant

Institut
Wien] *Von Dr* Julius Bartel, Assistent am Institut Abdruck
aus dem Klinischen Price M 3.20.
Atlas der Menschliche Pappenheim
Erste Lieferung Ta
Die Therapie der Magen und Darmerkrankungen *Von Dr Carl* Wegele Besitzer einer Anstalt fur Magenkranke in Bad Konigsborn (Westfalen) Dritte ganzlich umgearbeitete Auflage *Price M 7, geb, M 8*

FISHMONGERS, WORSHIPFUL COMPANY OF, Fishmongers' Hall, Adelaide place, London Bridge, E C

Experiments and Observations on the Vitality of the Bacillus of Typhoid Fever and of Sewage Microbes in Oysters and other Shellfish Investigations on behalf of the Worshipful Company of Fishmongers, London, by E Klein, M D, F R S Price not stated

GOODALL AND SUDDICK, LIMITED, Cookridge street, Leeds

Report upon the Surgical Treatment of the Non Malignant Diseases of the Stomach *Presented to the Surgical Section of the British* Medical Association, at Leicester, July 1905 at the opening of the Discussion, by B G A Moynihan, M S, F R.C S, Leeds

GREEN, WILLIAM, AND SONS, *Edinburgh* and London

A Contribution to the Pathology of the Endometrium By Jessie M Macgregor, L R C P & S, M D, Junior Acting Medical Officer Edinburgh Hospital for Women and Children Lecturer on Gynæcology in the Edinburgh School of Medicine of the Royal Colleges Price not stated

HOLDER, ALFRED, I, Rotenturmstrasze, 13, Wien

Die Nebenhohlen der Nase Nach photographischen Aufnahmen 124 Praparate in Naturlicher Grösze dargestellt Im Auftrage der Ungarischen Akademie der Wissenschaften Von Prof Dr A Onodi, A O Professor der *Rhino Laryngologie* an der Universitat in Budapest, Mitglied der Ungarischen Akademie der Wissenschaften Price not stated

LEHMANN, J F, *Heustrasse 20, Munchen*

Lehmann's Medizinische Atlanten Band V Atlas typischer Röntgenbilder vom normalen Menschen, ausgewahlt und erklart *nach chirurgisch praktischen Gesichtspunkten*, mit Berucksichtigung der Varietaten und Fehlerquellen sowie der Aufnahmetechnik Von Dr med Rudolf Grashey Assistenzarzt chirurgischen Spital links d Isar in Munchen. Price M 16.

LONG, JOHN, 13 and 14, Norris street, Haymarket, *London*

Glimpses of the Ages, or the "Superior" and "Inferior" Rac so called, discussed in the Light of Science and History Theophilus E Samuel Scholes, M D, &c Price 12*s* net

MORING, ALEXANDER LIMITED, THE DE LA MORE PRESS, 32, George street, Hanover square, W

Crystal Gazing Its *History* and Practice with a Discussion of the Evidence for Telepathic Scrying With an Introduction by Andrew Lang M A, LL D By Northcote W Thomas, M A Price 3*s* 6*d* net

Thought Transference a *Critical and Historical* Review of the Evidence for Telepathy, with a Record of New Experiments 1902-1903 By Northcote *W Thomas, M A Price 3s 6d.* net

MURRAY, JOHN Albermarle street W

The Boy and His School: What it Can and What it Cannot G Him By Robert L Leighton, Headmaster of the Bri *Grammar School Price 2s 6d* net

NEW SYDENHAM SOCIETY, London (Agent, H. K. LEWIS, 136, Gower-street, W.C.)

An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology. Compiled for the New Sydenham Society (A Continuation of the "Atlas of Pathology"). Chiefly from Original Sources. Fasciculus XXIII. Being XV of The Clinical Atlas. Drug Eruptions. Plates CXLV. to CLII. Price to non-subscribers, half a guinea.

OFFICE OF THE SUPERINTENDENT OF GOVERNMENT PRINTING, INDIA, 8, Hastings-street, Calcutta.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series. No. 17. Snake-venoms in Relation to Hæmolysis. By Captain George Lamb, M.D., I.M.S. Price Annas 6 or 7*d.*

PATON, J. AND J., 143, Cannon-street, E.C.

Paton's List of Schools and Tutors. (An Aid to Parents in the Selection of Schools.) Eighth Annual Edition, 1905-1906. Price 1*s.* 6*d.*

PENTLAND, YOUNG J., Edinburgh and London.

The Nervous Affections of the Heart. Being the Morison Lectures delivered before the Royal College of Physicians of Edinburgh in 1902 and 1903. By George Alexander Gibson, M.D., D.Sc. Edin., LL.D. St. And., F.R.S. Edin. Second edition. Price not stated.

REBMAN, LIMITED, 129, Shaftesbury-avenue, W.C.

A System of Physiologic Therapeutics. Edited by Solomon Solis Cohen, A.M., M.D., Professor of Clinical Medicine in Jefferson Medical College. Volume XI. Serum Therapy, Organotherapy, *Radium, Blood-letting,* Therapeutics, X Ray Therapy, and Index digest to all volumes. Price 12*s.* 6*d.* net. Price of the complete work in 11 volumes, £6 6*s.* net.

RICKER, K., Nevski, 14, St. Petersburg.

Ueber Lebensprognosen. Von Dr. E. Moritz. 2te Auflage. Price not stated.

ŠAFÁŘ, JOSEF, Wien.

Die Infektionskrankheiten rucksichtlich ihrer Verbreitung, Verhutung und Bekampfung. Kurzgefasstes Lehrbuch fur Militärärzte, Sanitatsbeamte *und Studierende der Medizin.* Von Oberstabsarzt Dr. Ludwig Kamen, stand. Mitglied des k. u. k. Militar-Sanitats-Komitees und Lehrer an der Militärärztlichen Applikationsschule in Wien. Militärärztliche Publikationen Nr. 87, Lieferung 2, Preis K. 1.80 or M. 1.50. Nr. 94, Lieferung 3-4, Preis K. 3.60 or M. 3.

Mikroskopische Untersuchung des Wassers mit Bezug auf die in Abwassern und Schmutzwassern vorkommenden Mikroorganismen und Verunreinigungen. Von Mr. ph. Emanuel *Senft,* k. u. k. Militarapotheker. Aus dem Chemischen Laboratorium des k. u. k. Militarsanitatskomitee (Vorstand Generalstabsarzt Prof. Dr. Florian Kratschmer). *Price* M. 9.60.

SAUNDERS, W. B., AND *Co.*, Philadelphia and London.

Addresses and Other Papers. By William Williams Keen, M.D., LL.D., F.R.C.S. (Hon.), *Professor of Surgery,* Jefferson Medical College, Philadelphia. Price 17*s.* 6*d.* net.

UNIVERSITY CORRESPONDENCE *COLLEGE*, Burlington House, Cambridge (London Office, 32, Red Lion-square, Holborn).

The University Tutorial Series. Matriculation *Directory.* No. XL., June 1905. With Articles on Text-books. Price 1*s.* net.

VIGOT FRÈRES, 23, Place de l'Ecole de Médecine, Paris.

Le Celluloid en Orthopédie. Par le Docteur L. de Meller de Labarthe, Ancien Interne des Hôpitaux de Berck. Price Fr. 6.5.

L'Evaluation des Incapacités Permanentes Basées sur la Physiologie des Fonctions Ouvrières des Diverses Parties du Corps. Par le Dr. Ch. Remy, Professeur Agrégé à la Faculté de Médecine de Paris. Rapport présenté au Congrès Médical International des Accidents du Travail. Liège, 1905. Price Fr. 1.50.

WRIGHT, JOHN, AND CO., Bristol. (SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.)

Natural Science in Hygiene, or the Life-history of the Non-Bacterial Parasites Affecting Man. For the Use of Students of Public Health. By James Porter Watson, M.A., B.Sc., M.D. Edin., Diplomate in Public Health (Univ. of Camb.). Price 1[illegible] net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ANDERSON, WILLIAM JAMES, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer and Public Vaccinator by the Helston (Cornwall) Board of Guardians, and has also been appointed Certifying Surgeon under the Factory and Workshop Act for the Helston District of the county of Cornwall.

BLUMFELD, J., M.D. Cantab., has been appointed Honorary Anæsthetist to St. Mary's Hospital, Paddington, W.

B[illegible], VICTOR, M.S., M.D., B.Sc. Lond., F.R.C.S., M.R.C.P., has been appointed Junior Research Scholar to the Cancer Investigation Department of the Middlesex Hospital.

BU[illegible], M.D. Lond., has been appointed a Vice-president of [illegible] Devon and Cornwall Sanatorium for Consumptive Poor.

[illegible], M.B., C.M., has been appointed Clinical Assistant to the Hospital for Diseases of the Skin, Blackfriars, S.E.

L[illegible], M.D., has been appointed Clinical Assistant to the Hospital for Diseases of the Skin, Blackfriars, S.E.

FIELDEN, E., M.B., M.S. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Bracknell District of the county of Berks.

GOLDIE, E. M., M.D. Edin., has been appointed Visiting Surgeon to the Royal Merchant Seamen's Orphanage, Snaresbrook.

POOLEY, J. M., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer and Public Vaccinator for the Nettlebed District of the Henley Union.

ROBINSON, FRANK, M.D., D.P.H., *has been appointed Deputy Medical* Officer of Health of the City of Westminster.

RODERICK, H. B., M.D., B.C. Cantab., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

WILLIAMS, ARNOLD WINKELRIED, M.B., C.M., D.P.H. R.C.P.S., has been appointed Clinical Assistant to the Hospital for Diseases of the Skin, Blackfriars, S.E.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BOURNEMOUTH, ROYAL VICTORIA HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £50 a year, with board, apartments, and laundress.

ESSEX AND COLCHESTER GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and residence.

EXETER CITY ASYLUM.—Assistant Medical Officer. Salary £150 a year, with board, lodging, and washing.

GLASGOW EYE INFIRMARY.—Resident Assistant House Surgeon. Salary £75 per annum, with apartments and board.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £100, with board, residence, and laundry. *Also Assistant* House Surgeon. Salary £50, with board, residence, and laundry.

ISLE OF MAN, NOBLE'S HOSPITAL AND DISPENSARY, Douglas.—Resident House Surgeon, unmarried. Salary £90 a year, with board and washing.

LISTER INSTITUTE OF PREVENTIVE MEDICINE.—Studentship. Value £150, tenable for one year, but renewable.

LIVERPOOL, CITY OF, INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, washing, and lodging.

LIVERPOOL EYE AND EAR INFIRMARY, Myrtle-street.—House Surgeon. Salary £80 per annum, with board and residence.

METROPOLITAN WATER BOARD.—Senior Chemical Assistant. Salary £300. Also Senior Bacteriological Assistant. Salary £300. Also Junior Chemical Assistant. Salary £175. Also Junior Bacteriological Assistant. Salary £175. Also Two Laboratory Assistants. Salary £75 each.

NEWCASTLE-UPON-TYNE, COLLEGE OF MEDICINE (UNIVERSITY OF DURHAM).—Lecturer in Medical Jurisprudence.

PENDLEBURY, MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident *Medical Officer,* unmarried, for six months, eligible for election as Senior Medical Officer for another six months. Salary at rate of £50 a year when Junior, and £100 a year as Senior, with board and lodging.

ST. LEONARD, SHOREDITCH, INFIRMARY, Hoxton-street, N.—Second Assistant Medical Officer. Salary £100 per annum, with rations, washing, and apartments.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six *months.* Salary at rate of £50 a year, with board, lodging, and washing.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. *Salary £100 per annum,* with rooms, board, and washing.

TYNEMOUTH, COUNTY BOROUGH OF.—Medical Officer of Health. Salary £300 per annum, *increasing to £400.*

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry provided.

YORK CITY LUNATIC ASYLUM.—Resident Medical Officer. Salary £400 per annum, with house, coal, laundry, &c.

Births, Marriages, and Deaths.

BIRTHS.

PAYNE.—On August 1st, at Melville, Shepherd's-well, the wife *of Edward Bruce Payne,* M.R.C.S., L.R.C.P., of a son.

POLLARD.—*On August 4th,* at the Royal Naval Hospital, Chatham, the wife of Inspector-General F. R. H. *Pollard,* R.N., of a daughter.

SEALE.—On July 5th, at Oakfield, Ceres, C.C., the wife of F. A. Seale, M.D., of a daughter.

DEATHS.

HEATH.—On August 8th, at *Cavendish*-square, Christopher Heath, F.R.C.S., aged 70 years.

OGLE.—At the Vicarage, Highgate, on August 8th, John William Ogle, M.D. Oxon., F.R.C.P. Lond., of 9, Gloucester-place, Portman-square, London, consulting physician to St. George's Hospital, aged 81 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

DIFFICULTIES UNDER THE VACCINATION ACTS.

To the Editors of The Lancet.

Sirs,—In your note on the letter from your correspondent "A" you are in error in saying that "the public vaccinator gets no fee unless he actually does vaccinate the child." A minimum fee of 1*s.* is due to him for every name inserted in the "H" forms sent him by the vaccination officer whether he vaccinates or not. As regards your correspondent "A," I advise him to acquaint himself with, and comply with, the Vaccination Acts; he will then increase his fees, will serve his country better, and there will be no excuse for anyone to call at his patients' houses. Thus he will not be worried with exaggerated and often untrue stories about the public vaccinator and, in addition, he will not find it necessary to rush into print to air his ignorance about the above much-maligned individual. Your correspondent is like all the other grumblers, wrong in his law.

I am very tired of the complaints which appear from time to time against public vaccinators and I have come to the conclusion that in nine cases out of ten they are uncalled for. I feel sure if your correspondent would inquire thoroughly into his complaint he would find either that the actions stated were justified, or had been exaggerated, or nothing of the kind happened. He has apparently only one side of the story.

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CHAULMOOGRA OIL AND SYPHILIS.

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Sirs,—I should be glad if any of your numerous readers can su me with information as to the therapeutic effects, action, principle, of oleum gynocardiæ (chaulmoogra oil), especially with referenc the treatment of syphilis. Thanking you in anticipation,

I am, Sirs, yours faithfully,

Dr. Med. Jos. Fr. von Cripp

Bad-Hall, Oberösterreich (Upper Austria), August 1st, 1905.

THE RED LAMP AND THE BARBER'S POLE.

To the Editors of The Lancet.

Sirs,—For some time past I have puzzled over the origin of red lamp which is placed by some medical practitioners outside t "surgeries" and which at night is often, especially in the subu the only attractive object in the whole road. I have asked one or t medical men about it and they do not seem to know why they us themselves and I feel sure it would interest many of them to know history if some one of your numerous readers would tell it. It seem to me to symbolise blood-letting, but the barber's pole appears have been used with that signification when the barber-surge did that kind of work, for I read that it signified "the which the patient grasped, its spiral decoration in imitation of t bandage, and the basin to catch the blood." I read elsewhere, w regard to the basin, "often with a brass basin at the end of it," and also remember to have read somewhere that the pole symbolised t "poll" or head (derived from the middle Dutch "pol"—head), but do not believe this, as the word "pole" seems to have been derived fr Anglo-Saxon "pal" or Latin "palus," a stake.

I am, Sirs, yours faithfully,

Lucus.

July 24th, 1905.

HARD WATER AND RHEUMATOID ARTHRITIS.

To the Editors of The Lancet.

Sirs,—My wife suffers acutely from rheumatoid arthritis in the hi joint and from sciatica. Our water-supply is impregnated with lim Would removal from the district or a supply of soft water material facilitate a cure? Everything tried has failed.

I am, Sirs, yours faithfully,

A. M. Z.

August 8th, 1905.

*** So far as we are aware no connexion between rheumatoid arthrit and the character of the water-supply has been recognised. As t removal from the district, a warm, dry, and equable climate is desideratum.—Ed. L.

BOVININE AS A DRESSING.

To the Editors of The Lancet.

Sirs,—Having read the letter under the above title in your issue o August 5th I think it may be worth while to relate my experience o bovinine as a dressing. In the spring of 1904 I had a patient under m care in hospital who was severely burnt on the back. The patient w a woman who in an epileptic fit fell into the fire and had a burn of th third degree from the occiput to the level of the fifth dorsal spine an from the acromial angle on the left side to the middle of the delto muscle on the right. When she came under my care she had a clean granulating wound of irregular shape about 12 by 20 inches in it greatest diameters. I had just read some accounts of the result obtained in America by treating large granulating wounds wit bovinine and determined to try it. I dressed the wound daily wit bovinine and on three occasions covered different parts of the surfac with Thiersch's grafts, dressing them with the bovinine in the same manner as the granulating surface. The grafts took unusually well and the whole surface was completely healed in a far shorter time than I had expected. When the patient left the hospital the whole area that had been burnt was covered with a soft healthy flexible skin and there was no tendency towards cicatricial contraction or deformity. I heard of the patient some months afterwards and there was still no tendency to contraction or breaking down of the new skin. Since then I have used bovinine in several cases in the treatment of chronic ulcers and think that in all cases it hastened the cure. How exactly the meat extract acts I cannot say but I am inclined to think that it affords a suitable nourishment for the rapidly growing new tissues; certainly in the first case, where I employed skin grafts as well, they took more readily and grew more rapidly than usually. The one thing which appears to be absolutely necessary for the success of this treatment is that the granulating surface should be clean and healthy. I may mention that I did not find the mixture of bovinine with antiseptics (as thymol or iodoform) which are recommended a success.

I am, Sirs, yours faithfully,

Dublin, August 7th, 1905. R. ATKINSON STONEY, M.B. Dub.

◆

Mr. Ceci Revis.—The American quart of 32 ounces was, we believe, referred to but this does not affect the general argument in favour of the production of milk on the rigorously clean lines indicated. The first consideration in regard to milk-supply is surely the public health and not dividends.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

NDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.). Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.).

ESDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

EDNESDAY (16th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.) Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M., National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.).

HURSDAY (17th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.).

FRIDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (19th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (14th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—3 P.M. Dr. Davis: Medical Cases.

TUESDAY (15th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Bidwell: Surgical Treatment of Ascites.

WEDNESDAY (16th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Dunn: Tobacco Amblyopia.

THURSDAY (17th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—4 P.M. Mr. Edwards: Surgical Cases.

FRIDAY (18th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Common Symptoms of Throat, Nose, and Ear Diseases.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1905, which was completed with the issue of June 24th, and the Title-page to the Volume, were given in THE LANCET of July 1st.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1905 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.				TO THE COLONIES AND ABROAD.			
One Year	£1	12	6	One Year	£1	14	8
Six Months	0	16	3	Six Months	0	17	4
Three Months	0	8	2	Three Months	0	8	8

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 10th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Aug. 4	29·49	S.W.	...	118	71	60	61	66	Cloudy
" 5	29·62	S.W.	...	129	72	60	60	65	Cloudy
" 6	30·10	S.W.	0·12	119	69	53	55	59	Cloudy
" 7	29·91	S.	0·05	91	60	59	57	61	Cloudy
" 8	29·93	W.	...	124	75	59	61	65	Cloudy
" 9	29·94	S.W.	...	89	67	59	57	61	Overcast
" 10	29·90	S.W.	0·02	131	72	57	57	63	Fine

During the week marked copies of the following newspapers have been received:—*Hereford Mercury, Yorkshire Post, Bridgwater Mercury, Daily Chronicle, Morning Leader, Birmingham Express and Star, Hartlepool Mail, Glasgow Herald, Yorkshire Daily Observer, Liverpool Courier, Southern Press (Scotland), Globe, Daily News, Westminster Gazette, Irish Times, Spectator, Essex Observer, Literary Digest (New York), Scientific American, South Wales Daily Echo, Cambridge Chronicle, Eastern Daily Press, Western Mail (Cardiff), Clinical Journal, Morning Advertiser, &c.*

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Dr. Med Jos Fr von Cr

Bad Hall, Oberosterreich (Upper Austria), August 1st, 1905

THE RED LAMP AND THE BARBER'S POLE.

To the Editors of The Lancet.

Sirs,—For some time past I have puzzled over the origin o red lamp which is placed by some medical practitioners outside "surgeries" and which at night is often, especially in the sub the only attractive object in the whole road. I have asked one o medical men about it and they do not seem to know why they themselves and I feel sure it would interest many of them to kno history if some one of your numerous readers would tell it. It se to me to symbolise blood letting, but the barber's pole appea have been used with that signification when the barber-surg did that kind of work, for I read that "it signified "the which the patient grasped, its spiral decoration in imitation o bandage, and the basin to catch the blood." I read elsewhere, regard to the basin, "often with a brass basin at the end of it," a also remember to have read somewhere that the pole symbolised "poll" or head (derived from the middle Dutch "pol"—head), b do not believe this, as the word "pole" seems to have been derived Anglo Saxon "pal" or Latin "palus," a stake.

I am, Sirs, yours faithfully,

Luc

July 24th, 1905.

HARD WATER AND RHEUMATOID ARTHRITIS

To the Editors of The Lancet.

Sirs,—My wife suffers acutely from rheumatoid arthritis in the joint and from sciatica. Our water-supply is impregnated with l Would removal from the district or a supply of soft water mater facilitate a cure? Everything tried has failed.

I am, Sirs, yours faithfully,

A. M

August 8th, 1905.

*** So far as we are aware no connexion between rheumatoid arth and the character of the water-supply has been recognised. A removal from the district, a warm, dry, and equable climate desideratum.—Ed L.

BOVININE AS A DRESSING.

To the Editors of The Lancet.

Sirs,—Having read the letter under the above title in your issue August 5th I think it may be worth while to relate my experienc bovinine as a dressing. In the spring of 1904 I had a patient under care in hospital who was severely burnt on the back. The patient a woman who in an epileptic fit fell into the fire and had a burn of third degree from the occiput to the level of the fifth dorsal spine a from the acromial angle on the left side to the middle of the delt muscle on the right. When she came under my care she had a cle granulating wound of irregular shape about 12 by 20 inches in greatest diameters. I had just read some accounts of the resu obtained in America by treating large granulating wounds w bovinine and determined to try it. I dressed the wound daily wi bovinine and on three occasions covered different parts of the surfa with Thiersch's grafts, dressing them with the bovinine in the sa manner as the granulating surface. The grafts took unusually w and the whole surface was completely healed in a far shorter time th I had expected. When the patient left the hospital the whole area th had been burnt was covered with a soft healthy flexible skin and the was no tendency towards cicatricial contraction or deformity. I heard the patient some months afterwards and there was still no tendency contraction or breaking down of the new skin. Since then I ha

The Croonian Lectures
ON
THE CHEMICAL CORRELATION OF THE FUNCTIONS OF THE BODY.

Delivered before the Royal College of Physicians of London on June 20th, 22nd, 27th, and 29th, 1905,

BY ERNEST HENRY STARLING, M.D. LOND., F.R.S.,

FELLOW OF THE COLLEGE; JODRELL PROFESSOR OF PHYSIOLOGY, UNIVERSITY COLLEGE, LONDON.

LECTURE III.[1]

Delivered on June 27th.

THE CHEMICAL REFLEXES OF THE ALIMENTARY TRACT.

MR. PRESIDENT AND GENTLEMEN,—It is not until the food arrives at the stomach that any use is made by the organism of the more primitive chemical method of adjusting the secretion of the digestive juices to the presence of food at various sections of the canal. We have searched in vain for evidence of the production of a secretin in the mouth or its mucous membrane as the result of the taking of food into this cavity which might serve as a stimulus to the salivary glands and the processes in this first part of the alimentary canal are so closely associated with consciousness and volition that one would expect their complete subordination to the central nervous system. In the stomach, however, the researches of Pawlow have already pointed to the possibility of some chemical mechanism being involved in the secretion of gastric juice. This observer has shown that gastric secretion begins even before the entry of food into the stomach as a result either of stimulation of the nerves of taste or even of the mental reproduction of sensations of smell and taste. This immediate secretion is therefore largely psychical and is so designated by Pawlow. The efferent channel of the nervous process is represented by the vagus nerves and Pawlow has shown that division of both vagus nerves absolutely prevents this immediate secretion of gastric juice. There can be no doubt that the psychical secretion is the more important factor in the production of gastric juice in normal circumstances. The dependence of normal digestion in the stomach upon the free play of these nervous influences is shown by the indigestion which is a familiar result of mental disturbance. Gastric secretion has, however, two stages. In the first stage there is the rapid secretion due to this psychical stimulation. Two or three hours after the taking of food into the stomach a second rise in the secretion of juice may be observed and this second rise is apparently dependent not on the taste of the food or mental condition of the animal but on the nature of the stomach contents. Pawlow has shown that this second stage occurs even when both vagus nerves are divided and the possibility is at once suggested that this stage is not due to nervous processes at all, but is determined by some chemical mechanism similar to that which we have studied in the case of the pancreas. Pawlow is apparently of opinion that the secondary secretion is due to local reflexes in the wall of the viscus, but recent experiments by Edkins have shown that it is unnecessary to invoke the aid of any such obscure mechanism.

The stomach consists functionally of two parts—namely, the fundus and the pyloric end. In the fundus of the stomach are found the glands which secrete an acid juice. In the pyloric end the glands are devoid of oxyntic cells and the mucous membrane is much more closely adherent to the subjacent muscular coats. After a full meal the food forms a mass lying in the fundus of the stomach, the pyloric portion being at first quite empty. The movements which occur from 20 to 30 minutes after the taking of food involve only the pyloric half of the stomach, the fundus gradually contracting on its mass of food, so that the portions which are already partially digested are squeezed into the pyloric mill, where thorough admixture of the food with the juices takes place. It seems therefore that such absorption as occurs in the stomach takes place solely at its pyloric end. If, then, there be a gastric secretin we should expect it to be formed in the cells of the pyloric mucous membrane under the influence of the acid or food passing to this end of the stomach from the fundus. Injection therefore of an extract made by treating pyloric mucous membrane with the products of gastric digestion should provoke a secretion of gastric juice. On such lines Edkins made his observations. Extracts of the pyloric mucous membrane were made by rubbing this up with 5 per cent. dextrin, with dextrose or maltose, or with peptone. A dog's stomach which had been previously washed out was filled up with normal salt solution under slight pressure. No absorption of salt solution takes place through the stomach, so that at the end of an hour the salt solution could be recovered unchanged. If, however, the extracts made, as just described, were injected in repeated small doses into the veins of the animal under observation the salt solution removed from the stomach at the end of an hour was found to contain hydrochloric acid as well as pepsine, showing that secretion had been excited in the stomach. Injections of dextrin, maltose, &c., by themselves were without effect, so that the secretory results must be due to the injection of some substance produced in the pyloric cells under the influence of these digestive products. This substance, which Edkins calls gastrin, but which would be better named gastric secretin, is produced only from the pyloric mucous membrane, extracts made by rubbing up digestive products with fundus mucous membrane being without influence on the gastric secretion. Edkins has shown that the substance is not destroyed by boiling, so that it evidently belongs to the same class of bodies as the pancreatic secretin described in my last lecture.

It is an old theory, as propounded by Schiff, that certain constituents of the food have a special influence in promoting the secretion of gastric juice. These substances, among which Schiff placed dextrin, were called by him peptogenous and it seems from Edkins's researches that this term is justified and that our future definition of peptogenous substances will be such bodies as can by their action on the pyloric mucous membrane give rise to the production of gastric secretin.

The movements of the pyloric mill have the effect of squirting into the first part of the duodenum, at intervals of a few minutes, a small quantity of strongly acid chyme containing the products of gastric digestion of the foodstuffs. The pylorus opens to admit the passage of a few cubic centimetres of chyme at a time and then closes and remains closed so long as the contents of the duodenum continue to be acid. As soon as the duodenal contents are neutralised the pylorus opens again and allows the propulsion of a further portion of semi-digested chyme into the duodenum. As we have seen, the effect of this acid chyme is to give rise in the cells of the mucous membrane of the first part of the intestine to secretin which, carried by the blood-vessels to the pancreas, excites a flow of strongly alkaline pancreatic juice. We may take it that ten cubic centimetres of pancreatic juice would suffice to neutralise from 15 to 20 cubic centimetres of the acid chyme. Pancreatic juice, however, although it contains many ferments, is dependent for the full display of its digestive activity on the coöperation of the other juices which are poured into the intestines at the same time—namely, the bile and the succus entericus. Pancreatic juice contains preformed both a fat-splitting ferment and a starch-splitting ferment. The activity of both these ferments is, however, doubled or trebled if bile be simultaneously present. Moreover, the fat-splitting properties of pancreatic juice are of little avail to the organism unless bile salts are also present, which by their solvent power on fatty acids and soaps and by their effect on surface tension can enable the absorption of the products of fat digestion to take place. It is essential, then, that the secretion of bile shall take place at the same time as, and in proportion to, the flow of pancreatic juice. The simultaneous and correlated flow of these two juices is effected by one and the same mechanism. Bayliss and I observed that if a cannula were introduced into the bile duct, the cystic duct having previously been ligatured, intravenous injection of secretin evoked not only the flow of pancreatic juice but also an increased flow of bile. Most extracts of the mucous membrane of the small intestine contain small traces of bile salts which are themselves cholagogue and might, therefore,

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[1] Lectures I. and II. were published in THE LANCET of August 5th (p. 339) and 12th (p. 423), 1905.

No. 4277.

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the food or other substances introduced into the mouth. Thus introduction of sand into a dog's mouth evokes profuse secretion of watery saliva; meat provokes secretion of thick, viscid saliva; bread of thin saliva, chiefly from the parotid gland; and so on. The same results can be evoked by showing the dog these substances—i.e., by the psychic reproduction of previous actual stimulation of peripheral sense organs.

In the stomach the psychic secretion, which is so important in inaugurating the digestion of the food, is apparently unaffected by alterations in diet, any variations which may be caused being sufficiently explained by the different digestibilities and therefore different length of stay of the foodstuffs in the stomach. In the case of the pancreas, however, according to Walther and Vasilieff, there is an accurate adaptation of the composition of the juice to the nature of the food, the dog that has been on a bread diet secreting more amylopsin, while the dog on a proteid diet secretes a larger amount of trypsin or trypsinogen. These results have been controverted by Popielski, according to whom the composition of pancreatic juice is determined solely by the strength of the stimulus which the pancreas receives and further experimental work is still required on the subject. If Walther's contentions are supported it will be interesting to determine whether the adaptation of the pancreatic activity to the nature of the food is nervous in character as imagined by Pawlow or whether the mechanism in this case also is chemical. A very interesting example of adaptation of the pancreatic activity to the nature of the food was described in 1901 by Weinland, who stated that, whereas the pancreatic juice of an ordinary adult dog contains no lactase and is therefore without effect on milk sugar, it is only necessary to feed the dog for some time, a week or more, with milk or with milk sugar in order to determine the appearance of lactase in the pancreatic juice. These experiments of Weinland have been confirmed and amplified more recently in my laboratory by Bainbridge. It is easy to judge of the presence of lactase in pancreatic juice by testing the action of this fluid on solutions of milk sugar and Bainbridge therefore took advantage of this adaptation to determine the mechanism by which it was carried out, and especially to decide the question whether the adaptation is of a nervous or of a chemical nature.

What are the limiting conditions? In the first place the reaction is absolutely specific. Unless the animal is taking lactose in its diet no lactase is ever found in the pancreas or in its secretion. The pancreas of newly born animals, for instance, is quite free from lactase, which, however, makes its appearance two or three days after birth as a result of the milk diet. The production of lactase is not a direct reaction of the pancreas to the presence of lactose in the blood, since subcutaneous or intravenous injection of lactose does not cause the appearance of lactase in the pancreas. The intestinal mucous membrane of all animals, whether on a milk diet or not, contains lactase and has an inverting action on lactose. It might be thought, therefore, that the production of lactase by the pancreas was a reaction to the presence of the products of inversion of lactose in the blood. This was found not to be the case. Subcutaneous injection of galactose for several days was not followed by any appearance of lactase in the pancreas or its juice. Nor was the appearance of lactase due to the increased production of this ferment in the mucous membrane and its escape into the blood. Injection of an extract of mucous membrane rich in lactase, repeated several days in succession, was not followed by any appearance of lactase in the pancreas. Injection of lactose into the duodenum and the subsequent injection of secretin after an interval of one hour were ineffectual in causing the appearance of lactase in the pancreatic juice. For the production of lactase in the pancreas or its juice it is therefore necessary that lactose should act on the intestinal mucous membrane for some time. The reaction is a slow one, like the adaptation in Vasilieff's experiments, and is certainly not due to the stimulation of certain nerve endings in the mucous membrane by the lactose.

Yet it was evident from the results already obtained that lactose must act on the pancreas through the mucous membrane of the intestine. An extract was therefore made from the mucous membrane of the whole small intestine of a milk-fed dog. This was filtered through muslin and about ten cubic centimetres were injected subcutaneously into a biscuit-fed dog once a day for three days. The dog was then anæsthetised, a cannula was placed in its pancreatic duct, and ordinary secretin was injected. A flow of pancreatic juice was obtained and this juice was found to contain lactase. This experiment was performed eight times and in each case the juice obtained from a biscuit-fed dog which had been injected with an extract of the mucous membrane of a milk-fed dog contained lactase.

Here, then, we have some glimpse into the mechanism of the adaptation of the pancreas to the nature of the food. As the result of injection of lactose some substance which we may call *x* is produced in the mucous membrane of the small intestine. This substance is carried by the blood to the pancreas and there slowly gives rise to the formation of lactase, which is turned out in the juice when secretion is excited by the entry of acid chyme into the duodenum. We have no knowledge as yet as to the nature of this substance *x*. All we can say is that it is destroyed at a boiling temperature, since boiled extracts of the mucous membrane of milk-fed dogs do not, when subcutaneously injected, cause the appearance of any lactase in the pancreatic juice of biscuit-fed dogs.

Whether the qualitative adaptation of the juice in respect of its trypsin, amylopsin, and steapsin is carried out in a similar fashion we cannot as yet say. We hope that an investigation of the mechanism of this adaptation, which is now proceeding, may throw light not only on the factors involved but also on the nature of the substance which is formed in the mucous membrane and has this marked effect on the activity of the pancreatic cells. Involving, as it does, two distinct sets of cells this chemical adaptation to lactose is more complex than any yet investigated and shows the intimate relation which must exist between the chemical activities of very different organs of the body.

CONGENITAL HYPERTROPHIC STENOSIS OF THE PYLORUS, WITH AN ACCOUNT OF A CASE SUCCESSFULLY TREATED WITHOUT OPERATION.

BY W. J. HARPER, M.R.C.S. ENG., L.R.C.P. LOND.;
AND
JOHN R. HARPER, M.R.C.S. ENG., L.R.C.P. LOND.,
SURGEON TO THE [illegible] DISPENSARY.

THE following is a clinical history of the case. The child, a male, slightly undersized but apparently normal in other respects, was born after a tedious and instrumental labour on June 20th, 1904. Nothing in his condition occurred during the first three weeks to comment upon; he appeared to thrive and was fed upon cow's milk and water in the ordinary proportions for a child of that age. Vomiting occurred once or twice but never in any way to cause any anxiety. Unfortunately the child was not weighed at birth. About July 14th the child started vomiting some of his meals but not enough for us to think of changing his food. On the 21st, however, he was sick six times in the 24 hours and was then put on to peptonised milk, lime-water, and dill-water in small doses, from two to four drachms every two hours, and was given a simple alkaline mixture. His weight about this time (July 22nd) was 6 pounds 12 ounces. For the next few days vomiting continued more or less frequently—on one day once and on others two or three times. Nothing was detected upon carefully examining the abdomen and we thought him to be suffering from gastritis; his bowels were constipated. Benger's food was added to his diet and was carefully given but was invariably vomited at once, and after three days' trial this was discontinued. By July 28th he had gained two ounces in weight in six days and on this day as he had not been sick at all for several hours his peptonised milk was slightly increased in quantity and he was given a teaspoonful of water every two hours. Constipation was very troublesome and was relieved by oil enemata. The following day, however, sickness commenced again and continued for several days in spite of careful dieting. "Humanised" milk was substituted for peptonised milk, being given every two hours in five-drachm quantities; this, however, was most unsuccessful as he vomited 12 times within a few hours of commencing it. Valentine's meat juice the result of the injection of ordinary extracts of intestinal mucous membrane. The presence of bile salts in our extracts was, however, guarded against, since in our experiments on the influence of secretin on bile we used for the preparation of secretin only mucous membrane which had been previously thoroughly extracted with boiling absolute alcohol and proved by special experiment to contain no trace of bile salts.

Still more important for the full display of the powers of the pancreatic juice is the coöperation of the succus entericus. It was shown in Pawlow's laboratory that the proteolytic effects of pancreatic juice obtained from a pancreatic fistula were enormously increased by the addition of a small trace of intestinal juice and it was concluded that the pancreatic juice contains, besides a small amount of trypsin, a large amount of trypsinogen. This latter 'proferment' has no action on proteids. The succus entericus contains another ferment called by Pawlow enterokinase, which has the power of converting trypsinogen into trypsin. More lately it has been shown by Délézenne, as well as by Bayliss and myself, that normal pancreatic juice as secreted contains no trypsin whatsoever. It has, indeed, a feeble proteolytic ferment which, however, is powerless to digest coagulated proteids or even solid gelatin and only slowly attacks unboiled fibrin or caseinogen. The proteolytic ferment of fresh pancreatic juice is therefore no stronger than the ferments which can be extracted from almost any tissue of the body. In the presence of succus entericus, however, the pancreatic juice speedily develops a proteolytic power more marked than that of any other proteolytic ferment we are acquainted with. It dissolves proteids, whether or not coagulated, and rapidly carries them through the stages of hydration to their end-products of amino-acids, bases, and so on, effecting in this way a thorough destruction of the proteid molecule. Certain French observers, Délézenne, Dastre, and others, have imagined that the interaction of enterokinase and trypsinogen is of the same nature as the interaction between antibody and complement, which is necessary for the destruction of red blood discs by hæmolytic sera. Experiments by Bayliss and myself have shown that this view is untenable and have confirmed Pawlow's original statement that the activating effect of succus entericus on pancreatic juice is due to the presence of a body which acts like a ferment. Our results have been fully confirmed more recently by Hekma in Holland and by Falloise in Belgium.

Enterokinase is active in such minute quantities that the presence of the minutest trace of mucous membrane in a pancreatic juice will suffice to activate the latter. It is important, however, that the activation of the proteolytic ferment should take place as speedily as possible after the entry of pancreatic juice into the intestine, and there must therefore be some means by which a flow of enterokinase containing succus entericus is evoked in direct proportion to the amount of pancreatic juice entering the intestine. That such a mechanism is present and is of a chemical nature there can be little doubt, although some discrepancy still exists between different observers as to the exact nature of the chemical mechanism. We have commenced to study the subject but our experiments are not yet far enough advanced to enable us to decide between the rival views. It is necessary to bear in mind that very considerable differences may exist between the mechanism of secretion of succus entericus in the upper and lower parts of the small intestine. It has long been known that there is a gradual increase in the absorbing powers of the intestine as we proceed from its upper to its lower end, and every worker with intestinal fistulæ has noticed an inverse ratio between the secreting powers of the different parts of this tube, secretion being most abundant in the duodenum and least abundant in the lower parts of the ileum. It is possible, therefore, that the various mechanisms described by different observers are really all involved but that their importance varies according to the part of the canal under investigation. Pawlow, as the result of experiments carried out on dogs with intestinal fistulæ, came to the conclusion that two main factors were involved in the secretion of succus entericus—namely: (1) the mechanical distension of the intestinal canal; and (2) the presence of pancreatic juice. He found that a flow of succus entericus could be more easily evoked by the introduction of a small amount of fresh pancreatic juice into the intestine than by any other means and work by his pupils seems to point to the richness of the juice in enterokinase being proportional to the amount of pancreatic juice introduced into the canal. If these observations be correct they would point to the trypsinogen, or some associated substance in the pancreatic juice, as being itself the chemical stimulant for the glands of the intestinal wall. Whether this chemical irritant acts directly or whether it reaches the follicles of Lieberkühn by way of the blood stream is as yet undetermined. Since it is the trypsinogen which needs the presence of enterokinase it would be natural to assume that this substance itself is the active stimulant of the intestinal glands.

A somewhat different view of the exciting agent for the intestinal secretion has been put forward by Délézenne. This observer, working on dogs with intestinal fistulæ at various regions of the gut, obtained practically no secretion except from the uppermost section—namely, that including the duodenum. He finds that the secretion of what we may call duodenal juice, which must be succus entericus, together with a small amount of the secretion of Brunner's glands, is excited simultaneously with the pancreatic juice and the bile by the injection of secretin into the blood stream. According to this observer, therefore, the secretion of the three coöperating juices in the upper part of the small intestine—namely, bile, pancreatic juice, and succus entericus, containing enterokinase—is brought about by one and the same mechanism—namely, the production of secretin in the intestinal mucous membrane under the influence of the entry of the gastric contents. It is, however, only in the upper part of the gut that the chief rôle of the succus entericus can be regarded as adjuvant to the pancreatic juice and it is only here that the intestinal juice contains any large quantity of enterokinase. Lower down in the gut a secretion of alkaline intestinal juice is still of importance in consequence of its content in (a) sodium carbonate for the neutralisation of the organic acids produced in the changes in foodstuffs; (b) the ferment erepsin which breaks down the products of gastric and pancreatic digestion of proteids, converting albumoses and peptones into the nitrogenous end-products, amino-acids, and nitrogenous bases; and (c) the ferments invertase and maltase which complete the digestion of the carbohydrates of the food. To these two ferments we must, in the case of milk-fed animals, add the ferment lactase, without the coördination of which milk sugar is incapable of undergoing assimilation.

According to Frouin the secretion of succus entericus (apparently in the middle part of the small intestine) can be evoked by the intravenous injection of succus entericus itself or by an extract of the intestinal mucous membrane. It is difficult to see the teleological significance of such a mechanism unless we assume that some constituent of the succus entericus, produced by the mechanical stimulation of the foodstuffs themselves, is absorbed into the blood and provokes the secretion of more intestinal juice lower down in the canal in preparation for the reception of the advancing mass of food.

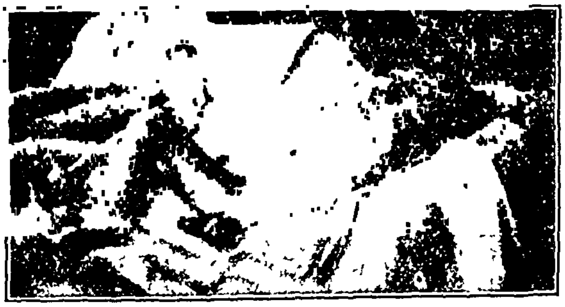
We see then that from the entry of the food into the stomach until its passage through the ileo-cæcal valve there is a continuous chain of chemical reflexes and that the process in any section of the alimentary canal calls forth the activity of the digestive apparatus in the immediately following section. In the stomach this chemical mechanism or reflex is associated with, and probably subordinated to, a nervous reflex mechanism. In the rest of the alimentary canal the chemical mechanism seems sufficient to account for the secretion of all the digestive juices which are demanded by the food. Whether there is in addition a chain of nervous processes the evidence at present before us is not sufficient to decide, though we ourselves have been unable to obtain any satisfactory evidence of their existence. The mechanisms I have described suffice to explain in large measure the adaptation of the digestive processes to variations in the quality of the food supplied. As a rule the more indigestible the foodstuff the longer will it remain in the stomach; the greater, therefore, will be the secretion of acid gastric juice, which is the stimulus which sets free the chain of processes below the pyloric sphincter. Increased secretion of gastric juice will therefore be attended automatically with increased secretion of the other digestive juices.

There is, however, evidence of a more specific adaptation of certain of the digestive juices to the nature of the foodstuffs. Experiments carried out in Pawlow's laboratory have shown that the saliva poured into the mouth varies in consistence and other qualities according to the nature of

in small doses, white of egg, peptonised milk and hot water were all tried but were immediately returned. His condition by now, August 5th, was very grave; his pulse was 140, his temperature was subnormal, his skin was dried up and shrivelled, his extremities were cold and bluish, and the child was wasted to an extreme degree. The tongue was very dry and brown and the bowels were very constipated. He was much too ill to be taken out of his cot and was kept wrapped up in cotton wool. The vomit was always devoid of bile, containing curdled milk and mucus; at times it was intensely acid and sour smelling. Vomiting followed practically immediately the introduction of anything into the mouth—at times being forced out on to the bed as if from a pump. It was never large in amount, unless perhaps it had ceased for a few hours, when everything came up that he had previously taken.

On carefully examining his abdomen the stomach appeared to be dilated and traversing it from left to right distinct waves of peristalsis could be made out following one another in rapid succession at regular and distinct intervals. These seemed to be excited by the introduction of anything into the stomach and often started at once when the abdominal wall was exposed to the air. Sometimes they could only be obtained by palpating the abdomen or flicking it slightly with the finger. They could also be felt when the hand was laid upon the stomach moving across the abdomen. We were fortunate to obtain a photograph (Fig. 1) which distinctly shows this characteristic symptom. On rare occasions we saw a retrogressive wave which evidently started from the pylorus and travelled towards the cardiac end of the stomach; it was noted that it was often accompanied by vomiting. Any food that he was given was in very small quantity—from one to two drachms—and at intervals of from one and a half to two hours day and night. On August 5th he had seven or eight tonic convulsions. On the following day he had 22 and was in a state of extreme collapse, taking no nourishment by the mouth. The pulse was 118. On the 7th and 8th the convulsions were very frequent—from 22 to 24 in the 24 hours. He was now so ill that beyond keeping him warm with hot-water bottles and a teaspoonful of hot water at frequent intervals we did nothing for him. The temperature was 97° and the pulse had fallen to 67. During the next few days, as the convulsions had diminished much in frequency and severity, we again tried him upon peptonised milk and white of egg. Vomiting, however, started at once and on August 10th we commenced to give him injections of normal saline solution, about half a pint twice daily and at first doing nothing else; he retained them and was much less restless, having no convulsions and only a little sickness. By the 14th he appeared to have rallied somewhat, but was still sick three, four, and nine times during the 24 hours. He was now taking peptonised milk and water and occasionally a few drops of Valentine's meat juice and white of egg, a portion of which he certainly retained. His weight on this date was 5 pounds 12 ounces, being a loss of 1 pound 2 ounces in 14 days. He still retained the saline injections, the constipation having to be relieved by an oil or simple enema. He was taking no medicine. On August 18th his weight had further fallen, being 5 pounds 10½ ounces. The temperature was subnormal, the pulse varying from 82 to 64 during the 24 hours; there had been no further convulsions

FIG. 1.



Reproduction of photograph taken in September, 1904, showing peristaltic wave.

but the vomiting was as bad as ever, starting im
anything was introduced into the stomach and occ
often as seven, nine, 17, and 20 times during the
At this time his local condition was much as befo
were able upon two or three occasions to defin
rounded swelling situated to the right of the umbil
the costal margins of about the size of a smal
Often, however, we were unsuccessful in demonst
A wet nurse was obtained and the child was fed
of a spoon with her milk but this was a complet
The weight now (August 24th) was 5 pounds 8 o
temperature was subnormal, the pulse was 62, and
looking as if he were about to die at any mom
shrivelled up and emaciated than ever. He ret
saline injections and nothing else. We had tried
enema of peptonised milk on several occasions
started diarrhœa and was retained for a very s
only. We finally gave up everything except te
of hot water and the normal saline injections an
remained thus for a day or two when we a
menced teaspoonfuls of peptonised milk and wa
in spite of vomiting two or three times in the day
retained. He seemed now, if anything, brighter
being weighed we found that he had gained three
quarter ounces in three days. The nurse on A
started massaging the abdomen twice daily with c
particular attention being paid to massage of t
wall towards the pylorus. On Sept. 2nd he had no
for two days and weighed 5 pounds 13¼ ounces.
taking only small quantities of peptonised milk
and upon again trying nutrient enemata we found
little difficulty they were retained. We gave n
peptonised milk and continued this treatment fo
during which he commenced decidedly to im
weight being 6 pounds 2 ounces, and except for s
œdema of his feet and over one eye he certa
better. On Sept. 12th we had to stop the nutrie
owing to the local irritation they caused bu
enabled still to continue the normal saline inject
together with an increased amount of peptonised
mouth, given at more frequent intervals than two
the treatment for the next four weeks. The loca
had not altered much. Possibly the peristalsis was
tinct. We certainly were unable to feel the pylo
that we had previously noticed. It was now
him to be sick more than once a day. On se
there was no vomiting. Abdominal massage wit
oil was still continued. On Oct. 1st his
6 pounds 3¼ ounces. On Oct. 5th Dr. Eustace S
interview with one of us, recommended the ad
few grains of pulv. papain compositus to each
now consisted of peptonised milk and Benger's
was practically the treatment for the next thr
His weight gradually increased and the child beg
much fatter. The only difficulty was that of c

FIG. 2.

Reproduction of photograph of the same child tal
July, 1905

which was as bad as ever, being only relieved b
enemata. The injections of normal saline solut
discontinued on Nov. 27th when the weight was 9
8 ounces and the child's age was just five months
the latter part of October he had an attack of c
which yielded in a few days to simple treat

By Dec. 25th his weight was 12 pounds. He was taking now only Benger's food with a little barley water. His abdomen had much altered; the peristalsis was present only upon flicking the abdomen. There was rarely any vomiting but still obstinate constipation. On March 30th, 1905, nothing abnormal on examination could be detected. His weight was 18 pounds. On July 1st the child was as in Fig. 2, weighing 26¼ pounds and being about 12 months old. He certainly appeared to have an unusual amount of adipose tissue for a child of his age and the upper part of his abdomen looked unduly prominent. Nothing abnormal, however, could be detected. His health is excellent and his appetite is good. He never has any vomiting and has cut several teeth. Constipation, however, still remains a difficulty.

By far the majority of papers and cases that have been published concerning successful cases of congenital hypertrophic stenosis of the pylorus have been written with the idea of showing the advantages of early operative interference, notably the papers by Wachenheim,[1] Cautley and Dent,[2] Nicoll,[3] Thomson,[4] Stiles,[5] and others. It has occurred to us that the somewhat detailed account of the history of the above case might prove sufficiently interesting for publication in that the child's recovery was entirely due to careful nursing and dieting. The infant, who is the son of one of us, had the advantage of being continuously under medical observation and during the whole of his illness was under the care of his mother and an exceptionally capable trained nurse, to both of whom the credit of the child's recovery is due. The question of operative interference was frequently discussed during the earlier stages of the child's condition but was abandoned owing to his apparently hopeless condition. We had noticed, too, as the child improved, that two cases had been carefully reported by Batten[6] and Gardner[7] in which recovery took place after careful dieting, the patient in the former case, however, unfortunately dying later from an attack of bronchopneumonia. Recoveries have also been reported as having taken place without operation by Ashby,[8] G. F. Still,[9] and J. F. Goodhart.[10]

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Wachenheim: The American Journal of the Medical Sciences, ril, 1905.

Cautley and Dent: Transactions of the Royal Medical and Chirural Society, vol. lxxxvi., p. 471.

[3] Nicoll: Brit. Med. Jour., 1900, vol. ii., p. 571.

[4] Thomson: Edinburgh Hospital Reports, 1896, vol. xxiv., p. 601.

Stiles: Transactions of the Royal Medical and Chirurgical Society, lxxxvi., p. 569.

[6] Batten: THE LANCET, Dec. 2nd, 1899, p. 1511.

[7] Gardner: THE LANCET, Jan. 10th, 1903, p. 100.

[8] Ashby: Archives of Pediatrics, July, 1897.

[9] Still: Encyclopædia Medica, vol. iv., p. 89.

[10] Goodhart: Diseases of Children, seventh edition, p. 139.

[11] Loc. cit.

[12] Thomson: Brit. Med. Jour., Sept. 6th, 1902, p. 678.

Ashby: Transactions of the Royal Medical and Chirurgical Society, lxxxvi., p. 507.

[14] Loc. cit.

Rolleston and Crofton-Atkins: Brit. Med. Jour., Dec. 29th, 1900.

[16] Loc. cit.

[17] Brit. Med. Jour., vol. i., 1897. Epitome, p. 21, paragraph 103.

[18] Loc. cit.

[19] Loc. cit.

[20] Loc. cit.

[21] Thomson: Edinburgh Hospital Reports, vol. iv., p. 116.

[22] Loc. cit.

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In the treatment of our patient we found, after trying cow's milk, Allen and Hanburys and Benger's food, a wet nurse, and "humanised" milk, all unsuccessfully, that we had the best results from small quantities of peptonised milk at very frequent intervals, together with injections of normal saline solution half a pint twice daily. The latter method of treatment we found of the greatest service in counteracting the great drain upon the tissues the result of the excessive vomiting. We preferred this method to that of nasal feeding as the child was so exhausted. In any future case we might be called upon to treat we should certainly wash the stomach in small doses, white of egg, peptonised milk and hot water were all tried but were immediately returned. His condition by now, August 5th, was very grave; his pulse was 140, his temperature was subnormal, his skin was dried up and shrivelled, his extremities were cold and bluish, and the child was wasted to an extreme degree. The tongue was very dry and brown and the bowels were very constipated. He was much too ill to be taken out of his cot and was kept wrapped up in cotton wool. The vomit was always devoid of bile, containing curdled milk and mucus; at times it was intensely acid and sour smelling. Vomiting followed practically immediately the introduction of anything into the mouth—at times being forced out on to the bed as if from a pump. It was never large in amount, unless perhaps it had ceased for a few hours, when everything came up that he had previously taken.

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[1] Wachenheim: The American Journal of the Medical Sciences, April, 1905.

[2] Cautley and Dent: Transactions of the Royal Medical and Chirurgical Society, vol. lxxxvi., p. 471.

[3] Nicoll; Brit. Med. Jour., 1900, vol. ii., p. 571.

[4] Thomson: Edinburgh Hospital Reports, 1896, vol. xxiv., p. 601.

[5] Stiles: Transactions of the Royal Medical and Chirurgical Society, vol. lxxxvi., p. 509.

[6] Batten: THE LANCET, Dec. 2nd, 1899, p. 1511.

[7] Gardner: THE LANCET, Jan. 10th, 1903, p. 100.

[8] Ashby: Archives of Pediatrics, July, 1897.

[9] Still: Encyclopædia Medica, vol. iv., p. 89.

[10] Goodhart: Diseases of Children, seventh edition, p. 139.

[11] Loc. cit.

[12] Thomson: Brit. Med. Jour., Sept. 6th, 1902, p. 678.

[13] Ashby: Transactions of the Royal Medical and Chirurgical Society, vol. lxxxvi., p 507.

[14] Loc. cit.

[15] Rolleston and Crofton-Atkins: Brit. Med. Jour., Dec. 28th, 1900.

[16] Loc. cit.

[17] Brit. Med. Jour., vol. i., 1897. Epitome, p. 21, paragraph 103.

[18] Loc. cit.

[19] Loc. cit.

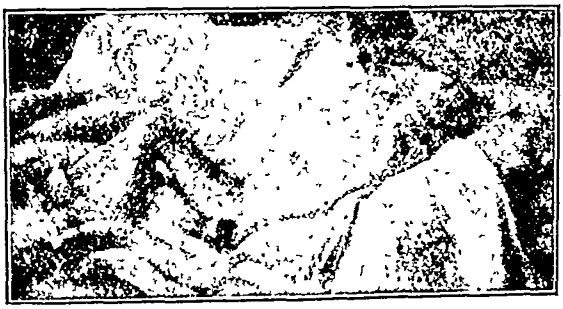
[20] Loc. cit.

[21] Thomson: Edinburgh Hospital Reports, vol. iv., p. 116.

[22] Loc. cit.

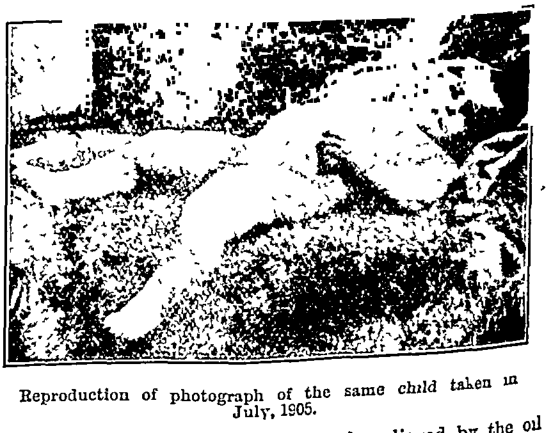
On carefully examining his abdomen the stomach appeared to be dilated and traversing it from left to right distinct waves of peristalsis could be made out following one another in rapid succession at regular and distinct intervals. These seemed to be excited by the introduction of anything into the stomach and often started at once when the abdominal wall was exposed to the air. Sometimes they could only be obtained by palpating the abdomen or flicking it slightly with the finger. They could also be felt when the hand was laid upon the stomach moving across the abdomen. We were fortunate to obtain a photograph (Fig. 1) which distinctly shows this characteristic symptom. On rare occasions we saw a retrogressive wave which evidently started from the pylorus and travelled towards the cardiac end of the stomach; it was noted that it was often accompanied by vomiting. Any food that he was given was in very small quantity—from one to two drachms—and at intervals of from one and a half to two hours day and night. On August 5th he had seven or eight tonic convulsions. On the following day he had 22 and was in a state of extreme collapse, taking no nourishment by the mouth. The pulse was 118. On the 7th and 8th the convulsions were very frequent—from 22 to 24 in the 24 hours. He was now so ill that beyond keeping him warm with hot-water bottles and a teaspoonful of hot water at frequent intervals we did nothing for him. The temperature was 97° and the pulse had fallen to 67. During the next few days, as the convulsions had diminished much in frequency and severity, we again tried him upon peptonised milk and white of egg. Vomiting, however, started at once and on August 10th we commenced to give him injections of normal saline solution, about half a pint twice daily and at first doing nothing else; he retained them and was much less restless, having no convulsions and only a little sickness. By the 14th he appeared to have rallied somewhat, but was still sick three, four, and nine times during the 24 hours. He was now taking peptonised milk and water and occasionally a few drops of Valentine's meat juice and white of egg, a portion of which he certainly retained. His weight on this date was 5 pounds 12 ounces, being a loss of 1 pound 2 ounces in 14 days. He still retained the saline injections, the constipation having to be relieved by an oil or simple enema. He was taking no medicine. On August 18th his weight had further fallen, being 5 pounds 10½ ounces. The temperature was subnormal, the pulse varying from 82 to 64 during the 24 hours; there had been no further convulsions but the vomiting was as bad as ever, starting immediatel anything was introduced into the stomach and occurring as often as seven, nine, 17, and 20 times during the 24 hours. At this time his local condition was much as before but we were able upon two or three occasions to define a small rounded swelling situated to the right of the umbilicus under the costal margins of about the size of a small walnut. Often, however, we were unsuccessful in demonstrating it. A wet nurse was obtained and the child was fed by means of a spoon with her milk but this was a complete failure. The weight now (August 24th) was 5 pounds 8 ounces, the temperature was subnormal, the pulse was 62, and the child looking as if he were about to die at any moment, more shrivelled up and emaciated than ever. He retained the saline injections and nothing else. We had tried a nutrient enema of peptonised milk on several occasions but it had started diarrhœa and was retained for a very short time only. We finally gave up everything except teaspoonfuls of hot water and the normal saline injections and the child remained thus for a day or two when we again commenced teaspoonfuls of peptonised milk and water, which in spite of vomiting two or three times in the day was partly retained. He seemed now, if anything, brighter and upon being weighed we found that he had gained three and three-quarter ounces in three days. The nurse on August 30th started massaging the abdomen twice daily with cod liver oil, particular attention being paid to massage of the stomach wall towards the pylorus. On Sept. 2nd he had not been sick for two days and weighed 5 pounds 13¼ ounces. He was still taking only small quantities of peptonised milk and water and upon again trying nutrient enemata we found that with a little difficulty they were retained. We gave nothing but peptonised milk and continued this treatment for ten days during which he commenced decidedly to improve, his weight being 6 pounds 2 ounces, and except for some slight œdema of his feet and over one eye he certainly looked better. On Sept. 12th we had to stop the nutrient enemata owing to the local irritation they caused but we were enabled still to continue the normal saline injections which, together with an increased amount of peptonised milk by the mouth, given at more frequent intervals than two hours, was the treatment for the next four weeks. The local condition had not altered much. Possibly the peristalsis was not so distinct. We certainly were unable to feel the pyloric tumour that we had previously noticed. It was now unusual for him to be sick more than once a day. On several days there was no vomiting. Abdominal massage with cod-liver oil was still continued. On Oct. 1st his weight was 6 pounds 3¼ ounces. On Oct. 5th Dr. Eustace Smith, in an interview with one of us, recommended the addition of a few grains of pulv. papain compositus to each meal which now consisted of peptonised milk and Benger's food. This was practically the treatment for the next three months. His weight gradually increased and the child began to look much fatter. The only difficulty was that of constipation which was as bad as ever, being only relieved by the oil enemata. The injections of normal saline solution were discontinued on Nov. 27th when the weight was 9 pounds 8 ounces and the child's age was just five months. During the latter part of October he had an attack of enteritis which yielded in a few days to simple treatment.

FIG. 1.



Reproduction of photograph taken in September, 1904, showing peristaltic wave.

FIG. 2.



Reproduction of photograph of the same child taken in July, 1905.

Top Row A J Stanton (Sen House Surgeon) D Mackinnon W D Innes, E V Cooper, W T M Goldie G B Warren (Laboratory Assistant). Lt Col C H Bennett, I M S, Surgeon L R Stitt, U S Navy, J G H Weir (House Surgeon)

2nd Row S R Hodge, N C Beaumont, A R Wellington, J J Waite, J J Wood, C M Wenyon (Protozoologist) R T Leiper F Z S (Helminthologist) N I Spriggs, J F I Toovey, Lt Col W A Quayle, I M S

K C M G Prof W J Simpson Miss S Commissariat, L R C S I H G Waters out twice daily as a routine measure. Had we done this we should no doubt have avoided the convulsions which were at one time so frequent and so severe and were evidently the result of the absorption of toxic material from a dilated stomach. Abdominal massage with cod-liver oil was resorted to in despair but from the progress of the case we cannot help thinking that a certain amount is absorbed through the skin and that a certain proportion of the success of the treatment is due to the oil so absorbed.

SUBDIAPHRAGMATIC TRANSPERITONEAL MASSAGE OF THE HEART AS A MEANS OF RESUSCITATION.

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A FEMALE patient, aged 55 years, was admitted to hospital at 11.45 A.M. on Feb. 23rd, 1905, suffering from marked laryngeal obstruction. She had travelled nearly 30 miles by carriage and train, accompanied by her medical attendant. He was surprised that she had borne the journey so well considering that she had been suffering for about three months previously from increasing dyspnœa which became very urgent at times when the patient was excited. For the past three or four days this had been severe, compelling her to acquiesce in removal to hospital. On arrival she was deeply cyanosed, inspiration was much obstructed and accompanied by a very harsh "baa-ing" noise, and expiration was also interfered with. She was quite conscious and able to reply to questions, though with difficulty. No intralaryngeal examination was made. It was thought that the dyspnœa would subside with rest in bed and orders were given to prepare for tracheotomy immediately after 1 P.M., at which time I should have finished with a clinical lecture in the neighbouring ward. At 12.53 I was told that the patient was dying. On the way to the women's ward a nurse met me saying that she was dead. On entering the ward I heard her make a feeble choky inspiratory effort. Her face was very deeply cyanosed, the large veins standing out on her face and neck. This, however, disappeared with striking rapidity. High tracheotomy was performed at once, with a penknife and the lips of the tracheal wound were retracted with bent hairpins. Very little bleeding occurred from a small vein at the lower end of the wound in the neck. Artificial respiration was immediately proceeded with but only four or five spontaneous breaths were taken by the patient. There was no pulse at the wrist or cardiac impulse from the first. No cardiac sounds could be heard on auscultation. She was pallid, all reflexes had disappeared, the pupils were widely dilated, the muscles became absolutely flaccid, her lips were pale, and her eyes rapidly assumed a "glassy" look. Various methods of resuscitation, including attempted external massage of the heart, were carried out but all to no purpose.

Four or five minutes after the tracheotomy was done the abdomen was opened in the middle line immediately under the xiphoid cartilage, again with my penknife. There was no bleeding. Inserting two fingers I could easily palpate the outline of the heart between the diaphragm and the ribs in front. It was absolutely flaccid. Massage by intermittent pressure was carried out for about four minutes. The compressions were performed about the rate of 70 to 90 per minute. At the end of every 15 to 30 seconds I abated the movements in order to feel any change in the condition of the heart. At the end of the above period I felt the heart becoming firm gradually. After remaining thus for a few seconds a slight tremor was felt. Then very slowly (from 30 to 40 to the minute) the heart began to beat. The pulsations were at first very feeble. I massaged the heart for a few seconds more and then it beat gradually more strongly and quickly until at seven minutes past one it was beating at the rate of about 90, and more vigorously than since admission. The gradual return of the heart's action was indicated to those around by keeping time with my left hand, the other being used for massage. The colour was observed to return to the face and lips, the eyes lost their "glassy" stare, the pupils contracted, and pulsation of the carotids became very visible. During all this time artificial respiration had been kept up by compressing the chest. Very soon after the heart began to beat the patient took a rather deep spontaneous breath and from ten to 15 seconds later another, till by degrees respiration became normal though somewhat frequent. Slight hæmorrhage occurred from the abdominal wound which was then partially sutured and a gauze drain was inserted under the diaphragm. When I left the hospital an hour later the pulse was rather weaker and quicker but still wonderfully good, so that I was rather surprised to hear from the house surgeon that the patient died at 3 P.M., having never regained consciousness. The cause of the laryngeal obstruction was found to be a fairly large cancerous growth. Probably at least ten minutes elapsed between the times when the heart stopped beating and when it began again. Crile records the case of a man whose heart stopped for nine minutes and by the combined effect of artificial respiration, infusion of adrenalin, and manual compression of the heart the cardiac action was restored for 31 minutes.

In December, 1902, I had a similar, though not so striking, experience. I was then removing an ovarian cystoma from a woman, aged 60 years. The pedicle of the growth had just been severed when suddenly the patient became pallid, respiration ceased, and it was found that the heart had stopped. As artificial respiration produced no effect I thrust my hand up through the abdomen and found the heart in a similar condition to that in the foregoing case. In this case, however, only two or three squeezes were necessary to set the heart going again and the patient made an uneventful recovery.

Aberdeen.

A PRELIMINARY NOTE ON

THE PRESENCE OF PIGMENT CONTAINING IRON IN THE THYROID GLAND.[1]

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AND

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IN the course of a histological study of the blood diseases we have on several occasions noticed the presence of pigment giving the free iron reaction in the thyroid. Unfortunately the thyroid had not been preserved in many instances, but we now propose (1) to describe the appearances in six cases; and (2) to give an account of the pigmentary changes in the thyroid gland of animals after blood destruction by hæmolytic agents.

Methods.—The gland tissue was fixed in sublimated formalin and sections were stained with eosin and methylene blue to show the general structure. To demonstrate iron we placed sections in a mixture of potassium ferrocyanide and hydrochloric acid and afterwards counter-stained them with carm-alum. In carrying out the latter method we were careful to avoid the use of metal instruments and to use glass vessels only.

1. CASE 1. *Pernicious anæmia with marked pigmentary changes in the organs.*—Each of a series of sections of the thyroid gland showed an area of about the size of a pin's head where there was a marked iron reaction. This was found to consist of a group of thyroid cells, most of which were packed with a yellow coloured pigment and were enlarged to about 20 times their normal size. Many of the neighbouring acini showed no pigmentation but here and there throughout the sections were large, irregularly shaped cells full of pigment lying in the fibrous tissue between the acini. All the pigment gave the free iron reaction.

CASE 2. *Pernicious anæmia.*—The thyroid had undergone some cystic enlargement. There were no areas showing pigmentation but there were a few connective tissue cells between the acini and a few isolated cells lying free in the acini which were packed with a golden-brown pigment giving the iron reaction.

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[1] Grants towards the expenses of this research were received from the Carnegie Trust and the Mason Fund of the laboratory.

CASE 3. *Severe secondary anæmia following gastric carcinoma.*—In this case there were small pigmented areas scattered at fairly wide intervals throughout the right and left lobes. No pigmentation was found in the isthmus. In the connective tissue between the acini were scattered groups of five or six cells, globular in shape, packed with granules of iron pigment which in many cases obscured the nucleus. Around these groups were other cells containing only two or three small rounded masses of iron pigment. In many of the acini the epithelium lining the vesicles contained a large amount of yellow pigment, especially towards the unattached border of the cells. In the colloid material in several acini were large granular masses like large degenerated cells. Some of the granules gave the iron reaction; others remained golden brown. The colloid material in a few of the acini gave a slight diffuse iron reaction. The pigment in the epithelium of the acini was always more abundant in the case of the smaller vesicles and in this position a smaller proportion of the pigment gave the iron reaction than in the other situations. It was noticed that the colloid material in these small vesicles stained a red colour with eosin and methylene blue, while the colloid in the large vesicles not showing iron was stained blue.

CASE 4. *Medullary leucocythæmia.*—In a small area there was a mass of cellular tissue consisting of ordinary thyroid cells and numerous cells of large size containing iron pigment. Almost throughout the whole gland the interacinous fibrous tissue showed large, irregularly shaped cells full of pigment which gave a brilliant iron reaction.

CASE 5. *Lymphatic leukæmia.*—There were no aggregations of pigmented cells but in epithelial cells lining the acini and in connective tissue cells in the septa throughout the gland were granules of pigment giving the iron reaction.

CASE 6. *Lymphatic leukæmia.*—Iron pigment was found in groups of five or six thyroid cells, in the interacinous connective tissue, and in cells lying free in the acini between the epithelium and the colloid material and sometimes among the colloid.

As yet our collection of "check" material is not large, but we have failed to find the pigment in three cases of lymphatic leukæmia and in a case of death due to injury.

2. *The thyroid in experimental hæmatolysis.*—In this part of the work we were able to utilise material which was obtained in the course of a research by one of us, in collaboration with Dr. D. Noel Paton, on the relationship of the spleen to hæmatolysis. Animals had been injected with a 1 in 50 solution of phenylhydrazin in doses corresponding to three cubic centimetres for each 2000 grammes of body weight. In animals killed a week after the injection we found a marked iron reaction in the thyroid gland. For the most part, however, this reaction was due to a deposition of pigment along the fibrils of connective tissue in the capsule and septa in common with a similar deposition in fibrous tissue in the spleen, lymph glands, &c., as has been described by Heinz[2] and Noel Paton and Goodall.[3] In rabbits and cats we were unable to find any further pigmentary change. In guinea-pigs in addition to the pigmentation along the fibrils of connective tissue there was pigment in large cells lying among the colloid material. In these cells only part of the pigment gave the iron reaction. In one case sections of the parathyroid showed diffuse iron pigmentation of the connective tissue, while the cells were free from pigment. We have examined a very large number of sections of thyroid from all the common laboratory animals in a normal condition and have failed to find pigmentation. It would therefore appear that the condition is associated with an undue vulnerability of the red blood corpuscles. We would note that while iron-containing pigment has been found in the blood conditions and blood destructions described in other organs—as in the liver, the spleen, the kidney, the marrow, and hæmolymph glands—we have been unable to find any notice of its appearance in the thyroid gland. Its occurrence there is of great theoretical and possibly of practical interest.

At the present stage our findings may be summarised as follows:—1. In cases of the diseases of the blood and in animals injected with phenylhydrazin we have found pigment in the thyroid gland. The greater part of this pigment gives the free iron reaction. 2. The pigment is most commonly found in connective tissue cells between the vesicles. It is also present in small scattered areas in the epithelium lining the vesicles and may be found in cells lying free among the colloid material. 3. It is most abundant in the more cellular parts of the thyroid where the colloid vesicles are small.

A CASE OF MIXED-CELL LEUKÆMIA, WITH A SHORT ACCOUNT OF RECENT VIEWS ON ATYPICAL LEUKÆMIAS.

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THE following presents a short abstract of the principal points in the clinical history of the case. The patient, a man, aged 57 years, was admitted into the Western Infirmary, Glasgow, in May, 1904, and was under the care of Dr. J. Finlayson, to whom I am indebted for permission to record the case. He complained of pain and loss of power in the legs of three weeks' duration. For about six months previously, however, he had been in failing health and had complained of sweating and palpitation. By occupation he was a stevedore but had given up this work two years before, not on account of his health, however, although his weight had been decreasing for some years. He had been addicted to alcohol but had never been abroad. There was nothing of note in his family history. On examination the spleen was found greatly to be enlarged, measuring seven and a half inches vertically in the left mid-axillary line and extending forward as far as the umbilicus. The hepatic dulness measured five and three-quarter inches in the right vertical nipple-line. No enlarged glands could be made out on palpation. The lung note was clear throughout. The pulse was rapid and there was a ventricular systolic (mitral) murmur. The evening temperature rose as high as 101·6° F. Neither sugar nor albumin was present in the urine. There was no dropsy or ascites.

During his stay in hospital the patient complained principally of great pain in the thighs and knees. The superficial veins of both legs were varicose and there had been an ulcer on the right one for 30 years; but the pain seemed more severe than could be attributed to this cause (possibly due to bone absorption). Three weeks after admission there was epistaxis on two occasions; the second time it was found necessary to plug the posterior nares. Within a week after the epistaxis the patient died, having in the meantime left the hospital, so that a post-mortem examination was unfortunately not secured.

The blood was examined by me about three weeks before the patient's death. The details are as follows:—Red corpuscles, 2,480,000 per cubic millimetre; hæmoglobin, 37 per cent.; leucocytes, 98,300 per cubic millimetre. The following is a differential count of leucocytes[1] (700 cells in a heat-fixed film stained with Ehrlich's triacid fluid):—Neutrophiles, 50·8 per cent. (polymorphonuclears, 38 per cent., myelocytes and transitionals, 12·8 per cent.); eosinophiles, mostly mononuclear, 4·5 per cent.; large hyalines, 40·7 per cent.; small hyalines, 4 per cent.; mast cells, less than 0·2 per cent.; normoblasts, 17 in the course of 1450 leucocytes. The striking feature in this case is, of course, the occurrence of such a considerable proportion of large non-granular cells in a blood picture which is in other respects characteristic of a myelogenic leukæmia.

The large hyaline cells vary somewhat in size but the great majority have a diameter about one and a half times that of an ordinary polymorphonuclear leucocyte. Their protoplasm is non-granular and in heat-fixed films stained with Ehrlich's triacid fluid it appears of a pale brownish colour, the peripheral band being often more intensely stained than that around the nucleus. The nucleus s round or slightly oval, rarely indented, and averages in diameter two-thirds of that of the cell. It is not as a rule separated from the protoplasm by a clear ring, as occurs so frequently in the case of megaloblasts. The nucleus stains of a homogeneous bluish green colour and shows no chromatin reticulum; there are, however, often several circular or oval paler areas. In these respects the nucleus agrees with that of the neutrophile myelocytes except that the latter are not so symmetrical in contour but usually show some elongation or slight indentation. In films fixed and stained with Jenner's fluid the protoplasm shows an intensely basophile reticulum, with frequently very marked "fraying" and "budding" at the margins. In contrast with the surrounding band of dark-blue protoplasm the nucleus appears much paler and shows no chromatin reticulum or nucleoli. From these characteristics it is clear that we have to deal with cells corresponding with the classical description of the large lymphocyte and differing from the large hyaline cells normally present in the blood in small numbers. The latter do not exhibit the marked basophile reaction of their protoplasm.

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[2] Heinz-Ziegler's Beiträge, Band xxix., 1901, p. 311.

[3] Paton and Goodall: Journal of Physiology, vol. xxix., 1903, p. 411.

[1] A count done on a film taken a week previously gave practically the same result.

In heat-fixed films stained with Ehrlich's triacid fluid the neutrophile myelocytes correspond in general characters with the large hyaline cells except that their protoplasm shows granules of the usual violet tint. In many of the myelocytes the granules are so small as merely to give the protoplasm a *finely stippled appearance which is not confined* to one part of the cell but is evenly diffused. With Jenner's stain fine oxyphile (neutrophile) granules are scarcely apparent in these cells and where granules can be made out the protoplasm is not so markedly basophile as in the large hyaline cells. A differential count on a film stained with Jenner's fluid, where any cell showing the faintest trace of red is taken as finely granular oxyphile, shows a smaller percentage of such cells than does an Ehrlich film of neutrophiles, while the percentage of polymorphonuclears is in both cases practically identical. Thus probably some of the myelocytes do not show granules by Jenner's method and appear as large mononuclear cells with a narrow rim of protoplasm which is not more basophile than the nucleus—the "lymphoid cells" of Wolff. Appearances indicative of mitosis are to be observed both in the myelocytes and in the large hyaline cells.

Cells containing eosinophile granules are not numerous. Although they are set down as constituting 4·5 per cent. of the leucocytes only about 0·9 per cent. could be said to conform at all closely with the types of eosinophile cell met with normally in the blood and marrow of the adult. In heat-fixed films stained with triacid fluid the granules vary greatly in size in one cell as compared with another and also in the same cell; usually the granules are smaller than normal, but a cell containing granules double the usual diameter was seen. The majority are mononuclear: perhaps 1 polymorphonuclear form occurs in 20. In the myelocyte forms the granules assume the violet (neutrophile) tint, even when from their size they are undoubtedly of the eosinophile type. In the great majority the granules are sparsely distributed through the protoplasm of cells which otherwise corresponded in every respect with the large hyaline elements; in other instances the granules are aggregated at one side of the cell When the granules occur in such a hyaline cell in countable numbers and scarcely larger than the granules of a neutrophile polymorphonuclear leucocyte, their identity becomes open to doubt. It is only because one can trace all gradations from these to the typical eosinophile myelocyte that one can decide on their nature. With Jenner's stain only one cell containing coarse eosinophile granules was met with in the course of counting 700 leucocytes; it was polymorphonuclear. There are, however, mononuclear cells with markedly basophile protoplasm containing rounded basophile granules which show the same variations in size and distribution as are observed in the case of the eosinophile cells in films stained with triacid fluid. "Budding" of the protoplasm of these cells is frequently to be observed. Cells containing both eosinophile and basophile granules are definitely present although in very small numbers. If we count such cells with coarse basophile granules as eosinophile then the percentage is 3·5 as compared with 4·5 per cent. of eosinophiles in triacid preparations. On the other hand, if in both preparations we count only typical examples of eosinophile cells—i.e., coarsely granular eosinophile ones with Jenner and coarsely granular ones in triacid films—then the percentages are 0·15 and 0·9 respectively.

Both "wet" and heat fixed films were stained with basic dyes (polychrome, methylene blue, and carbol-thionin blue). These showed that mast cells are very scanty. The spherical granules with marked basophile reaction are not nearly so frequently to be made out here as in the Jenner films nor is their absence to be accounted for by the appearance of cells the granules of which, like the eosinophile granules normally present in the adult, appear as unstained refractile bodies (negative staining). In this connexion I may say that in some of the basophile granular cells in a film stained by Jenner's method I saw along with the markedly basophile granules others in the same cell which did not take up the eosin but were unstained. The coarse granules which do show a basophile reaction in films stained with basic dyes are not metachromatically tinted.

That these coarse basophile granules are in reality a modification of the eosinophile secretion (probably in the direction of a less mature product, as will be considered afterwards) is practically certain from the following considerations: 1. The regular contour of the granules and the absence of metachromatic tinting with basic dyes; both of which characters serve to distinguish them from mast-cell granules. 2. The characteristic way in which they are set free by the "explosion" of a cell containing them through rupture of its protoplasm in the course of spreading the film. 3. The occurrence of coarse basophile along with *coarse eosinophile granules in the same cell. 4. The* fact that the percentage of eosinophile cells is so small in a Jenner preparation as compared with a triacid one unless these cells containing coarse basophile granules be counted as eosinophile elements. A few cells are met with which possess small fragmented nuclei and scanty protoplasm. With triacid staining the nucleus appears dark and "pyknotic." Some of these cells possess coarse granules which appear to stain with triacid fluid, while with Jenner's stain they appear usually basophile, but sometimes they are oxyphile. These are probably to be regarded as degenerated elements.

So far as the appearances in the blood are concerned this case is undoubtedly to be classed as one of mixed cell leukæmia, since we have to deal with a great increase of colourless cells both of the granular and of the non-granular types. In addition, the large lymphocytes which are present in such numbers are elements quite as foreign to the normal adult blood as are the finely granular myelocytes. It is not necessary to suppose an affection of any other tissue beside the marrow, however, to explain such a blood picture as this case presents. If we believe that in leukæmia we have to deal with a "sarcoma of the blood" then we must be on the look-out for appearances indicative of a reversion to the embryonic type, which such a supposition would imply. There is good evidence that the blood in this case affords a marked example of such reversion. In proof of this I shall compare the appearances presented here with my observations[2] on the bone marrow of the human fœtus which accord in general with the results of Pappenheim,[3] Dominici,[4] Hirschfeld,[5] and others. In the femur marrow of the human fœtus at three and a half months and until between the fifth and sixth months the majority of the colourless cells are non-granular. They consist principally of mononuclear cells which possess a markedly basophile reticular protoplasm. With Jenner's stain the nucleus appears less basophile than the cytoplasm. It is to these undifferentiated leucoblasts that Pappenheim, Hirschfeld, and others have applied the term "lymphoid cell." At the early ages the protoplasm of these cells is more abundant and more ductile than later when they come to resemble exactly the large lymphocytes which are present in this case and which it seems reasonable to regard as a reversion to the type of the undifferentiated leucoblast. With regard to the appearance of granulations in the cells of the fœtal marrow, eosinophile myelocytes and polymorphonuclear cells in all respects similar to those present in the adult are already to be found in the marrow at three and a half months. At this age and until later dates (five months) atypical forms are present which are to be regarded as cells in the process of differentiation and young so far as granule formation is concerned. Such appearances are: (1) minute granules and variations in the size of granules in a cell; (2) restriction of the granules to one part of a cell, the protoplasm of the rest being markedly basophile and reticular; (3) scanty numbers of granules in a cell; (4) the assumption of the neutrophile tint by granules with triacid staining; and (5) a marked basophile reaction of the granules with basic dyes, metachromatic staining being absent, however; also the occurrence of both basophile and eosinophile granules in the same cell. All of these characters are met with in this case; but while the basophile reaction of young eosinophile granules is well known it is not often, I think, that the condition is so universal as in this instance.

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[2] Browning: Journal of Pathology and Bacteriology, vol. x., 1905.

[3] Pappenheim: Virchow's Archiv, Band clvii., p. 19, 1899.

[4] Dominici: Comptes Rendus de la Société de Biologie, *tome* i., p. 721, 1899.

[5] Hirschfeld: Virchow's Archiv, Band cliii., p. 335, 1898.

The neutrophile granules make their appearance at a later date than do the eosinophiles. They are not, as a rule, present in a notable number of cells in the marrow till between the fourth and sixth months. Prior to their appearance the myelocytes and polymorphonuclear leucocytes are non-granular and even at the sixth month I have seen non-granular polymorphonuclear cells in heat-fixed films of the marrow stained by Ehrlich's method. In the adult the granular leucocytes are the products of the mitotic division and nuclear transformation of mononuclear cells bearing similar granules (myelocytes); but it is probable that in the fœtus granules may begin to be secreted for the first time in cells which have become polymorphonuclear.

With regard to the question of the origin of granular cells outside the bone marrow, I am satisfied from my observations on the thymus in the human fœtus that both eosinophile and neutrophile leucocytes arise from the mitotic division of mononuclear granular cells lying in the loose connective tissue which runs between the lobules and in which the blood-vessels course; the same holds good of the liver (eosinophile cells were seen in the perivascular tissue of the portal vein in a ten weeks' fœtus) and prior to the granular cells we must have, of course, the undifferentiated leucoblasts. The connective tissue in these situations, however, undergoes a degree of physiological thickening which must within at most a few years after birth render it so dense as to hamper any extensive process of cellular proliferation and emigration into the blood vessels so that probably long before adult age is reached the leucocyte production existing normally in these situations in the fœtus must have come to an end. It is held by Pappenheim and others that the lymphoid cell gives rise to the red corpuscles as well as to the leucocytes. Nothing in the blood of this case lends support to the idea of the interdependence of these two classes of cells.

In conclusion, there is good ground for supposing that the blood in this case presents indications of a reversion to conditions which normally exist in the marrow in fœtal life. Such is the explanation of the abnormal eosinophile forms and it is to the reversion of the granular myelocyte to the non-granular "pre-myelocyte" or "indifferentiated leucoblast" or "lymphoid" cell or to the excessive proliferation of the few such cells which normally are present in the adult marrow with the resumption of embryonic activity that this case of leukæmia owes its "mixed" characters. This view is in complete accordance with the opinions expressed by Muir on this question at the annual meeting of the British Medical Association.

A number of cases of leukæmia and allied conditions are on record in which both the granular and the non-granular cells were increased. In Wilkinson's case[6] there was a great increase in the number of leucocytes in a woman, aged 35 years, with enlarged spleen but without enlargement of the lymphatic glands. The blood showed numerous myelocytes and large lymphocytes; eosinophiles and mast cells were increased; megaloblasts and normoblasts were present. Eight days later—two days before death—the blood was lymphocythæmic with the presence of only a few myelocytes. In the case recorded by Michaelis,[7] the patient, a woman, aged 50 years, complained of weakness and breathlessness and was under observation for three months before death. The blood picture was fairly constant: red corpuscles, 3,500,000 per cubic millimetre; a few normoblasts; and leucocytes, 116,000 per cubic millimetre. Differential count: neutrophile poly morphonuclears, 16·0 per cent.; neutrophile myelocytes, 7·2 per cent.; eosinophiles, 0·4 per cent.; mast cells, 0·4 per cent.; large lymphocytes, 56·0 per cent.; and small lymphocytes, 20·0 per cent. Cell forms showing differentiation from the non-granular to the finely granular type were observed in the blood. Post mortem the spleen weighed four and a half pounds. It consisted mainly of large non-granular mononuclear cells and giant cells with scanty myelocytes; marrow, ditto; giant cells were present both in the lymph glands and the liver.

Simon's[8] patient was a man, aged 42 years, who came under observation 18 months before death, complaining of indigestion. Blood examination at first showed red corpuscles 1,350,000 per cubic millimetre, leucocytes not increased, but 6 per cent. neutrophile myelocytes; eosinophiles and mast cells were absent; normoblasts and a few megaloblasts were present. Eight months later a blood count showed red corpuscles 3,968,000 per cubic millimetre; hæmoglobin, 40 per cent.; and leucocytes, 14,000. Splenic enlargement was now perceptible and the spleen increased till it reached the umbilicus. Ulcerative stomatitis supervened before death. No necropsy was made. Blood counts showed that the number of leucocytes rose in the last week of life to 116,000, never having previously been higher than 26,000. The neutrophile polymorphonuclears varied between 17·9 and 50·7 per cent; neutrophile myelocytes between 29·1 and 53·5 per cent.; eosinophiles none; mast cells, between 0 and 1·3 per cent.; large lymphocytes, between 4·9 and 55·3 per cent.; and small lymphocytes between 0·6 and 14·3 per cent. The later counts showed, as compared with the earlier ones, a marked increase in the large lymphocytes and a diminution in the neutrophile polymorphonuclears.

Fowler's case[9]—a girl aged five years—showed about 250,000 leucocytes per cubic millimetre, of which some 50 per cent. were large non-granular cells; neutrophile myelocytes were above 12 per cent.; eosinophile polymorphonuclears and myelocytes were present and mast cells from 3 to 4·4 per cent. Among the large non-granular cells some had intensely basophile protoplasm; others slightly basophile protoplasm, which was in some instances hyaline and in others contained fine granules ranging from basophile to neutrophile in tint. These were taken to represent stages in differentiation from non-granular to granular cells. In Wolff's two cases[10]—in adults—non-granular cells constituted 78 per cent. of the leucocytes, while 17 and 5 per cent. of differentiating forms were present. In a case of chloroma reported by Klein and Steinhaus[11] the leucocytes numbered 20,000, finally 41,000 per cubic milllimetre; lymphocytes rose to 66 per cent., 47 per cent. being large. Myelocytes were present in the blood throughout (from 16 to 32 per cent.). Post mortem the myelocytes constituted the greater part of the tumour masses but were not present in the spleen and glands.

The question which is raised by the occurrence of such cases as the above is whether we are dealing with a form of leukæmia in which both myeloid and lymphoid tissue are involved. The researches of Ehrlich served to separate the leukæmias into two broad classes: (1) the myeloid, in which the granular leucocytes are as a rule increased in the blood,[12] and where in addition the myelocyte forms find their way into the circulation, the proportions of the various granular forms (neutrophile, esinophile, mast cell) presenting wide variations from the normal; and (2) the lymphoid, in which non-granular forms predominate and are usually both absolutely as well as relatively increased, the small forms predominating as a rule in the chronic and the large ones in the acute cases.

In the normal adult the seat of proliferation of the granular cells is practically restricted to the bone marrow and this appears to be absolutely the case so far as the neutrophile forms are concerned; on the other hand, non-granular cells are found to multiply in the connective tissue throughout the body as well as in the lymph glands. Thus, not merely are the granular and the non-granular cells, on the whole, distinct in their seats of origin in the adult but they subserve different functions, as is shown by the reactions of myeloid and lymphoid tissue under pathological conditions—e.g., in the infections (Muir[13]), and there is no evidence that the cells of the one type become transformed into the other.

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[6] Wilkinson: THE LANCET, June 20th, 1903, p. 1739.

[7] Michaelis: Zeitschrift für Klinische Medicin, Band xlv., p. 87, 1902.

[8] Simon: American Journal of the Medical Sciences, vol. cxxv., p. 984, 1903.

[9] Fowler: International Clinics, vol. iii., thirteenth series, p. 217, 1903.

[10] Wolff: Zeitschrift für Klinische Medicin. Band xlv., p. 385, 1902.

[11] Klein und Steinhaus: Centralblatt für Allgemeine Pathologie, Band xv, No. 2, p. 49, 1904.

[12] In cases cited by McCrae (Brit. Med. Jour., vol. i., 1900, p. 760) the number of leucocytes fell at times to normal, with or without the persistence of myelocytes.

[13] Muir: Transactions of the Pathological Society of London, vol. liii., part iii., p. 379, 1902; also Journal of Pathology and Bacteriology, vol. vii., p. 161, 1901.

The progenitor of both the granular and the non-granular cell types in the fœtus, however, is the large mononuclear cell with non-granular basophile cytoplasm. Hence a reversion to the embryonic condition on the part either of myeloid or of lymphoid tissue will ultimately lead to the appearance of the undifferentiated leucoblast. The occurrence of these cells in unusually large numbers in the blood in a myeloid leukæmia will give rise to a mixed-cell blood picture and does not necessarily imply any participation of lymphoid tissue in the proliferative process. That these undifferentiated leucoblasts may, as in the embryo, perform the function of producing granules and thus become myelocytes is apparent from the observations of Wolff, Michaelis, and Fowler as regards neutrophiles, and as regards eosinophiles in my own case. As Hutchison[14] remarks, one would expect the reversion to the non-granular form to occur with greater ease in childhood and it is significant that very few cases of pure myeloid leukæmia have been observed in children.

It is well known that metastatic carcinomatous growths in bone may give rise to a blood picture resembling myeloid leukæmia (Kast[15]), owing to a disturbance of the myeloid tissue which may either be of the nature of a reaction or may be due to mechanical derangement. Similar disturbance of the marrow by proliferating lymphoid tissue serves to explain, as Hirschfeld[16] suggests, the small percentage of myelocytes which is occasionally found in the blood in cases of lymphatic leukæmia (Bradford and Shaw[17]). If the myelocytes appear in larger numbers, however, the blood picture will be of the mixed-cell type. Such may be the explanation of the case of Michaelis, *vide supra*, (Pappenheim[18]).

In conclusion, it may be said that until the etiological factors in the causation of leukæmias are understood it is impossible to decide whether both myeloid and lymphoid tissue may be involved at the same time, but it must be remembered that the blood picture is merely a symptom and that transient and explicable causes have produced similar conditions of the blood—e.g., in a case of acute pneumonia in a man, aged 54 years, 96,000 leucocytes, of which 86 per cent. were lymphocytes; a case of acute sepsis, 200,000 leucocytes, of which 12·2 per cent. were neutrophile myelocytes and 6 per cent. were basophiles. Recovery in both cases was accompanied by a return of the blood to normal (Houston[19]).

SUMMARY.

1. Myeloid leukæmia is due to a hyperplasia of myeloid tissue; but the unknown causative agent is irregular in its action, so that any of the various granular types may predominate or a mixed-cell blood picture may result from the reversion of many of the cells to the condition of the non-granular undifferentiated leucoblast or from the hyperplasia of such non-granular cells normally present in the marrow in small numbers. These undifferentiated leucoblasts may assume their embryonic activity and secrete granules.

2. In leukæmias a mixed-cell blood picture may be due to: (*a*) a reversion of myeloid cells to the embryonic non-granular type; and (*b*) a reaction or mechanical disturbance of myeloid tissue owing to lymphoid hyperplasia with as a result the passage of myelocytes into the circulation.

3. It is to be understood that it is left quite an open question as to whether or not myeloid and lymphoid tissue may be concomitantly affected in a way similar to what occurs in myeloid and lymphoid leukæmias respectively. If such occurred then we should have a *mixed leukæmia* in the strict sense.

Glasgow.

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[14] Hutchison: Goulstonian Lectures, 1904, THE LANCET, May 7th, 14th, and 21st, 1904.

[15] Kast: Deutsches Archiv fur Klinische Medicin, Band lxxvi., p. 48, 1903.

[16] Hirschfeld: Fol. Hæmatolo., No. 3, p. 50, 1904.

[17] Bradford and Shaw: Transactions of the Royal Medical and Chirurgical Society, vol. lxxxi., p. 343, 1899.

[18] Pappenheim: Zeitschrift fur Klinische Medicin, Band xlvii., p. 216, 1902; also Band lii., p. 257, 1904.

[19] Houston: Brit. Med. Jour., vol. ii., p. 591, 1904.

RUSSIAN SCIENTIFIC SOCIETY'S CENTENARY.—The *Novoe Vremya* says that August 7th was the centenary of the founding of one of the oldest Russian educational societies—the Imperial Moscow Society of Experimental Natural Philosophy.

NOTES ON ABDOMINAL SURGERY BASED UPON COMPLETED RECORDS OF 744 CASES.

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A REVIEW of work in any specialty is always interesting and especially if it extends over a number of years and thus reflects the various changes which have taken place in the technique employed. To the operator himself certain points also become clearer and may perhaps be advanced with more confidence for the consideration and criticism of others.

Abdominal surgery covers a wide field. For some time it has been the fashion to limit that part of it which is only seen in women and which, indeed, depends upon their sex as a separate specialty. But there are not wanting signs that this fashion is upon the wane and that it is being realised more and more convincingly that such a limitation has no anatomical or clinical ground for justification. That any man who opens the abdomen must be prepared to deal with whatever he may find within is, one would think, self-evident, and if that is so abdominal surgery is a far more fitting term to describe the work done than mere gynæcology. The most recent works on gynæcology describe operations upon the bladder and intestine, and necessarily so, since these organs are frequently implicated in purely gynæcological diseases, such, e.g., as pyosalpinx. It cannot surely be pretended that such organs occur only in women. Two cases which have occurred in my practice amongst others may serve to illustrate and emphasise this point.

CASE 304.—In March, 1898, I was asked by my friend, Dr. G. Knapton of Manchester, to see with him a woman, aged 35 years, who complained of great pain in the left iliac fossa which had lasted 21 years, always becoming intensified at the menstrual periods. This fact had, no doubt, strongly impressed the mind of a surgeon, one who practised pure gynæcology, who had removed both her ovaries in the previous July under the belief that they were cirrhotic and therefore the cause of her suffering. Whilst convalescing and lying in bed the pain was certainly easier but it recurred as soon as she began to go about and was at the time of examination, if anything, more severe than before. She had been seen by a physician in Manchester who advised that the ligatures around the ovarian stumps should be removed, as, in his opinion, the pain was due to the inclusion of nerve fibres in their grip. Closer investigation, however, brought out certain facts. First, the pain had been present for one year before menstruation began at all. Secondly, it always started below the left lower ribs and passed downwards, shooting towards the pubes and the left leg. As long as the pain was confined to the upper region it was bearable but when it passed downwards morphine was required to relieve it. Thirdly, during the presence of the pain there was an incessant desire to micturate and she would spend a considerable time endeavouring to pass urine, which was always impossible until the pain relaxed, when a little urine would pass, the passage of which caused great pain which was now referred to the urethra. After the first passage urine would be passed again in fair quantity four or five times in half an hour. Examination (recto-bimanual) discovered a rather large calculus fixed in the lower end of the ureter. This was removed through the bladder by suprapubic cystotomy and the pain disappeared entirely.

CASE 573.—In April, 1903, I was asked by my friend, Mr. R. P. Lawson of Openshaw, to see with him a relative who had been under the care of a gynæcologist who had operated with a view to the removal of her ovaries which were believed to be diseased. Finding on opening the abdomen that both were healthy this operator had reclosed the abdomen. The patient had complained of pain in the right iliac fossa for four years. This had been of a gnawing character and passed down into the right leg; until lately it could be relieved by lying down and removing all clothing from the part; but at the time of examination it was continuous and position had no effect. The pain was accurately localised by the patient at a point slightly below McBurney's point. The attacks had been more frequent and more severe during the last 12 months. The pain was associated with nausea but there was no vomiting. The action of the bowels was regular and did not affect the pain. There were well-marked dulness on percussion above the right Poupart's ligament and an equally distinct swelling with a crescentic upper margin, convex upwards, with the ligament as a base. The pelvis was clear and the uterus was moveable and anteflexed. On May 3rd, 1903, the appendix was removed by the usual incision and was found to be kinked. It was also adherent at its tip. The pain immediately subsided and has not since returned.

My abdominal operations number considerably over a thousand but I have only complete notes of 744 and it is upon these that I have based what remarks I propose to make and from which I have drawn illustrative cases for reproduction. The records themselves go back for nearly 20 years. This, whilst it prevents the declaration of the low mortality which is increasingly becoming possible, adds to the interest, since they supply specimens of most of the operations which have been practised and show to some extent the elaboration of the present methods. As I have not been restricted by the necessity of having to teach students certain definite procedures for the purposes of examination I have perhaps been able more easily to adapt my work and methods to any improvements as they have been introduced. But it would be clearly impossible to reproduce each case of so long a list except in such an abbreviated form as entirely to destroy any interest they may possess. I propose, therefore, to give the numbers of each class with their mortality, whilst one or two, or more, of those which appear most worthy of reproduction are given in detail.

Ovarian cystomata.—Of these I have operated upon 114. The mortality has been 7·8 per cent. This is a large mortality compared with that at present usually obtained, but all but two of these deaths occurred 15 years ago, when the technique of the operation was not so well understood. Of these two cases last mentioned one, detailed below, was that of an immense multilocular cyst, such as is very rarely seen now, adherent all over the anterior abdominal wall and to the entire under surface of the right lobe of the liver, which oozed freely after the cyst wall had been peeled off it. In the other a multilocular cyst was buried beneath densely adherent Fallopian tubes full of pus with an abscess in the uterine wall and the case should probably be rather classed as one of double pyosalpinx. The ordinary ovarian cyst now presents but little of interest to surgeons and the ease and safety of the present operation contrast vividly with that of the time of Spencer Wells, whose operations I was privileged to witness on several occasions. The case to which I have referred above is here given.

CASE 679.—The patient, aged 40 years, was sent to the Ancoats Hospital by Dr. Ursula D. Fowler of Manchester on May 4th, 1905. The patient first noticed a swelling in the abdomen four or five years ago. This caused no discomfort and the increase in size had always been gradual. Difficulty in walking and increasing dyspnœa had been noted for 12 months. The menopause occurred in 1904. She had never been tapped. On examination on May 6th the abdomen was found to be enormously distended, measuring in circumference 46 inches. It was dull all over and gave a modified thrill. The veins were dilated in the upper half of the abdomen.

The operation was carried out on May 8th, the patient being placed in the Trendelenburg position. A median incision had to be carried upwards to the mid-point between the umbilicus and the xiphoid cartilage. The cyst was adherent to the anterior abdominal wall for the whole distance and for four inches in width, also to the under surface of the right hepatic lobe and to the omentum and the duodenum. It contained 17 pints of fluid and sprang from the right broad ligament. One and a half pints of saline solution were transfused while the patient was on the operating table. She died on May 9th.

The most noteworthy point in the case appeared to be the existence of these widespreading and firm adhesions in a patient who had never been tapped. In all previous cases where adhesions to the anterior wall were noticed paracentesis had been carried out several times and the complication has usually by most surgeons been attributed to this measure, which in earlier times was always practised before any attempt at removal was made. Here, as I have said, there had been no such preliminary interference and yet the adhesions were the firmest and most extensive that I have ever seen.

Fibroid disease of the uterus.—The cases in my list number 96. Of these the first three, operated upon between 1890 and 1894, were fatal. The first two were examples of extraperitoneal hysterectomy, the pedicle being brought out of the abdomen and fixed in the abdominal wall. The third was a fibro-cystic tumour springing from the uterine fundus and it was removed by a wedge-shaped incision, the cut uterine surfaces being afterwards sutured together. A glass drainage-tube was placed in Douglas's pouch and drainage in this direction was carried out by means of a syringe and tube by which its contents were from time to time removed. The patient died on the second day evidently from sepsis. Both these methods are now obsolete.

In 1897 Clark of Johns Hopkins University showed the futility of suprapubic abdominal drainage in these and similar cases and its harmfulness and since that time I have totally abandoned its use. Although I was fortunate enough to see the late Lawson Tait operate upon this class of case by his own operation of removal of the ovaries I have never practised that method. In one case I started with that intention but the left ovary was buried between two masses of fibroid growth and the whole front of the tumour was covered by large veins beneath the peritoneal coat. An attempt to ligature the ovarian artery on this side set up so much and such uncontrollable oozing of dark venous blood that I was forced to abandon the idea and proceed to entire removal. Soon after I became impressed by the writings of Brown-Séquard, Dunn, and Curatulo as to the value of the internal secretion of the ovaries and I saw enough of the evil results which followed removal of both ovaries for tubo-ovarian abscess during operations for double pyosalpinx to convince me of their truth, so that I have no examples of this method which I then determined to avoid. Tait himself made certain admissions which detracted much from the force of his previous strenuous advocacy. In certain cases he had found that good results were greatly delayed, in one case for two or three years. This was a serious drawback in such cases, which then were only operated upon when the patients were exsanguinated by the furious losses of blood; they bore operation badly, and a rapid check to the bleeding was the one thing required. Obviously a measure which required so long for its action to become effective left a good deal to be desired. Death might very well take place whilst its result was awaited.

In common with all other abdominal surgeons I was greatly impressed by the accounts received from Paris of the work of Apostoli and by the elder Keith's impassioned advocacy of his method of electrical treatment. At some considerable expense I obtained all the necessary instruments and treated a few cases in this way but it rapidly became evident that the positive pole was only a neater and more effective way of using a cautery, whilst I could never satisfy myself that the negative pole produced any results at all worth consideration. The craze lasted for a time and then died out. Tait, Martin, Mackenrodt, and others reported cases followed by distinctly evil results, and now, I suppose, there are not more than three or four men, if so many, who advocate electricity as a serious treatment for fibromyoma. Meanwhile the methods of removal of the actual tumours themselves became greatly improved and simplified, the two greatest advances, so far as I know, being the panhysterectomy of Christopher Martin and Landau's splitting operation, a modification of which is known as morcellation. The former operation I have performed 46 times, in 12 of which I have carried out the combined operation, commencing from the vagina, separating off the bladder, opening Douglas's pouch and tying both uterine arteries before opening the anterior abdominal wall. By this means, although from the first it was recognised that the later steps would have to be carried out through the abdomen, either because of the mere bulk of the tumour or because it was complicated, as this condition of the uterus so often is, by pyosalpinx, the abdomen was kept open for a much shorter time than would otherwise have been necessary and the whole work was accompanied by less bleeding because the main vessels, the uterines, were ligated early in the process. It has often proved to be a very difficult thing to obtain control of these vessels from above. The mass of fibroid is greatly in the way; it grows often irregularly and may press the uterine arteries much out of their normal position above or bury them beneath it. From below these vessels, on the contrary, can easily be found and secured in the majority of cases. But of course such a proceeding involves necessarily, just as vaginal hysterectomy involves, the loss of the cervix. It has always been a source of profound wonder and admiration to the writer to see the anxiety of some operators to save the cervix. For several years the so-called supravaginal amputation of the cervix was the most vaunted operation and even yet, as in one of the medical journals of June of this year, a well-known surgeon advocates the French modification of this operation—*l'hysterectomie subtotale*—and brings forward a string of cases to support it. With these operators there is apparently nothing so highly prized as this bit of tissue. At first the cervix was cut straight across at or about the level of the internal os Then, as it was found that pus sometimes accumulated about its upper end, necessitating dilatation of the remaining cervical canal in order to liberate it, the canal was variously treated at the time of operation. It was mopped out with strong carbolic acid, it was cauterised by the Paquelin or electric cautery, it was dilated and gauze drawn through, it was cut out—the whole remaining cervix was split and a wedge removed containing the canal; it was shaved down and the fragments reunited. We were told that it was the keystone of the pelvic diaphragm, that without it the pelvic contents would prolapse, that if entirely removed the vagina would atrophy and become senile, that by its removal the ureters would almost infallibly be damaged, that it prevented infection from the vagina, although a canal, and often a septic one, passed down its centre connecting that cavity with the raw surfaces above and although at the same time vaginal hysterectomy, which necessitates its removal as a primary step, was growing in favour and was admittedly not followed by all these terrible results. There were several plain reasons why it should go, not the least of which was the subsequent degeneration of it, in some instances, by carcinomatous changes in after years, but, in spite of all, certain surgeons still clung desperately to it as all-essential. They seemed to say, to parody a well-known rhyme:—

Let abscess, sepsis, cancer risk our patient's life,
But leave us still the cause of all this strife,
Our bit of cervix!

When the uterus has been removed, however, the pelvic peritoneum has always, if possible, been closed. In the majority of cases this is not merely possible but easy. The ligatures upon the tubes at each side are left long. Toothed forceps secure and draw down the peritoneal flap hanging from the bladder in front and the rectum behind. The tubal ligatures are drawn upon, so that the ends of the tubes are brought beneath the level of the flaps; these latter are sewn over and to them by a continuous catgut suture which closes entirely the peritoneal cavity, which now needs no drainage, since all the raw surfaces are outside it. A light gauze packing is laid between the raw surfaces of the base of the bladder in front and the raw broad ligament surfaces on either side. This is withdrawn in three days' time and is not replaced. By that time the peritoneal cavity is absolutely closed; the raw surfaces beneath can safely now be treated by irrigation daily, since no fluid can find its way into that cavity and the relief to the patient, who now no longer needs to dread the packing of new gauze between tender surfaces, is immense. No decomposing material can accumulate since the lower opening is perfectly free and granulations rapidly fill up the steadily contracting space. The whole process usually takes about three weeks, sometimes even less. Another great advantage of this plan is that the omentum and intestines have now no raw surface or edge to which they may become adherent. They move smoothly over a perfectly smooth peritoneal floor. They cannot escape into the vagina as has happened more than once when the whole vaginal outlet has been left open. Four cases are, perhaps, worthy of more detailed remark and may serve to illustrate most of these points. I take one from 1893, a case treated by extraperitoneal fixation.

Case 88.—The patient, aged 38 years, who had been married for 20 years, had had three children, the youngest of whom was 13 years of age. She was admitted to hospital on April 17th, 1893. Menstruation had commenced at the age of 15 years; it was normal, regular, and painless. Three years previously to admission the patient had suffered from hæmorrhoids and an ischio rectal abscess. Seven years before examination she had received a kick in the abdomen and six months later she first noticed some swelling. This was associated with intermittent pain; during the last six months the increase in the swelling had been far more rapid and the pain which had always been more marked on the right side had become constant. Examination showed a greatly enlarged abdomen with a circumference at the umbilicus of 38 inches and a vertical measurement from the xiphoid tip to the pubes of 16½ inches. The main swelling lay obliquely in the pelvis, its rounded fundus lying in the right iliac fossa. In the middle line and above lay a smaller mass intimately connected with the former. The uterus was carried high up in the pelvis out of reach by the finger in the vagina.

Operation was proceeded with on April 24th, the dorsal position being adopted. A long median incision was made from the pubes to two inches above the umbilicus. The omentum was adherent to the upper mass. These adhesions were tied and cut. The tumour was turned out of the abdomen; it appeared to extend from one side to the other of the pelvis. An elastic cord was carried round its base and tied. Strong pins were passed through the pedicle below this. The main tumour was then cut away; it included the uterus above the internal os which was imbedded in the mass, which appeared to grow from the back and sides of that organ. A strong wire loop was placed in the groove made by the elastic cord and tightened up. When this was tight the cord was removed. More of the growth was dissected out, the wire being still further tightened as this was taken away. Some vessels were tied on the surface. A glass drainage-tube was placed behind in Douglas's pouch. The parietal peritoneum was then united to the stump all round except where the Keith's tube lay. Whilst closing the abdomen hæmorrhage came on, necessitating a reopening of the wound and the ligature of a vein behind the stump. The collapse was very great. Ten ounces of normal saline solution were injected into the median basilic vein. Death from shock occurred on the 26th. The tumour weighed 16½ pounds. The loop was found to have nipped the fundus of the urinary bladder.

Case 502.—This case was treated by panhysterectomy. The patient, aged 57 years, was sent by my friend, Mr. J. E. Harburn of Buxton, in May, 1902. She had been married for 27 years and her only child was now 25 years of age. Menstruation had always been regular until 18 years previously, when an increased flow was first noticed. One year later intense flooding suggesting a miscarriage was experienced. From that time she had lost greatly at each period and was usually in bed for a fortnight and on a couch for the next fortnight in order to recruit, "the flooding was so tremendous." She had consulted various well-known surgeons, amongst them the late Sir Spencer Wells. He and most of the others counselled patience until the arrival of the menopause, as the tumour was very large, and it was feared that she would not survive any attempt at its removal. Another person consulted was Mattei, at that time famous for his bottled blue and pink electricity. About a year preceding examination urination had ceased for three days, during which time she had suffered greatly. The abdomen became distended and there was intense pain over the lower abdomen and the right kidney. After frequent hot baths and fomentations a little urine passed; this was succeeded by a large clot and some fluid blood, after which the secretion became again normal. This was the only severe attack of the kind but from time to time micturition with passage of pus and blood mixed with it had been more frequent than usual, and such occurrences had been accompanied by some pain in the right renal region. There had never been any difficulty in defæcation but diarrhœa had been present occasionally. She was examined on May 15th. There was a large irregularly shaped mass in the hypogastrium spreading into both flanks, but especially towards the right side. The abdomen was pushed forward below. Portions of the mass were extremely hard. All the outlines, however, were distinct and rounded. The os was carried high up and was somewhat fixed. Its lumen was patulous and a very offensive discharge issued from it. The broad ligaments appeared to be free near the pelvic wall on either side.

The patient was operated upon on May 17th. A long median incision was made from the pubes to two inches above the umbilicus. The abdominal wall was very thin. A large amount of œdematous omentum containing large tortuous veins was adherent mainly to the upper pole of the uterus which, greatly enlarged, formed the centre, with two wings formed by calcified subperitoneal fibroids springing from either side. After separation of the omentum the left infundibular ligament was tied and divided and the bladder was separated in front. There were several broad membranous adhesions between the top of this viscus and the tumour. Then the right infundibular ligament was also tied and divided; both ovaries were left. The vagina, being made to project by a long curved forceps passed up into the posterior fornix, was cut through from above and the os was seized by Doyen's erignè and pulled up. As this was drawn up the vagina was divided all round and the uterus was peeled off the remaining attachments to the bladder. The uterine arteries were tied and divided. The mass was then cut loose and removed. It weighed 7 pounds 13 ounces. All ligatures were cut short and the pelvic peritoneum was united over gauze drawn through into the vagina. The anterior wound was then closed. The mass removed was composed of several large tumours. One very large one on the left was calcified. Another in the centre springing from the fundus uteri was pedunculated with a very thick pedicle. The uterus itself contained many fibroid masses; one especially was partially extruded from the left wall into the uterine canal and had at its lower extremity been so gripped by the internal os that all below this point was gangrenous. The operation lasted two hours. The patient returned to bed with a temperature of 98° F. and pulse of 80. With the exception of the formation of an abscess, which was opened in the left inguinal region and drained, she made a very good recovery and lived in perfect comfort for two years. At that time a subperiosteal sarcoma appeared in the right humerus at its upper extremity and spread rapidly over the scapula, causing death in about eight months.

CASE 354.—Landau's method was adopted in this case. The patient, aged 43 years, was admitted on August 22nd, 1899. She had had one child who was now 21 years old. Menstruation had commenced at the age of 18 years and was regular up to the only pregnancy. The labour was a lingering one and the patient had never been well since. Menstruation commenced again afterwards and was regular during lactation and since. There had been no miscarriages. She was first seen in April, 1899. At that time there was a tender mass in the right iliac fossa which she had noticed for two years and to which her attention had been drawn by its having caused her to vomit and the pain in this region produced by that act. There had been constant heaving and regurgitation of food ever since. The right Fallopian tube was found to be full of pus at that time and was removed by abdominal section but the uterus appeared to be normal in size and shape. In August, 1899, she returned, complaining of fresh pain and the uterus was then felt to be enlarged, tender, above the pelvic brim, and irregularly bossed. The enlargement was mainly to the right, the rounded masses being hard, smooth, not elastic, with clean, well-defined outlines, and evidently intimately connected with the uterus.

On August 29th a vaginal hysterectomy by Landau's method was performed. Douglas's pouch could *not* be opened in consequence of the adhesions. After freeing the uterus anteriorly it was split centrally; as this advanced the adhesions above became still plainer and the uterine fundus was peeled out of them. During the splitting the scissors encountered and split several fibroid masses which were peeled out of their capsules, thus greatly diminishing the size of the uterus and permitting it more easily to descend. When the split uterus was brought down a large elastic mass was found fixed by adhesions in the position of the left ovary. By tying and dividing the now tense round ligament and peeling away from the left broad ligament it became possible to enucleate the mass from below and in front upwards and backwards. When delivered it proved to be the left ovary and tube which formed a tubo-ovarian abscess. The pelvic peritoneum was closed by suture, all ligatured parts being drawn below. These ligatures were now cut short and the vagina was loosely packed with gauze which was removed on Sept. 3rd. The patient made a rapid recovery, as nearly all these vaginal enucleations have done, in marked contrast to those of the same class treated by abdominal section.

CASE 355.—This case was treated by the combined operation. The patient, aged 65 years, was sent by Dr. R. T. Parkinson of Manchester on April 23rd, 1899. She had been married for 43 years and had had seven children and two miscarriages. Menstruation had commenced at about the nineteenth year of age. At that time it was irregular owing to anæmia. It was regular up to the age of 54 years, but afterwards was irregular up to 60 years of age, when it ceased. Eight years previously to examination a polypus was removed per vaginam by another surgeon. The patient was fairly well afterwards for some weeks but then she began again to have floodings and pain, especially on urination. For about five years an extremely offensive discharge had appeared and she had been considered to be suffering from carcinoma, apparently for this reason, by other medical men who had seen her. She was examined on April 23rd, 1899. The os was widely dilated. A foul-smelling, brownish, watery fluid was escaping, mixed with cheesy-looking débris. The uterus itself was large, mobile, rounded with irregular projections, also with clean, rounded outlines passing, but with no infiltration, into the broad ligaments on either side. There was a very troublesome cough with bronchial expectoration.

The operation was carried out on April 27th. First stage.—The patient was placed in the lithotomy position. The cervix was stuffed with gauze and sewn up. The bladder was separated off for some distance. Douglas's pouch was apparently opened and the vaginal wall was divided all round the cervix. The broad ligaments were tied and divided for about one and a half inches on either side. As there was troublesome hæmorrhage from the posterior wound *five forceps were left on.* Second stage.—Placing the patient in the Trendelenburg position the abdomen was opened by a median incision. The left Fallopian tube was tied and divided near the uterus. The wall of the uterus was greatly thinned and it tore during manipulation, liberating some foul material which was caught on sponges which had been packed around and beneath. There was a veil-like broad adhesion behind which was divided. The bladder was entirely separated in front. The opposite tube was also tied and divided and the uterus was removed. There was still considerable venous hæmorrhage from the edges of the divided broad ligaments. These were clamped but as the patient showed increasing signs of collapse a gauze drain was drawn through into the vagina, its upper extremity being flush with the peritoneum; the clamps were left and the abdominal wall was closed up to and around them. Once or twice during the ensuing 24 hours collapse was again threatened but it was averted by transfusion of saline solution and other measures. The forceps were removed on the 29th. The lower part of the abdominal wound was covered by slough. Very foul discharge came from the vagina. A very anxious time followed. The gauze was removed from the vagina on the 30th, on which day some flatus passed per anum. The urine at first was passed unconsciously but control was soon recovered. The bowels were opened on May 1st. The facial expression was for a long time extremely bad but the pulse remained slow and full and there was no rigidity of the abdomen. Large black offensive sloughs were removed from the abdominal wound which was dressed with glutol and pure phenol and later with ichthyol ointment. Fluid passed freely through from the abdominal wound to the vagina and *vice versâ* during douching until the 6th, when the communication became blocked by repair. Ultimately the patient recovered perfectly and that winter she for the first time for eight years spent Christmas with her children. Before this she had been prevented by the foul smell of the sloughing fibroma from mixing with any of her relatives.

Considering the safety of hysterectomy at the present day—I have not seen a single death after the vaginal operation for the last three years—is it still considered wise to advise patients suffering from this disease of the uterus to postpone operation in the often futile hope that the menopause will bring an end to their sufferings? In Case 502 the change of life had been looked for as a certain cure and was still being hoped for at 57 years of age. Fortunately she fell into the hands of a man (Mr. Harburn) who recognised the unwisdom of this course of action, saw that the loss of blood was not being made up in the intervals, and advised operation. This delay in what is th
only absolute cure can only decrease the chances of su
when at last operation is decided upon but it is pa
frequent even now. Should there be the least suspi
malignant disease of the uterus medical men are
enough to advise removal at the earliest opportun
look upon delay as almost criminal. It is right and
that this should be so. No one can attack carcin
disease too early but how often after such an o
has been primarily perfectly successful have we
deplore recurrence of the growth or its s
appearance elsewhere? In pure fibromyoma
uterus is removed there are no such regrets. T
tion is done, the growth and the organ in
grew have gone, and being non-malignant an

to that organ cannot recur. If fibroma is liable to sarcomatous degeneration, as would seem to have occurred in the case quoted, that is a late change and is only another argument for early removal. The fibroid change in the uterus in Case 502 had obviously been present for 20 years. If the sarcoma which appeared in the patient's humerus two years after hysterectomy was really, as we may suspect, secondary to the uterine growth, will anyone maintain that it had been present in that growth for the whole 20 years? and if not there must have been a time when removal of the fibroid uterus would not merely have stopped the excessive hæmorrhages from which the patient suffered so long and which practically debarred her from the enjoyment of life—which in all other respects her surrounding circumstances and her own disposition combined to render a very pleasant one—but have preserved her from the terrible disease to which at last she fell a victim. In carcinoma we do our best, but we too often fail in consequence of the very nature of the disease for which we operate. In fibromyoma the same proceeding brings about a successful and *permanent* result but with some medical men the operation is practically tabooed for this very reason—because the disease is not malignant and therefore will not immediately kill the patient.

One other objection to these operations which, I understand, is still made in some quarters, that the operation brings about acute menopause and so endangers the mental condition, is obsolete, because in these later operations the ovaries are left. In most cases which I have seen the mental as well as the physical condition immediately and permanently improve because the ovaries and the brain are no longer starved of their proper supply of blood. As time goes on one finds it more and more possible to complete these and similar operations through the vagina and the gain to the patient in rapid recovery and to the surgeon in loss of anxiety is extremely great.

Carcinoma of the uterus.—Cases of carcinoma of the uterus have been always treated by removal by the vaginal route. Of these I have seen a large number but have only operated by hysterectomy upon 19. I have since my earlier experiences made it a rule to attempt no case in which the disease had spread into the broad ligaments. So far I have read and have heard no evidence which has seemed to have sufficient force to induce me to do otherwise. I have, however, always explained to the sufferer or her friends that some other operators do not hold the same views and left them free to consult those who might be more daring. So far none of such patients have come back to me 18 months later to convict me of cowardice. Any who have preferred to remain have been treated by free curetting and the application of Paquelin's or the electric cautery, and these measures, with the free application of a mixture of orthoform and glutol, have appeared to give results at least comparable to those of other operators who have practised extensive removal of lymphatics and glands—Schuchardt's (the latest) operation included. The usual duration of life after the case was first seen has been about 16 months. Three of my cases in which the disease was confirmed by reports from the Clinical Research Association or other trustworthy microscopists are still alive and well more than three years after operation, one 11 years, one seven, and one just over three. From eight of the others my letters of inquiry have come back through the Dead Letter Office, four have been operated upon during the last three years, and though all living are not yet old enough to speak about. The remaining four I know to be dead from recurrent or secondary growth. I strongly suspect that the eight who have not replied are also dead in the same way. It is a relief to turn to more satisfactory lines of work.

Ectopic pregnancies.—I have seen and operated upon 13 of these and with them I have been very fortunate, since so far I have had no fatality. Four cases are given in detail below.

CASE 299.—The patient, aged 20 years, had been married for 16 months and had had one miscarriage. She was admitted to hospital on March 2nd, 1898. Menstruation had been perfectly regular until two months previously to admission; at that time her period was delayed for 14 days. When it recurred it was followed by an irregular discharge of shreds and clots which continued up to the time of her admission. Pain in the left inguinal region was first noticed on Feb. 26th. Its onset was sudden, whilst the patient was kneeling cleaning the floor. This had recurred in paroxysms ever since, with a great deal of nesmus. Vomiting occurred twice during the missed tnight but not again until March 2nd, since which time it was incessant until operation. There were some dragging of the left leg and some sharp pain during urination. Bimanual examination showed a boggy mass in the left fornix and pulsation in the uterine artery below was rendered more palpable. This mass was of uneven consistence, being distinctly boggy in places. The shape was that of a German sausage, about three inches long. The pulse was 68, the temperature was 99·4° F., and the respirations were 16.

On March 4th an abdominal section was made. The left tube was ruptured and contained black clot. Some dark blood and clots were found in Douglas's pouch and some also amongst the intestines. Both the left tube and ovary and all clots were removed. The right Fallopian tube was swollen and elongated but it was left as it seemed capable of recovery. The uterus was slightly enlarged, reddened, and roughened. It was not touched. The abdomen was closed. Perfect recovery followed and the patient was discharged from hospital on April 27th.

CASE 352.—The patient, who was 27 years of age, had been married for six years and had had two children but no miscarriages. She was admitted to hospital on March 9th, 1899. Menstruation had commenced in her eighteenth year and had been regular and painless up to the time of her marriage. Her last child had been born four years and nine months prior to admission. Lactation had extended over 14 months. The periods had returned 12 months after labour; then there was amenorrhœa for two months, after which it became regular. Three and a half months previously there had been a missed period; the next period was also absent. One month before admission a brownish-red discharge appeared which persisted up to the time of operation. On Feb. 18th she had passed a flesh-coloured mass, a second and smaller piece coming away a few days previously to admission. Pain in the hypogastrium and in both inguinal regions was said to have been present since September, 1898, and had become steadily worse. This pain, which was paroxysmal, was accompanied by syncope and occasionally by vomiting. She was examined on March 9th, when a soft doughy mass was felt behind, and to the left of, the uterus which was itself not much larger than normal but was pushed, cervix and all, over to the right. The mass was of uneven consistence and its outlines were vague. There had been some difficulty in defæcation for a fortnight. The straining always intensified the pain and during the last week this pain had been felt down the right leg as far as the ankle.

On March 10th an abdominal section was made. The omentum was adherent in front to a tense purplish tumour which occupied the left broad ligament, bulging into, and closing, Douglas's pouch and extending up to the pelvic wall. The small intestine was also adherent above. The mass contained large clots; these were carefully removed but no ovum was seen. The opened-up broad ligament was closed by silk suture and the abdomen was closed. Perfect recovery followed, the patient leaving the hospital on the 24th.

CASE 493.—The patient, aged 36 years, had been married for 17 years and had had 11 children, one miscarriage occurring between the first and second full-time children. She was admitted on Oct. 27th, 1902. The youngest child had been born six months before admission. The infant was suckled until its death four months later. The last period seen was in the first week in the month of September. When this period began it was accompanied by great pain in the right sacral region. The flow was much more than was usual and the period may have been a day or two later than normal but there had often been irregularity in date even before marriage. The pain decreased as the flow became established but it never subsided completely. It passed down both legs nearly to the knees. Since this period there had been the sensation of commencing menstruation every day. On the 23rd the patient had felt pretty well on rising and during the morning but at 12.30 noon sudden intense pain was felt in the epigastrium, rendering her unconscious. On recovery she was cold, sweating, and nauseated. There was no vomiting. This pain lasted with intermissions until her admission, occasionally passing into the right iliac region but never into the left. When it was felt on the right side she at once again became faint with cold sweating. There was some general abdominal swelling since the 23rd up to the time of operation. The breasts were not enlarged. The patient was extremely pallid with a rapid shallow pulse. There was some dulness in the right inguinal region There had been absolute constipation since the 24th.

Operation was proceeded with on Oct. 27th. An incision was made in the outer edge of the right rectus, as we could not be sure that we might not be dealing with a ruptured appendix. On opening the peritoneum large quantities of bright fluid blood mingled with black clots escaped as if under tension. The uterus was pulled up and the right Fallopian tube was found and was clamped close to the uterus and the infundibular ligament outside the fimbriated extremity. Still the bleeding continued and there was some doubt as to its source until it was found that the omentum, which had been adherent and which was separated rapidly in order to reach the mass, had retracted to the left and that the blood was coming from a vessel in it now out of sight. It was recaptured and tied; all bleeding now ceased and the old clots were carefully removed. The tube was tied off and taken away. The patient was transfused with two pints of saline solution by the median basilic vein and half a pint under each breast. The abdomen was closed. The patient was somewhat collapsed but after the transfusion she rallied pretty well. On the 31st pain over the right chest was experienced and there was some discharge of clots per vaginam. An abscess formed in the right pleura, which was opened on Nov. 5th. On the 17th some fluid was found on the left side and liberated. Ultimately the patient recovered entirely and returned home.

CASE 278.—The patient, whose age was 28 years, had been married for 11 years and had had four children and one miscarriage. She was admitted to hospital on Sept. 14th, 1897. The birth of the last child had taken place three and a half years previously and the patient had never been well since. The confinement had been tedious and was said to have lasted for five days, a midwife being in attendance. Before getting up from confinement she had noticed pain in the left inguinal region. This had been intermittent ever since. She was in bed for two months. The left leg also had been painful and aching but never swollen. Menstruation had been regular ever since up to July, 1897, when for a period of eight weeks there was no flow. On August 21st and ever since blood in slight quantity had been passed but no shreds or membranes. Sleep was now interrupted by gnawing pain which would come on suddenly and would last for five or six hours and then slowly subside. During each period of pain the flow of blood increased. Her temperature on admission was 100·2° F. On examination the os was found to be open and the cervix to be split The uterus appeared to be in the median line and but slightly enlarged. Behind, in Douglas's pouch, was a soft elastic mass extending towards the left side. The uterus could be defined as distinct from this. The mass was of uniform consistence. The broad ligaments were free on the right but vaguely blended with the mass on the left. In the left fornix the uterine artery could be felt pulsating.

On Oct. 4th an abdominal section was made. On opening the abdomen a multilocular ovarian cyst presented itself of about the size of a cricket ball. The right tube was closed and swollen. These were removed and below a collection of black clot was found in Douglas's pouch, over which was spread out the left Fallopian tube, in the lower surface of which was a rent and the lumen of which still contained a large clot. The tube had given way near its uterine extremity; the main swelling appeared to be outside the inner half of the tube. All these tissues were covered over, and fixed, by adhesions which, however, easily gave way. The whole diseased and ruptured tissues and blood were cleared away; the left ovary, being healthy, and the uterus were left. The abdomen was entirely closed. The patient rapidly recovered without any bad symptom and was discharged well on the 23rd. She returned to hospital on March 5th, 1899, with retroflexion with adhesion. Ventro-suspension was performed on the 7th, all adhesions being freed and she went home free from all discomfort on the 24th.

It may be noted that all these ectopic pregnancies were attacked from the abdominal side. I believe that certain accomplished surgeons have succeeded from the vagina but I know of one case where this method had to be abandoned owing to hæmorrhage from the ovarian artery which could not be controlled because of the adhesions above which would not permit of the delivery of the tube downwards. The abdomen had in the end to be opened and the patient died, exhausted by the loss of blood. It has always seemed to me far safer to go at once for the source of the hæmorrhage by the route which gives the most rapid access. Once the abdomen is opened it is the work of a few seconds to apply two clamps—one to the uterine end of the tube to control the uterine artery and the other to the infundibular ligament to control the ovarian. Once these are clamped no further blood can escape except from adhesions and the cleaning-up can be done with more leisure and with perfect safety. In Case 493 it would have been impossible to detect or to reach the vessel in the omentum, which would equally have been torn through if the operation had been attempted from below. None of the arguments which in ordinary cases tell so much in favour of the vaginal route, neither the more rapid convalescence nor the lessened risk of peritonitis, seem to outweigh the force of this primary advantage of the abdominal route in ectopic pregnancies, the more rapid and secure hæmostasis so obtained.

Inflammations of the Fallopian tubes.—From rupture to inflammations of the Fallopian tubes is a natural transition. Of these cases I have operated upon 58 with six deaths. Of all operations these are perhaps the most varied and the most difficult. One rarely finds two exactly alike. The amount of adhesions present, the difficulty of isolating, the complication of the appendix which may be greatly elongated and connected either with the right or the left tube, and numerous other factors all coincide in presenting a condition which taxes all the resources of the operator. Here, too, the difference between the two routes has been the cause of many battles; but why should any man seek to be known as a vaginal or an abdominal operator *tout seul?* Surely the wisest course must be to choose that route which in any particular case is likeliest to be followed by success. So far as my experience goes everything depends in the first place, upon the relative position of the tube with reference to the vaginal wall, and in the second, upon the acuteness or chronicity of the process. In acute cases, other things being equal, the vaginal route would appear to be much the safest; at all events for the evacuation of pus. Later enucleation and removal of the diseased tubes can be done, if required, with much more safety from above than if at any moment a weak spot which has been temporarily plugged with omentum or bowel should flood the whole pelvic peritoneum with pus while this is being separated off. It is especially in these cases that one sees the action of the omentum in executing repairs about the abdomen but unlike most tinkers its work improves with age; when just done it is not very much to be trusted. Probably, however, the greatest difficulty is found with the small intestine. As to the omentum it may be divided at a distance and so the patch be left undisturbed, but this is scarcely practicable with intestine. Theoretically a loop firmly adherent might be excised, the remaining bowel being reunited; but practically the operation for the removal of a double pyosalpinx is already long and exhausting enough for any patient. If to all the manœuvres unavoidably necessary are added those for excision of the intestine very few of these patients would survive. It is unnecessary to labour the point. It is especially in such cases that the age of the pus which almost necessarily escapes is of importance, as such pus becomes sterile if it has been long since formed. In theory all such pus should be prevented from touching the pelvic peritoneum by flat sponges placed beneath. In practice it is often impossible to place such sponges beforehand; they can only be placed in spaces already cleared, and separation of adhesions must always precede step by step their insertion. It is when the fingers are at work behind and below a tensely-filled, thin-walled large mass, where no sponge can get because there is as yet no space for it, that this dreaded escape of pus is most likely to occur. It is obvious that, if no pus is present at all, being previously drained away by a vaginal opening, the proceeding becomes infinitely safer. The following cases will illustrate the above and other points.

CASE 461.—The patient, aged 30 years, was admitted to hospital on Jan. 1st, 1902. She had suffered from sepsis after a miscarriage two years previously for which she was treated in another hospital in which she remained for four months. From that time she was in fairly good health until Sept. 29th, 1901, when she was confined of a living child. She was attended by a midwife who introduced her hand into the uterus after the birth of the child. The patient recovered slowly but being a charwoman she went to work as soon as it was possible. For 17 or 18 days before admission she felt some soreness all over the abdomen and three days later, though shivering and miserable, she was still at work, when severe pain in the lower abdomen forced her to stop and go to bed. She remained in bed for a fortnight when she was brought to hospital. Bimanual examination showed the uterus to be pushed forward in the pelvis by a large, tense, elastic mass in Douglas's pouch.

Posterior colpotomy, performed on Jan. 2nd, permitted the escape of a large amount of thin, watery, offensive pus. The temperature, which before had stood at 101° F., promptly fell to 98°. The cavity was washed out and packed with aseptic gauze which was gradually withdrawn within 48 hours. Recovery followed and the patient was sent to a convalescent home on the 31st.

CASE 309.—The patient, aged 29 years, was sent to me by Mr. Harburn of Buxton on Jan. 17th, 1898. She had been married for three years but had had no children and no miscarriages. She had always had poor health and had suffered in early life from anæmia. Six months after marriage she had suffered from "swelling of the ovary." In September, 1897, she had taken cold during a visit to Blackpool and apparently had had a rigor. Menstruation came on soon after and the blood lost was clotted and scanty. Diarrhœa followed some medicine taken and the tenesmus associated with this brought on severe pain which continued more or less until admission. Five weeks later another period came on with the discharge of dark clots. No further menstrual period had been seen. A month after the onset of this illness she began to lose flesh and strength. She also suffered from night sweats. For four months she had been almost entirely confined to bed. On examination on Jan. 17th, 1898, she was found to be much emaciated. The abdomen was slightly distended and there was a perfectly clear note on percussion everywhere. There was a firm, rounded elastic mass on each side of the uterus.

An operation was performed on Jan. 20th, the patient being placed in the lithotomy position. The cervix was isolated, the bladder was separated upwards, and the posterior fornix was opened. This incision opened into a cavity containing about two ounces of foul pus. The uterus was divided in the median line sagittally, but it was impossible to loosen and to draw down either side or to gain access to the masses above owing to the adhesions. The vagina was plugged with gauze. The patient was then placed in the Trendelenburg position and a median abdominal incision was made. A loop of small intestine was found to be adherent to the bladder and the left iliac fossa. In order to gain access to the uterus and tubes it was necessary to separate this, which, with its mesentery, completely concealed them. When this was done the divided sides of the uterus were drawn upwards and a large pus sac was seen on the left side. This was enucleated and with it half of the uterus was removed. It now became easier to deal with the right side. The right half and its tube also full of pus were taken away and the right ovary was shelled out of a mass of adhesions. This was caseous. The whole pelvic cavity was dried out with sterile mops and a gauze drain was drawn down into the vagina. The upper part of this drain was packed into the pelvis so as to isolate and drain the raw surfaces left and the abdomen was closed above. Transfusion and hypodermic injections of suprarenal extract were carried out on the table during the operation itself and she was again transfused after return to bed. The operation lasted one and three-quarter hours. Under these measures and repeated nutrient enemas containing brandy the patient rallied, the pulse returned at the wrist, and the next morning she was distinctly better. There had been free oozing from the vaginal drain but at 8 A.M. vomiting of mucus and greenish material commenced. At 2 P.M. there was sudden collapse treated by renewed subcutaneous transfusion but ending rapidly in death.

CASE 525.—The patient, aged 32 years, who had had three children but no miscarriages, was admitted on Feb. 12th, 1903. The birth of the last child had taken place six years previously. On Feb. 7th she was taken ill with pain in the hypogastrium. She continued her work, however, as a bag-maker until Feb. 10th when the pain became much worse and she had to go to bed. The pain was paroxysmal in character. The periods were regular—monthly. There was some premenstrual pain. There was also pain passing down the right leg. For several weeks before admission urination had been burning in character with the discharge of some pus per urethram. On March 20th, douching and glycerine tampons having been used since admission, urination became easier. Examination under chloroform showed a tense, elastic mass in the position of the left broad ligament. The uterus was retroflexed and the fundus was adherent in Douglas's pouch. It was not markedly enlarged.

For the operation, which was carried out on April 16th, the patient was placed in the Trendelenburg position and a median abdominal incision was made. The omentum was strongly adherent to the left Fallopian tube, which was swollen, convoluted, and closed at its fimbriated extremity. This end was adherent also to the sigmoid flexure. The mass was so firmly fixed in the pelvis and so swollen that it was necessary to begin by tying and dividing the uterine end of the tube and to separate outwards. After a great deal of difficulty this manœuvre succeeded and this tube was removed. The left ovary was left behind. On the right side the tube which had been partly concealed by the large mass of the left was also found to be swollen and convoluted. The ovary on this side was cystic. These were taken away. Many tough adhesions were found in Douglas's pouch and were separated. The question of fixing the fundus forward was considered but decided against. The abdomen was entirely closed. Flatus passed first on the 17th and a stool on the 19th; urination was naturally performed from the first. Complete recovery resulted.

CASE 560.—The patient, aged 33 years, had had no children or miscarriages. She was admitted on Dec. 26th, 1903. She had been in fairly good health until her marriage four years previously; since that time she had always been more or less ill. In August, 1902, she had been treated in another hospital for metritis. She had always been regular as to menstruation but had had leucorrhœa for many years. She was evidently in great pain when admitted and had a free purulent discharge from the os uteri. Examined bimanually, the uterus was found to be pushed to the right and fixed. There was an elastic fixed mass in the pouch of Douglas on the left side.

On Dec. 31st operation was proceeded with, the patient being put in the Trendelenburg position and a median abdominal incision being made. The omentum was found to be firmly adherent to the small intestine, the uterus, and the left tube near its uterine end. After this was tied off a somewhat dilated loop of small intestine was found to be firmly adherent to the back of the uterus and the commencement of the left tube, requiring the scissors to separate it. During this the tube gave way and some cheesy pus escaped. When the bowel was freed this rent was temporarily closed but with difficulty owing to the friable condition of the tissues. The bladder was then separated from the uterus and pressed down out of the way. The uterus itself was swollen and acutely inflamed. The right tube was short but closed at its fimbriated extremity and swollen. The right ovary was slightly cystic and some of the cysts contained pus. The left ovary might have formed part of the left abscess cavity. It was not seen as a distinct structure. Beginning on the right side the entire genital organs were removed—the tubes, ovary, uterus, cervix, and all—by the American lateral method. When all were gone there was left a very ragged looking Douglas's pouch, in which tags of adhesions and some raw surfaces were to be seen. At the back of the right broad ligament was an ulcerated opening leading into a cavity within it. From this some foul granulation material was scraped away and an opening being made into the vagina from this an iodoform gauze drain was drawn through. The ligatures upon the broad ligament and ovarian vessels were drawn through into the vagina and between them iodoform gauze, the upper end of which was left flush with the peritoneum. No attempt was made to close the pelvic peritoneum. The abdomen was then closed above. The operation lasted two and a half hours. Transfusion was required upon the table. This was repeated five hours later, not so much for shock as with an idea of diluting and washing away any toxins which might be present. The patient was nourished by nutrient enemata with brandy every four hours. For about two hours there was intense collapse. This was succeeded by intense restlessness and pain, for which morphine was given hypodermically. Flatus passed on the next day after an enema and fæces on the next night. There was some distension on the second day but this subsided after the passage of flatus. There was no rigidity. The gauze was removed on Jan. 3rd, 1904. The patient recovered perfectly with the exception of a small sinus at the site of a stitch abscess which healed rather slowly and she was sent to the convalescent home on Feb. 12th. In October, 1904, she returned with a small ventral hernia at the site of the previous stitch abscess but otherwise she was well.

CASE 614.—The patient, aged 27 years, had been married for four years. She had had no children but there had been five miscarriages. She was sent to the hospital by Mr. C.

Carruthers of Openshaw on July 15th, 1904. The last miscarriage (three months) had occurred five weeks before admission. Two rigors occurred afterwards during the second week. There was pain in the left side which steadily increased. Menstruation began at 14 years of age. It had been always regular before and after marriage except during pregnancies. On examination on July 15th the os was found to be normal and the uterus was of normal size but pushed forwards in the pelvis. A tense, elastic, rounded mass could be felt on the left side, extending from the uterus to the pelvic brim and lying behind the broad ligament. The right side of the pelvis was clear. The mass was not reachable from the vagina.

The patient was operated upon on July 18th. She was placed in the Trendelenburg position and a median abdominal section was made. The omentum was not adherent. On the left side the Fallopian tube and ovary were fused together, forming a large tubo-ovarian abscess. The uterus was reddened; the broad ligament on the left side was thickened and somewhat œdematous. The tube was much thickened at the uterine extremity. In the angle formed by the mass with the uterus the tip of the much elongated appendix was adherent. In Douglas's pouch there were many adhesions between the intestinal coils and the posterior uterine surface. The right tube was thickened, convoluted, and its fimbriated extremity closed. It was coiled around the ovary so that both had to be removed together. The uterine stumps of the tubes were touched with pure phenol and sewn to the stump of the infundibular ligament on either side. The shortened and reunited broad ligaments were then sewn over by fine silk. All clots being removed, the omentum was drawn down behind the uterus, the abdominal cavity was filled with saline solution, and the abdomen was closed by my modification of Milton's method. The patient recovered rapidly and went home on August 13th. In 1905 she returned with symptoms of acute menopause and was placed on ovarian extract, which she took in the form of tabloids for some months with very good result.

In all these cases when attacked from above immense assistance was found to be gained by the Trendelenburg position. If there were no adhesions of omentum and intestine to the pelvic organs these structures retreated out of the way towards the diaphragm; they were protected from chill by that part of the abdominal wall which was not divided; the intestines did not coil about and impede the hands of the operator, and room was left for the proper placing of protective sponges. If they were adherent the line of adhesion was made tense and prominent. As each portion was liberated it fell back and disclosed the deeper adhesions which in their turn were rendered salient. After experience of this position the surgeon would not willingly undertake one of these operations under conditions which rendered the assistance of this position unattainable. Later I shall refer to a case in which this position was gained in a private house with merely the help of ordinary articles of furniture and describe the means employed. Fortunately this particular class of case does not, as a rule, require immediate interference and there is time for the removal of the patient to a hospital or surgical home where proper tables giving this position are to be had. All operators are, I suppose, agreed as to these advantages but I have been astonished to find that many general practitioners are entirely unaware of their advisability—I might say their necessity—and are inclined to be indignant when they are recommended to send their patient to a surgical home if the house in which such patient resides is otherwise suitable for the performance of an operation.

(To be concluded.)

WATER DIVINING FOR A HOSPITAL.—At a meeting of the East Kerrier (Cornwall) district council held on August 5th it was decided to obtain at a fee of one guinea the services of a water diviner with a view to find a supply of water for the isolation hospital.

PROPOSED NEW RUSSIAN UNIVERSITY.—The Minister of Education, according to the *Slovo*, although sympathising with the movement for the establishment of a university in one of the north-western districts, will only consent, in view of the present disturbed condition of the country, to the opening with the aid of private subscriptions of separate science faculties in various towns in the area named most responding to the needs of the community.

THE CONTINUITY OF THE SEVERAL CAVITIES OF THE MIDDLE EAR,

WITH OBSERVATIONS ON THEIR DEVELOPMENT AND ON THE TREATMENT OF SEPTIC INFLAMMATION OF THE TYMPANIC CAVITY (SO-CALLED OTITIS MEDIA).[1]

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WITH few exceptions both anatomists and otologists regard the middle ear as synonymous with the tympanum and accordingly only a single cavity—the tympanic cavity—is included in the middle ear. We hope to be able to show, however, that the middle ear includes three cavities—viz., the cavity of the mastoid antrum, the cavity of the tympanum, and the cavity of the Eustachian tube—all of which are simply modified parts of a continuous cleft intervening between the periotic capsule and the remaining parts of the temporal bone, which from the standpoint of ontogeny may be termed the primitive middle ear. Since, however, this term may lead to confusion if it is regarded from a phylogenetic standpoint, it may be better to designate it "the middle-ear cleft," and it is to be understood that it corresponds to the modified and extended inner part of the hyo-mandibular cleft of lower forms.

The primitive middle ear in man and mammals is simply a continuous cleft intervening between the periotic capsule and the united squamo-zygomatic and tympanic elements of the temporal bone (see Figs. 1 and 2). The periotic capsule forms the petrous and mastoid portions of the temporal bone and lies to the internal and posterior aspects of the middle-ear cleft; whilst the united squamo-zygomatic and tympanic elements form the outer, the anterior, and the lower boundaries of that cleft. Occasionally, although very rarely, the tympanic element joins the periotic capsule and remains distinct from the squamo-zygomatic element, but in either case it is situated on the antero-external and inferior parts of the middle ear and helps to form the corresponding walls of that cleft. The inner and outer walls of the middle ear join below without any sharp line of demarcation and a well-defined floor of the middle ear is indistinguishable, but the corresponding walls terminate above somewhat abruptly and leave a wide interval which is roofed over by the tegmen tympani. In Fig. 1 the continuity of the middle-ear cleft is seen by the removal of the tegmen tympani; the several cavities of the middle ear are distinguishable, but they are better seen when, in addition to the removal of the roof of the middle-ear cleft, the different parts of the internal ear are mapped out (see Fig. 2). The several cavities and their continuity are still better seen in the recent condition. Fig. 3 is taken from a photograph of a horizontal section cut transversely through the head of a child at birth at the level of the middle ear. Fig. 4, a special dissection of a child at birth, made by Professor Arthur Robinson, shows us from a different standpoint the same facts as seen in Fig. 3.

The preceding preparations (Figs. 1, 2, 3, and 4) show that the middle ear is a continuous cleft and although the cleft becomes modified in parts to constitute the several cavities of the middle ear the continuity of these cavities is maintained. The cavities which collectively constitute the middle ear are from within outwards: (1) the cavity of the bony part of the Eustachian tube; (2) the cavity of the tympanum; and (3) the cavity of the mastoid antrum. These several cavities are again well seen if the united squamo-zygomatic and tympanic elements are removed and the inner wall of the middle ear exposed; this is easily effected if the temporal bone is examined before the junction of the squamo-zygomatic and petro-mastoid parts has occurred. These last-named elements become joined together about the period of birth and certainly during the early part of the first year. At birth, therefore, the two parts are easily separable and the middle ear is readily exposed.

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[1] A paper read at the summer meeting of the Otological Society of the United Kingdom held in Manchester on June 3rd, 1905.

At birth the middle-ear cleft is easily seen and on separation of the two parts which bound the cleft the chief modifications which result in the separate cavities are easily seen (see Fig. 5). At birth the middle-ear cleft is continuous, but a bulbous enlargement of the cleft which forms the tympanic cavity is interpolated between the Eustachian tube and the mastoid antrum. This bulbous enlargement is distinguishable at an earlier period and it extends both upwards and downwards. Its upward extension forms the epitympanic recess or attic. Its downward extension forms the hypotympanic recess.

In still younger preparations—e.g., about the sixth month of intra-uterine life—i.e., directly after the fusion of the centres of ossification of the periotic capsule, the different cavities of the middle ear are visible and their continuity is even more marked (see Fig. 6). In the adult the three chief cavities are, of course, distinguishable and although in consequence of a slight tilting up of the Eustachian tube and the greater extension of the tympanic cavity the continuity of these cavities is not quite so apparent, still in view of the growth and development as seen in younger forms it is obvious that the cavities are continuous and that they are simply modified parts of the primitive middle-ear cleft (Fig. 7).

As a matter of convenience in description we have more or less ignored the tympanic element and it will be sufficient to state that it usually unites with the squamo-zygomatic portion about the third month of intra-uterine life. Very exceptionally the tympanic element fails to unite with the squamo-zygomatic part. This anomaly is rarely seen, but through the kindness and courtesy of Professor Johnson Symington of Belfast we have an opportunity of exhibiting the preparations and photographs of this condition in an adult temporal bone. The squamo zygomatic part remained separate and distinct both from the tympanic plate and from the periotic capsule. It clearly demonstrates the nature of the middle ear as a cleft-like interval between the petro-mastoid and the squamo-zygomatic elements of the cranium. It is of little moment as regards the character of the middle ear whether the tympanic element is joined to one or other of the chief factors which bound the middle ear and, indeed, if the tympanic element is removed altogether the middle ear and its cavities can be easily demonstrated.

From observations on the development and character of the middle ear we think that we are justified in asserting that the middle ear includes three cavities:—(1) That of the mastoid antrum; (2) that of the tympanum; and (3) that of the Eustachian tube.

Amongst the very few authorities who do not regard the middle ear as synonymous with the tympanum and its cavity alone perhaps the most noteworthy is Politzer,[2] who states "that the middle ear, the most important part of the auditory apparatus from a pathological standpoint, is divided into: (1) the tympanic cavity; (2) the Eustachian tube; (3) the mastoid process." The mastoid process, however, is simply the outer portion or base of the periotic capsule and it lies to the inner and back part of the middle ear. It may, and does, form part of the boundary of the middle ear, but most certainly it is not an essential division of the middle ear itself. Time will not allow us to deal fully with the development of the softer tissues of the middle ear nor does it seem necessary; it may, however, be advisable to point out that the inner part of the upper and persistent portion of the *first* visceral cleft occupies the middle-ear cleft in the temporal bone previously described and that it forms the continuous mucous lining of the several cavities of the middle ear. The first visceral cleft, like all other visceral clefts, is formed by lateral outgrowths of the pharyngeal part of the foregut and corresponding in growths of the outer surface of the neck. In the case of the first visceral cleft the junction of these two parts forms the membrana tympani round about which the ring like tympanic element almost encircles the tympanic membrane. To the inner side of the tympanic membrane the first visceral cleft is lined by the hypoblast or entoderm of the primitive alimentary canal and accordingly the cavities of the middle ear are entirely lined by entodermal cells.

It is perhaps pardonable to regard the lining membrane of the mastoid antrum as being more or less of the nature of a diverticulum of the first visceral cleft, exactly as one might regard the lining membrane of the epitympanic recess or attic and the hypotympanic recess as diverticula, but even this is not borne out by a study of the earlier stages of that part of the first visceral cleft which takes part in the middle ear. The suggestion, however, that the mastoid antrum proper is a diverticulum of the tympanum is utterly and hopelessly wrong. The mastoid antrum is no more a diverticulum of the tympanic cavity than the tympanic cavity is a diverticulum of the mastoid antrum. In all probability the mastoid cells are diverticula from the mastoid antrum and it is of peculiar interest as well as of great practical importance to know that they appear at a much earlier period than is commonly supposed. Most writers affirm that the mastoid cells appear about the age of puberty. Dr. A. Buck[3] delineates well-developed air cells or pneumatic spaces in a child five years old. Sappey[4] asserted in 1867 that the air cells appear during the course of the first year and that by the second or third year they are so far developed that they form a distinctive feature. Professor Symington has lent us specimens and photographs of well-developed air cells in a nine months' fœtus and in a temporal bone of an infant one year old, and Professor Robinson writes that there are distinct but small pit-like diverticula from the mastoid antrum before birth which he takes to be the rudiments of the future air cells.

To summarise briefly the chief facts we wish to lay stress upon relating to the development of the middle ear and its cavities we desire to state:—

1. That the middle ear is simply a cleft which intervenes between the periotic capsule and the squamo-zygomatic and tympanic elements of the temporal bone. The cleft is primarily continuous and however much it may be altered in shape and modified in parts to form the cavities of the Eustachian tube, the tympanum, and the mastoid antrum, that continuity is never lost.

2. That the mastoid air cells develop at a much earlier period than is usually supposed.

With these facts in mind it occurred to us that the orthodox treatment of septic inflammatory lesions of the tympanic cavity (otitis media so-called) would require reconsideration and revision.

In a report on "The Treatment of Acute Otitis Media" presented to the French Society of Otology and Laryngology, May, 1904, by Lermoyez, Lubet-Barbon, and Moure[5] it is stated that "the tympanum and mastoid antrum communicate largely with one another ...... there are no means of isolating these chambers under normal conditions and any microbic invasion in one necessarily affects both. The result is that otitis media acuta is essentially formed by the association of an antritis and a tympanitis. From an anatomico-pathologic standpoint there is no otitis acuta without mastoiditis." As regards the treatment of otitis media the report affirms (under heading C., p. 662) "that the air douche by politzerisation cannot provoke mastoiditis because as there cannot be otitis without antritis" (and mastoiditis) "the air bulb cannot create what already exists." We are unable to accept either of these statements. Every pathologist knows quite well that localised inflammatory processes may occur even in a continuous cavity—e.g., localised peritonitis, localised pleurisy, and these examples are not limited to serous cavities alone, for we find localised inflammations in the genito-urinary, respiratory, and alimentary tracts, and one may specially mention as one of peculiar interest acute inflammation of the larynx, limited to the vocal cord of one side without any general laryngitis. We therefore venture to assert that a tympanitis does *not necessarily* involve an antritis or a mastoiditis and treatment must be influenced in view of this fact.

Inflation through the Eustachian tube goes directly to the cavity of the mastoid antrum through the tympanic cavity. In the case of a localised suppurative tympanitis, otherwise known as acute otitis media, the use of the air douche through the Eustachian tube, especially by Politzer's method, will *tend* to force septic material into the mastoid antrum and the mastoid cells. We have endeavoured to demonstrate this in the following manner. Opening up the mastoid antrum externally, as in trephining the antrum, fluid or air injected through the Eustachian tube

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[2] Text-book on the Diseases of the Ear, translated and edited by Dr. Ballin and Dr. Helter, fourth edition, p. 12.

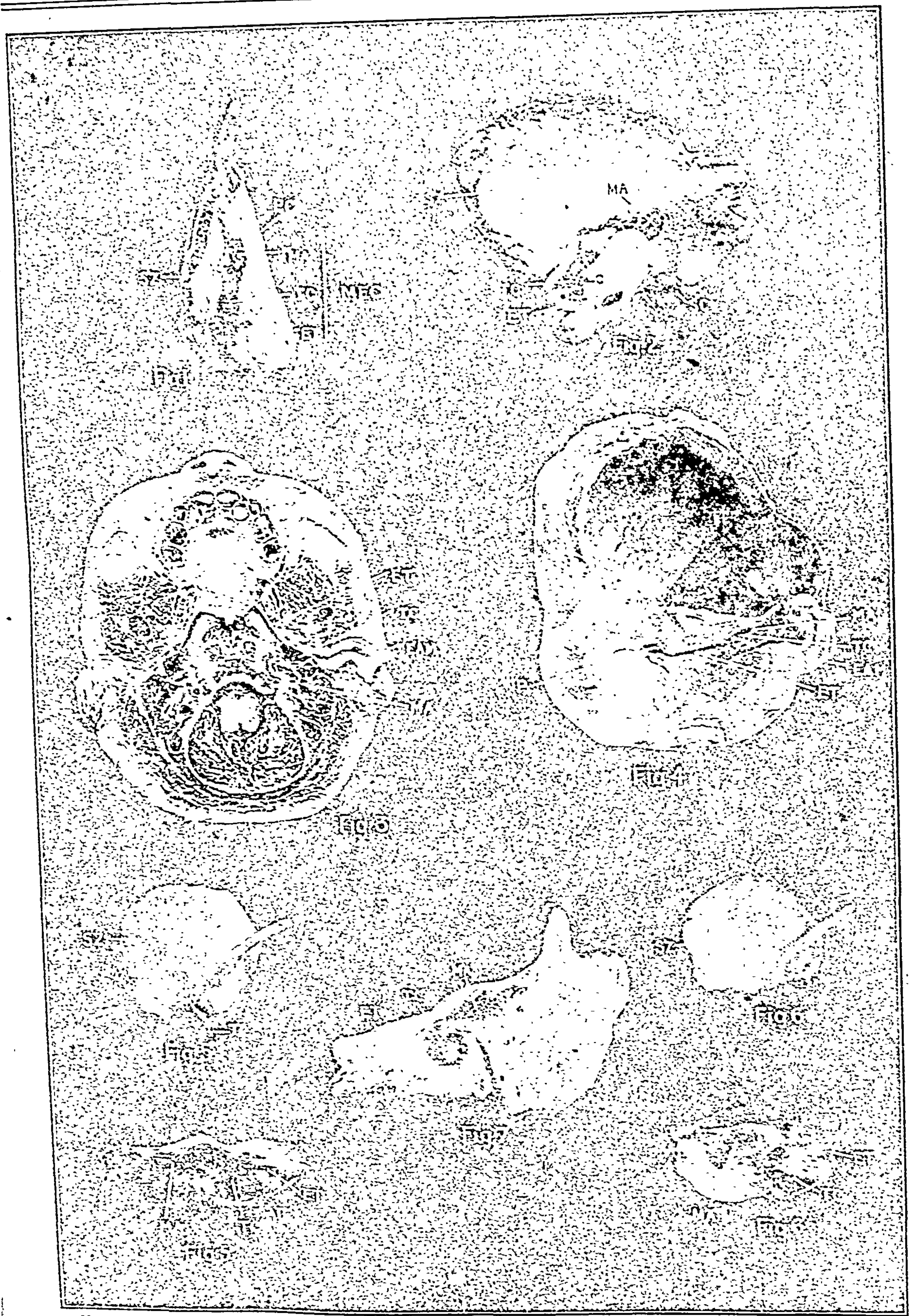
[3] ar Diseases, 1881, p. 297.

s, vol. i., p. 160.

and Laryngology, December,

[5] See A

1904, vol.



Alphabetical list of reference letters for all the figures: C, Cochlea. E A M, External auditory meatus. E T, Eustachian tube. M A, Mastoid antrum. M E C, Middle ear cleft. P, Pharynx. P C, Periotic capsule. S C, Semicircular canal. S Z, Squamo-zygomatic element of the temporal bone. T, Tympanic element of the temporal bone. T C, Tympanic cavity.

passes freely first through the cavity of the tympanum, then through the mastoid antrum, and the injection emerges through the external artificial orifice. A small perforation of the membrana tympani apparently makes no difference; the injection goes beyond the perforation and emerges, in the first place, through the external orifice of the antrum. This can be beautifully shown by impregnating the air with smoke; on careful observation through the perforated membrane the smoke can be seen passing through the tympanic cavity, onwards beyond the perforation to reach the antrum. It is not until the tympanic cavity and antrum are filled with the smoke-laden air that it emerges through the orifice of the perforated membrane.

This experiment we have done repeatedly, both by means of a membrana tympani perforated artificially and one perforated by inflammatory disease; in every case the smoke-laden air emerges, in the first place, through the external opening of the mastoid antrum and never, primarily, through the perforated membrana tympani. After repeated experiments on the same ear the smoke appears almost simultaneously through both the openings—viz., that of the perforated tympanic membrane and the external opening of the mastoid antrum. This is explained by the fact that the whole of the middle ear is filled with smoke after such repeated experiments. These experiments, we think, conclusively prove that when air or water is inflated it is first forced into the mastoid antrum irrespectively of whether the membrana tympani is perforated or not. We suggest that it would then be forced into the mastoid cells if formed and the fact that these cells are formed early means that there can be no distinction as regards treatment in the child and in the adult.

The conclusions to be derived from these experiments are open to the criticism that an external opening of the mastoid antrum is not present until operative measures have been undertaken. The presence of an external orifice will undoubtedly modify greatly the passage of injected air or fluid through the antral cavity but this modification is merely in the direction of increased quantity and increased facility of transit. The point which we seek to emphasise is that even when the external aperture is wanting there still exists a tendency for injected air or fluid to pass in the same direction. Beyond this one cannot go. Clinical experience teaches us that the disastrous results which follow the passage of septic material into the antrum are not invariable after politzerisation but we are convinced that from the anatomical arrangement of the parts they are by no means impossible.

Politzer states,[6] on the authority of Michael,[7] that "the view that in perforative inflammation of the middle ear purulent secretion is driven into the mastoid cells by the air douche has been disproved" and that Michael had "demonstrated experimentally that the secretion is always expelled into the external meatus," presumably through the perforated membrane. We think that our experiment proves that Michael's view cannot be substantiated. Our contention, therefore, is that in acute septic disease of the middle ear inflation should not be employed. If, however, for any special reason inflation be deemed advisable the Eustachian catheter should be passed and air driven into the cavum tympani with great care and gentleness. We believe that in every case of septic middle-ear disease the first and primary requirement from the anatomical, pathological, and surgical point of view is free and unimpeded drainage. To carry this principle into effect a free incision of the membrana tympani is essential and it is equally essential that the incision be kept open in its whole length by re-incision where necessary or by the actual removal of a triangular wedge of the membrana tympani itself. Furthermore, we believe that aspiration of the contents of the cavity of the middle ear by means of Siegle's speculum or Delstanche's raréfacteur is a therapeutic measure of the first importance, especially when combined with adequate drainage.

DESCRIPTION OF THE FIGURES.

We desire to express our indebtedness to Professor Symington, to Professor Robinson, and to Professor Peter Thompson (King's College, London) for their kindness in lending us many specimens and photographs.

All our figures were reproduced by photographs taken from actual specimens and of these Figs. 1, 4, and 5 were taken from specimens lent to us by Professor Thompson from the collection in the anatomical department at the Middlesex Hospital. Fig. 6 is taken from a photograph of a special dissection made by Professor Robinson. The remaining figures are taken from preparations in our own collection.

FIG. 1.—Right temporal bone of a child, aged four years, showing the "middle-ear cleft" after removal of its roof, the tegmen tympani.

FIG. 2.—Right temporal bone of a child, aged four years. The tegmen tympani has been removed and the parts of the internal ear have been mapped out. The specimen shows the middle ear and its several cavities.

FIG. 3.—Horizontal section of head of a child at birth made by Professor Thompson. The section is cut transversely through the head at the level of the middle ear and shows the continuous cavities of the Eustachian tube, the tympanum, and the mastoid antrum—i.e., the cavities included in the middle ear.

FIG. 4.—Dissection showing the middle ear and its cavities and the relation of the middle ear to the external auditory meatus in a child at birth. The dissection was made by sagittal and coronal sections, removing a wedge-like portion of the face until the middle ear cleft and the external auditory meatus were exposed. It shows from a different standpoint the points seen on Fig. 3, but owing to the oblique position of the specimen it does not show the whole of the mastoid antrum.

FIG. 5.—Right temporal bone at birth. The squamo zygomatic element has been separated and the inner wall of the middle ear is exposed; the several cavities included in that cleft are well seen.

FIG. 6.—Right temporal bone of a six months' fœtus. Similar preparation to that shown on Fig. 5 but at a much younger stage. It shows all the cavities of the middle ear but their continuity is more marked than at a later stage. Further, it shows indications of the commencing mastoid cells.

FIG. 7.—The middle ear and its cavities in the adult.

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[6] Loc. cit., p. 81.

[7] Archiv fur Otologie, vol. xi.

GENERAL STAPHYLOCOCCIC INFECTION TREATMENT BY ANTISTAPHYLOCOCCIC SERUM AND HETOL; DEATH.

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BUT for the fact that a post-mortem examination was made in this case it would have been classed as one of vegetative endocarditis. That this would have been an incorrect classification will appear from the post-mortem report. It has seemed to us that the case is an instructive one and worthy of publication, if only by reason of the negative results of the treatment followed, a treatment based on the supposition that it was a case of infective endocarditis and therefore probably of a mixed infection, as pointed out by Dr. Cyril Ogle. Though the clinical course of the case strongly supported such a diagnosis the onset was in no wise suggestive of this disease.

The patient was a man, aged 23 years, a painter, and beyond the fact that there was an account of rheumatic fever at the age of 13 years there was nothing worthy of note in his previous history. He was well until the morning of March 19th, 1904, when at 11 o'clock he had a sudden pain in the "stomach" followed by shivering. He shivered off and on until the evening when he became feverish. The next day he was feverish but had no pain and the following night he was "light-headed." On the 21st he came to the out-patient department with the above history. His temperature was then 101° F. and the spleen was easily felt below the costal margin. He was admitted. For the following notes we are indebted to Mr. J. B. Stevens, the house physician. The patient was flushed. His temperature was 102°. There were sores about both external nares and a semi-purulent discharge which had existed "for some time." The tongue was red and dry. The pharynx was normal. The abdomen was slightly distended but moved freely with respiration. The spleen was enlarged and easily felt. The liver was not enlarged and there was no local or general tenderness. The lungs were healthy and there were no adventitious sounds. The pulse was dicrotic (96). There was a soft apical systolic murmur conducted for a short distance towards the axilla; it was not suggestive of valvular disease of 13 years' standing. There was no evidence or history of any genito-urinary disease. The urine was alkaline, of specific gravity 1018, and phosphatic; there was no albumin. The hands and tongue were tremulous. On March 22nd the temperature had been up to 104° in the morning and night and on the morning of the 23rd and it had not been lower than 100·4° since admission. Tepid sponging was employed when it was above 103°. The second heart sound on the 23rd was reduplicated in the aortic and pulmonary areas. The reduplication was louder and more distinct—in fact, quite sharp—to the left of the sternum. There was no diastolic murmur. The air entry at the right apex was poor. The spleen was smaller and was now only just palpable. The general condition remained unaltered. Dr. Bushnell took blood from the left basilic vein with the usual aseptic precautions as regards syringe, needle, and skin; he also took a culture of the nasal discharge. On the 24th the second sound at the base was rumbling in character. The abdomen was more distended, the spleen was not felt, and the highest temperature reached during the past 24 hours was 104° and the lowest was 102·6°. On the 25th there was a distinct diastolic murmur in the pulmonary area conducted down the left side of the sternum; it was not heard in the aortic area. There was no increase of cardiac dulness. Much pain was present in the left side of the chest in the morning and a to-and-fro pleural rub was heard in the lower part of the left axilla and just below the heart's apex beat. On ophthalmoscopic examination the discs were seen to be normal. The pathologist reported that as regards the nasal discharge "two colonies of staphylococcus albus have grown" and as regards the blood "ten c.c. of blood from left median basilic vein sown on agar and gelatin tubes gave a growth in 48 hours of staphylococcus (Gram staining, non-capsulated), probably pyogenes albus; the appearance of short chains in scanty numbers suggests possibility of mixed infection; if plating had been practicable streptococci might have been isolated; no pneumo- or gono-cocci isolated." On the receipt of this report, and considering the possibility of a mixed infection, ten cubic centimetres of polyvalent antistreptococcic serum were given at 4 P.M. A differential blood count showed 80 per cent. of polymorphonuclears. On the 26th the diastolic murmur was louder and there was also a systolic murmur at the base. There was a trace of albumin in the urine which was now acid. The temperature had been no higher than 103·6° and as low as 101·2° during the 24 hours. Another ten cubic centimetres of antistreptococcic serum were given. On the 27th the pleural rub was more extensive. The pathologist reported: "Leucocyte count, 9500—85·6 per cent. polymorphs." In the afternoon the patient had a rigor and the temperature rose to 104°; ten cubic centimetres of antistaphylococcic serum were given. On the 28th the abdomen was more distended and considerable subsultus was present. The temperature was higher in the evening. Ten cubic centimetres of antistaphylococcic serum were given and one-third of a grain of hetol intravenously with the object of establishing a more marked leucocytosis. On the night of the 28th the patient was wildly delirious and in the early morning of the 29th the temperature dropped to 97° and he slept. In the morning his mental condition was quite clear and he said that he felt better. The diastolic murmur was best heard at the aortic cartilage. Ten cubic centimetres of antistaphylococcic serum were given at 6 P.M., when the temperature was up to 103° again, this being followed by ten cubic centimetres of normal horse serum at 8 30 P.M. The temperature at 10 P.M. was 104·4.° The pathologist reported: "There are 14,700 leucocytes per c.mm. blood." On the 30th percussion resonance over both bases was impaired; there was no true bronchial breathing. The patient was coughing up a good deal of foul, bloody, frothy sputum. Ten cubic centimetres of normal horse serum were repeated and one grain of hetol was given intravenously at 3.30 P.M. The leucocyte count five hours later was 14,200. On the 31st the respiratory murmur was diminished and the voice sounds were distant over the left lower lobe; there was also impaired percussion resonance. The temperature was gradually declining; the general tremor was increasing, however. The tongue was dry and the blood-stained frothy expectoration was troublesome to the patient. Normal horse serum and hetol were again given. On April 1st, the asthenic condition gradually increased and he died at 10 A.M. About an hour after death, the heart having been seared, a sterilised needle was inserted into the right ventricle and four broth tubes were inoculated with the blood withdrawn; all these tubes developed pure staphylococcus. The pathologist reports: "Films and cultures of sputum show staphylococcus and organism, probably B. coli communis. Spleen (culture in broth made with usual aseptic precautions, post mortem) shows bacillus, probably coli communis, and staphylococcus. Urethra (culture in broth, post mortem) discharge shows bacillus, probably coli communis. Blood (ante mortem) culture on gelatin developed, and was pure staphylococcus, liquefying gelatin freely."

At the necropsy 48 hours after death numerous septic infarcts were found in both lungs with broncho-pneumonia; septic infarcts were also found in both kidneys. As regards the heart there was recent and extremely slight endocarditis of the pulmonary cusps. There were no definite vegetations, merely a roughening presenting a hirsute appearance; there was no endocardial injection. A firm fibrous nodule was found attached to one of the chordæ tendineæ of the tricuspid valve. Both mitral and aortic valves were healthy. The spleen was two or three times the normal size, soft and friable; it contained no infarcts. The sphenoidal and ethmoidal cells were opened and found to be healthy.

Remarks by Dr. MAYNARD.—The chief feature of note in the treatment of the case was the absolute failure of the various sera to bring about any improvement. The infection would appear to have been one of staphylococcus albus only and possibly the failure was due to the fact that there is no antiserum made for this organism; on the other hand, it may be that a sufficiency of antistaphylococcic serum was not given and that it was not given early enough in the disease. After perusing the very valuable lectures of Mr. L. S. Dudgeon and Mr. P. W. G. Sargent, recently published,[1] one would suppose that the white staphylococcus was almost a benign organism, at all events as regards the peritoneum, and possibly this is so, more particularly as compared with other peritoneal pyogenic organisms; that it may, however, exist in a very highly virulent form also is shown by this case in which it was cultivated both ante and post mortem from the blood and was apparently *per se* the cause of death. Normal horse serum was used solely on account of its reported efficacy in a case of septicæmia mentioned to us and in lieu of any better possible remedy. The point of entry of infection was probably the nose, as, though a most thorough search for other entries was made, none was found.

Remarks by Dr. BUSHNELL.—There have been several fatal cases of septicæmia at the Sussex County Hospital due to infection by staphylo-, strepto-, and pneumo-coccus in which the path of entry of the micro-organism could not be precisely demonstrated; in these the serous sacs were more especially affected, also the meninges, and in the case now reported the lungs contained numerous foci of suppuration. In this case the presence of the staphylococcus in the blood ante and post mortem, in the nasal discharge and in the sputum during life, and in the spleen, lungs, and kidneys after death, is evidence of the infection being staphylococcic; further, there were no pneumo- or gono-cocci in the blood cultures, nor streptococci in plate cultures. This with the absence of bacilli and the presence of staphylococci in numerous sections of the viscera prepared by Weigert, Gram, and Löffler's methylene blue methods show the infection to be staphylococcal. There is strong probability, too, that the respiratory tract was the path of entry. The lack of success in the treatment by antiserum may lie in the fact pointed out by Pröscher,[2] that variations in races of staphylococci occur; thus it is important that the strain from which the serum is prepared should be identical with that causing the suppuration. The use of a vaccine of sterilised staphylococcal cultures, even if it were administered at the periods recommended by Dr. A. E. Wright[3] and after estimating the phagocytic power of the blood by Leishman's method,[4] would not be likely to prove of any therapeutic service in such an acute case as this. The absence of leucocytosis, in the presence of such grave infection and after the exhibition of hetol, would be associated with diminished phagocytic and bactericidal protective fluids in the blood. Success in treatment of such conditions appears to be in the direction of stimulating or supplementing such bodies, whether "immune body" or "alexin," and phagocytosis, by direct or indirect measures. The necessity for the prevention of such illnesses by means of general hygienic measures and special precautions against infection is not apparently yet recognised by the public.

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[1] THE LANCET, Feb. 25th, 1905, p. 473.

[2] Deutsche Medicinische Wochenschrift, 1903, No. 2; Hewlett, Serum Therapy, p. 187.

[3] THE LANCET, May 9th, 1903, p. 1299.

[4] Brit. Med. Jour., 1902, vol. i., p. 73.

ELEMENTARY STATE SCHOOLS AND THE SPREAD OF CONTAGIOUS DISEASES OF THE SKIN.[1]

BY P. S. ABRAHAM, M.D. DUB., F.R.C.S. IREL.,
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I DESIRE again to call attention to a matter which is *manifestly one of great importance to the* public as well as to the medical practitioner. In a joint paper by Dr. Alfred Eddowes and myself read in the Section of Preventive Medicine of the congress of this institute which was held at King's College, London, in 1894, it was pointed out that "now that school attendance is compulsory and that the clean and well-cared-for children of respectable families living in poor neighbourhoods often have to associate with those of the dirtiest, most careless, and most diseased classes of the community, it seems to us a moral duty that all reasonable precautions be insisted on (and carried out) by the authorities in order to minimise the risk of infection from the diseased to the healthy. ...... Numerous instances have come to our knowledge in which not only has a skin disease been contracted in a board school but it has been carried home by the child and passed on to the previously healthy brothers and sisters."

A continued and very extensive experience of the treatment of diseases of the skin at two large London hospitals leads me thoroughly to endorse those remarks made 11 years ago; and I have no hesitation in now saying that we must regard the elementary State schools in London as largely responsible for the spread of such contagious diseases as ringworm, pediculosis, scabies, impetigo, &c., and of many perhaps more grave affections which may be their sequelæ, not only directly among the children of the poorer classes but indirectly among those of the well-to-do. The facts appear to be so obvious that it is astonishing that the authorities have not sufficiently realised their responsibilities in this connexion and have not adopted more efficient measures for preventing the contamination of healthy children. I do not deny that the late School Board and the present education department of the London County Council have given, or are now giving, some practical attention to the subject, but I maintain that the methods and precautions hitherto adopted by those authorities have been, to say the least, very defective and inadequate. It seems to me that one of their greatest mistakes is their attempt to shift the responsibility upon the wrong shoulders; they have not themselves had the children properly inspected, but they have put the onus of investigating such cases upon others, the result being that numbers of diseased children are still attending the schools and infecting other children.

Under the present system if a poor child acquires ringworm, for instance, he or she may attend a school for a considerable period without anyone being any the wiser and be all the time quietly disseminating the affection. When it is a typical case and something wrong is at last observed by the teacher the child is sent home and the parents are told that they must get an official form filled up by a medical man. An instance in illustration of this has just occurred at Blackfriars. A mother brought two children with well advanced ringworm and was asked how long they had been affected. She replied that "she observed their heads 'scurfy' about two months ago and then got some ointment for them from a chemist." Had they been attending school? "Yes, until this morning, when they were sent home by the teacher." She did not know until that day that they had ringworm. It will not be surprising if other cases crop up from the same school. If the parents are very poor they may not be able to afford the fees of a general practitioner and their usual course is to bring the child to a hospital—often with a cool message from the elementary school teacher or inspector that the hospital medical officer must fill up the official school form. It has been my invariable practice to decline to do anything of the sort, and I venture to think that if all medical men in my position adopted the same course the school authorities would have been long before this brought to their senses and have ceased from attempting to "sponge" upon the honorary officers of a hospital and from trying to get the latter to do work which is really on behalf of the school and, not for the individual benefit of the poor little patient. I do not wish to be misunderstood: if a child is brought to the hospital really ill or suffering from a complaint which would be made worse by going to school—i.e., if attendance at school would be detrimental to the child's health—I readily give a certificate (our own hospital one) to that effect. But as regards ringworm and some of the other cases to which I have alluded, it is for the sake of the school—in view of the risk of infecting other children—that the child should not attend. Children so affected may be, and usually are, perfectly well in every other respect; school is good for them; and the only reason why they should not attend is that they may, and probably will, communicate the disease to others.

I think it will be generally agreed that it should be the bounden duty of the education department to protect healthy and clean children from being infected at school with the above-mentioned loathsome diseases. I may even go so far as to say that should it be proved that a child has contracted such a disease at the school the necessary treatment for cure as well as the preliminary investigation ought to be at the expense of the department. I have often wondered indeed that some indignant and justly aggrieved parent has not brought an action at law and claimed damages for the injury done by the introduction of such a disease as ringworm into his house through being forced to send his child to a school in which there are cases of the kind.

What is the remedy? Obviously the most important and essential prophylactic measure would be the frequent systematic and periodical examination of all children attending the Government schools by competent medical officers especially engaged for that purpose by the department. This was recommended many years ago but was evidently not thought worth adopting by the late School Board probably on the ground of expense; the institution of continuation schools and the other developments—ornamental or otherwise—of Mr. Forster's original Act were no doubt considered of greater importance and more worthy of the ratepayer's money. I understand that the London County Council is actually going at last to increase the at present ridiculously inadequate medical staff of its education department and to employ a number of medical men to look more closely after medical matters in the London schools—it is to be hoped for the benefit of the children who have to attend the State schools. This, at any rate, is a satisfactory although tardy move in the right direction. That august body, however, still seems to think that it has the right to demand the gratuitous services of hospital medical officers, as is evidenced by a letter dated July 13th, 1905, now before me, addressed to the secretary of one of the hospitals to which I am attached.

It seems to me high time that medical men should make a stand against the system hitherto in vogue in the department and that the public should know the risks their children are being forced to incur through the lack of adequate medical supervision of the elementary schools.

Henrietta street, W.

THE STAINING REACTIONS OF THE SPIROCHÆTÆ FOUND IN SYPHILITIC LESIONS.

BY LEONARD S. DUDGEON, M.R.C.P. LOND.,
BACTERIOLOGIST TO ST. THOMAS'S HOSPITAL AND JOINT LECTURER O GENERAL PATHOLOGY IN THE MEDICAL SCHOOL.

(*Preliminary Note.*)

Dr. Schaudinn and Dr. Hoffmann have pointed out the extreme difficulty which they have experienced in staining the spirochætes which they have recently shown to be present in various syphilitic lesions. These authorities have, therefore, recommended a special stain which they have found to be the only one that has yielded positive results. It is for this reason that I wish to bring forward the results which I have recently obtained by employing a slight modification in the strength and method of using Leishman's stain.

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[1] A paper read at the London Congress of the Royal Institute of Public Health on July 20th, 1905.

A patient suffering from syphilis recently attended the out-patient department of St. Thomas's Hospital. I succeeded in obtaining a large quantity of fluid from a condyloma situated in the region of the anus by using severe local pressure. A number of cover-slip preparations of the exudate were made and these were stained as follows. I used a sample of Leishman's stain, such as I employ for staining bacteria. 1. A few drops of a 1 per cent. solution of Leishman's powder (Grübler) in absolute methylic alcohol (Kahlbaum's) were poured on to the surface of the film preparation, just sufficient to cover completely the whole of the cover-slip. This was allowed to fix the specimen and to stain it for 30 minutes. 2. Double the volume of distilled water as to stain was now run on to the surface of the cover-slip and the stain and water were carefully mixed. The staining was further continued for five minutes. 3. The diluted stain was poured off and distilled water was run on the cover slip and allowed to remain on for one minute. 4. Surplus stain and any precipitate were now removed by squirting some distilled water on to the film from a pipette. 5. The film was then dried with cigarette paper and mounted in Canada balsam.

I obtained excellent preparations of the organism by means of the above process and was able to observe a large number of spirochætæ in most of the film preparations; the organisms could be recognised quite distinctly, however, by staining according to Leishman's own method. Its morphological characteristics corresponded to the type described by Dr. Schaudinn and Dr. Hoffmann as the spirochæta pallida. It was found to be extremely delicate, but perhaps the most noticeable point concerning this organism is the typical corkscrew arrangement; in some cases from 10 to 15 spiral turns were seen. Each spiral was also found to be defined very sharply. Some spirochætæ, however, were thicker, showed polar staining with Leishman's stain, and did not have the typical corkscrew characters of the spirochæta pallida. This type probably belongs to that described by the above-mentioned authorities as the spirochæta refringens.

It is quite possible that with a little trouble still better results can be obtained with Leishman's stain, which has already been shown to be one of the most valuable stains in use at the present day.

Note.—Since the above account was written further results have been obtained with film preparations of the exudate from "mucous patches" in a case of secondary syphilis, under the care of Mr. P. W. G. Sargent.

St. Thomas's Hospital, S.E.

TWO CASES OF ADDISON'S DISEASE AND THE EFFECT OF THE ADMINISTRATION OF SUPRARENAL EXTRACT.[1]

BY A. GORDON GULLAN, M.D. LOND., M.R.C.P. LOND., F.R.C.S. ENG.,

LECTURER ON CLINICAL MEDICINE, UNIVERSITY OF LIVERPOOL; PHYSICIAN TO THE LIVERPOOL STANLEY HOSPITAL.

As the effect of the administration of suprarenal extract in the treatment of Addison's disease is still *sub judice* I think that the results obtained by the administration of this drug in two cases of that disease which have recently been under my care will be of interest.

CASE 1.—The patient, aged 18 years, was admitted into the Stanley Hospital on Sept. 7th, 1903, complaining of pains in the epigastrium, vomiting, and weakness. His pulse was extremely small and his face was sallow. There was no history of phthisis or tubercle in his family. The lad stated that he had always been healthy up to the time of the present illness, which began, according to him, two months prior to admission, when he was troubled with severe aching pains in the epigastrium following food but these were relieved by vomiting after each meal. He said that he had lost flesh during his illness and had become very weak; he also noticed that "his skin was yellow."

On admission the patient was found to be a thin but well-developed youth; his face and hands were cold and livid and the temperature was subnormal at from 97° to 98° F. There was a large amount of pigmentation of the skin over the body, but it was especially marked in certain regions—namely, *in the exposed parts*, the neck as far as the collar where it ended abruptly, and the back of the forearms where it gradually shaded off; *in the normal sites* there was deep pigmentation of the axillæ, the nipples, the penis, and the scrotum; and *in the parts exposed to pressure*, the lumbar region of the back, especially the lumbar spines, about the knees, the soles of the feet, and also in two scars on the back of the left forearm. The pigmentation was of a yellowish-brown or copper tint, shading in some regions to a dark brown and reaching a maximum in some small black pigmented spots scattered about the chin, the lips, the back, and the ankles. There was also some copper-coloured mottling on the mucous membrane of the cheeks and gums. There was tenderness in the epigastrium and left hypochondrium on deep pressure, and a distinctly tender spot was found over the eleventh and twelfth ribs posteriorly on each side (three inches from the spine on the right and two and a half inches on the left). The pulse was 80 per minute, extremely small and of very low tension but regular. At no time could a sphygmographic tracing be obtained. The cardiac impulse was absent. There was no superficial dulness and the deep heart dulness only extended three inches to the left. The heart sounds were clear at all areas but distant. Liver dulness was four inches in the nipple line. Splenic dulness was normal. The patient had no cough and the respirations were 20 per minute, otherwise normal. The urine was acid, scanty, high-coloured, contained urates on standing, and a trace of albumin sometimes. The quantity of urea was relatively greatly increased. The muscular system was flabby but there was not much wasting.

Our first care was to stop the persistent vomiting, so the patient was placed on a very light diet and ten grains of bismuth carbonate were given just before food, with the desired effect for a time. On Sept. 14th extract of suprarenal in five-grain doses was given thrice daily and this was increased to ten grains a few days later. On Oct. 2nd the suprarenal extract was increased to 15 grains and the patient had improved. He had no pain and had not been sick for a week and his pulse was a little stronger. This improvement was maintained until the 19th but he was steadily losing weight, about two pounds per week, and the pigmentation in the mouth was more marked. On that date the vomiting returned with all its severity; he complained of acute pain in the abdomen and in both lumbar regions, pressure under the last rib on each side causing him to jump and cry out. The pain was so intense on the 22nd that he lay curled up in bed groaning; he was very sick and all medicines had to be stopped; hypodermic injections of morphine were given to relieve the pain, and some brandy. The muscular weakness was most pronounced at this time and the deep cardiac dulness was found to have further diminished. The patient gradually became semi-conscious and died on Oct. 25th.

The post-mortem examination was made on the same day and the report is briefly as follows. The body was extremely emaciated, there being marked pigmentation of the skin as noted during life. The lungs were healthy and there was no evidence of tubercle recent or old. The heart was small, the muscle substance being atrophied, pale, and friable; the valves were healthy. The stomach was large and somewhat congested; the bowels were healthy. There was considerable matting of chronic inflammatory tissue in front of the aorta round the cœliac axis and affecting the cœliac plexus, the semilunar ganglia, the terminations of the greater and lesser splanchnic nerves, and extending outward to the suprarenal bodies. Both suprarenal glands were very much enlarged, nodular on the surface, and hard; on section both glands showed numerous caseous and fibrous nodules varying in size from five to 15 millimetres in diameter.

CASE 2.—The patient was a married woman, aged 32 years. It was ascertained that one brother had died from pulmonary tuberculosis. The patient had had eight children, six of whom were alive. With regard to the other two children, one had died from meningitis and the other from diarrhœa. The present illness began two years previously when she was, she stated, getting thin, low spirited, and continually fainting; she also had had great pain in both lumbar regions, particularly in the left. As she had a severe attack of vomiting in January, 1904, she applied to the Stanley Hospital and was admitted. She was then noticed to have slight bronzing of the lower half of the face and neck. Her pulse was very small and easily compressible, and she had marked tenderness over both suprarenal bodies. There was general lassitude and her temperature was frequently subnormal, occasionally falling to 97° F. The tongue was coated, the bowels were rather constipated, and vomiting was troublesome. She was placed on light diet and calcium chloride and tincture of nux vomica were prescribed. After three weeks she became an out-patient and has remained so ever since, having been re-admitted, however, on two occasions (i.e., in March and August, 1904). Up to the latter date her condition became worse, the pigmentation was more marked on the face and neck, and also appeared on the backs of the forearms and on the hard palate; she was also more subject to syncopal attacks. On August 5th she was ordered five grains of suprarenal extract four times a day, and this was increased to ten grains and then to 20 grains thrice daily. This treatment was continued up to Dec. 9th with considerable benefit; she lost her lassitude to a great extent, had no fainting attack, her pulse was stronger, she vomited much less frequently, and the tenderness over the suprarenals was not so marked. She also gained in weight. On Dec. 9th she was confined and had a normal and easy labour, the child being healthy. She was then absent from the out-patient department for three weeks and consequently the suprarenal extract was omitted for that time and it is an interesting fact that the symptoms from which she had been free—i.e., fainting, vomiting, and general lassitude—all gradually returned. On Jan. 2nd, 1905, the suprarenal extract was recommenced and the above symptoms steadily abated. She has been taking from 20 to 30 grains of the extract regularly up to the present time with great benefit. On another occasion, however, in April, she had a mild attack of bronchitis when it was omitted for a short period whilst some expectorant treatment was given and then her former symptoms returned and the pigmentation increased. These diminished when she took the extract again. She is now in fair health, has gained in weight, and only on occasions is troubled by vomiting or a syncopal attack, but we notice that if she omits the suprarenal extract for only a few days through not coming to the hospital her pulse is always much weaker and her symptoms aggravated. This case, in the benefit she has derived from suprarenal extract given by the mouth, agrees with the two cases reported by Dr. G. Oliver[2] (though the bronzing has not improved to the extent which appears to have been apparent in his second case), and also with that recorded by Dr. H. D. Rolleston[3] in his admirable Goulstonian lectures. It also illustrates how the treatment must be continued, as laid down by Dr. Rolleston[4] and also that the suprarenal extract must be given in large doses. Dr. E. Lloyd Jones records a case of Addison's disease[5] which was cured by taking 12 tabloids per diem—my patient is taking 18 tabloids per diem.

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[1] Notes on these cases were read by Dr. Gullan at the Liverpool Medical Institution on Feb. 16th, 1905, when he also showed the second patient.

The special points of interest in these cases are the following: 1. The severity and rapid progress of the disease in Case 1, though the lesion was that of chronic tuberculosis of the suprarenal bodies plus secondary inflammation of the neighbouring sympathetic, and the little benefit derived from the extract. 2. The chronicity of the symptoms in Case 2 and the considerable benefit derived from the suprarenal extract, so that she even easily stood the strain of pregnancy and parturition. These cases certainly lead me to support Dr. Byrom Bramwell's view[6] that those cases which improve on this form of treatment may be due to adrenal inadequacy alone and the remainder are due to an additional lesion (I should like to word it a secondary lesion) of the neighbouring sympathetic. This was the condition in Case 1. But I cannot agree with Dr. Bramwell's suggestion that all those cases which improve have a non-tuberculous lesion (though some of them may have, as the one recorded by him), for it seems quite logical that in the early stage of Addison's disease when of an undoubtedly tuberculous nature (and personally I have not yet seen a case post mortem in which the condition was not of a chronic tuberculous nature) the disorder starts in the adrenal body and may lead to inadequacy of that body before the sympathetic plexuses are involved. At such a stage I believe treatment by suprarenal extract would be most beneficial and if combined with good wholesome diet, fresh air, &c., the disease may be checked or cured; but then if there remains as a result sclerosis of the adrenal bodies the suprarenal extract would have to be continued to supply the internal secretion of the organ probably for the rest of the patient's life. Hence the great importance of early diagnosis and an early trial of this form of treatment in Addison's disease.

Liverpool.

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

> Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Prœmium.

MARGATE COTTAGE HOSPITAL.

A CASE OF RUPTURED URETHRA AND EXTRAVASATION OF URINE OF FOUR DAYS' STANDING.

(Under the care of Mr. W. GREENWOOD SUTCLIFFE.)

THE accident occurred during a storm in the Bay of Biscay on March 8th of this year; the patient, a Swedish sailor, 35 years of age, was thrown violently, his perineum struck a projecting beam, and he was picked up practically unconscious. The steamer, a homeward-bound eastern trader, carried no surgeon, and beyond getting the man to his bunk the captain could do little for him. A large swelling rapidly developed in the perineum, the scrotum, and the cellular tissue of the penis; there was inability to pass urine and the condition of the patient on his arrival at Margate on March 12th, four days after the injury, was one of extreme exhaustion and collapse. Several attempts at landing him had been made during the voyage up Channel but the weather was too severe to permit it and even here the transfer of the patient was only effected by means of the lifeboat. Dr. C J. Harnett, who had previously reached the steamer in a smaller boat, superintended the removal and on admission to the hospital the case came under the care of Mr. Sutcliffe. The bladder was found to be distended above the umbilicus, the skin over the left side of the perineum and the inner side of the left thigh was black and gangrenous, and the scrotum and penis were greatly swollen and black but firm and not crackling to the touch. The right side of the perineum was only gangrenous for about an inch outwards to the thigh and the skin of the right thigh was unaffected. The skin over the left thigh outside the area of the gangrenous patch, itself at least six inches square, was of a dusky red hue and the whole thigh down to the knee was tense and swollen. The urethra had obviously been ruptured in the membranous portion as no extravasation had spread forwards into the scrotal tissues or on to the abdomen; the posterior layer of the triangular ligament had probably itself been torn, as most of the urine had found a way into the left ischio-rectal fossa near the rectum and anus and into the subcutaneous tissue of the left thigh. The patient was anæsthetised and put in the lithotomy position; the perineum was incised freely in the middle line and large quantities of clot and infiltrated débris were cleared away; a director was then passed through the rent in the urethra into the bladder and some 50 or more ounces of clear urine were evacuated. Free incisions were then made over the infiltrated area, the gangrenous skin over the inner side of the thigh was cut away, and a large rubber catheter was tied in the bladder through the perineal wound.

Recovery began at once, the patient, a man of fine physique, rapidly passing out of danger. The separation of sloughs was assisted by soaking the patient in a hot bath for several hours daily and the catheter was retained in the perineum for a fortnight before an attempt was made to re-establish the normal urethra. Then a large steel sound was easily passed down the urethra into the bladder and the catheter was removed from the rapidly contracting perineal aperture. Control over the bladder being soon re-established and the patency of the urethral channel secured by the passage of sounds at intervals of a few days, the patient soon began to pass his urine in increasing quantities through the natural route. The perineal opening gradually contracted to a pin-point aperture and the denuded surfaces soon covered themselves with granulation tissue and healed with amazing quickness. The patient left the hospital soundly healed on June 3rd, a No. 12 steel sound passing easily into the bladder the day before his departure. Beyond a single rigor after the first passage of the sound he had no bad symptoms from first to last and with that exception his temperature was below 100°F. throughout.

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[2] Pulse Gauging, p. 89; Brit. Med. Jour., 1895, vol. ii., p. 654.

[3] Brit. Med. Jour., 1895, vol. i., p. 748.

[4] Allbutt's System of Medicine, vol. iv., p. 556.

[5] Brit. Med. Jour., 1895, vol. ii., p. 483.

[6] Brit. Med. Jour., 1897, vol. i., p. 71.

Remarks by Mr. SUTCLIFFE.—The case is interesting as showing remarkable recuperative powers after a severe injury unavoidably left untreated for several days and as affording a contrast to those instances of extravasation due to stricture or peri-urethral abscess when the urine is septic; in such cases recovery can hardly be expected after 48 hours' soaking of the subcutaneous tissues in ammoniacal urine. In two cases of this injury which have come under my care within a few hours of the accidents I have passed a catheter through the rent at the first operation, but here with a large sloughing mass of cellular tissue the only course was to drain directly through the perineum, and though the urine itself had not spread upwards both the scrotum and penis were greatly swollen with infiltrated blood; indeed, the discolouration had hardly disappeared from the skin of the penis when the patient was discharged.

Reviews and Notices of Books.

A System of Clinical Medicine, dealing with the Diagnosis, Prognosis, and Treatment of Disease, for Students and Practitioners. By THOMAS D. SAVILL, M.D. Lond., Physician to the West-End Hospital for Diseases of the Nervous System; Physician to St. John's Hospital for Diseases of the Skin, London; formerly Medical Superintendent of the Paddington Infirmary. Vol. II.: Certain General Disorders; Diseases of the Skin and the Nervous System. London: J. and A. Churchill. 1905. Pp. 444. Price 8s. 6d.

IN a review of the first volume of this work, which appeared in THE LANCET of April 25th, 1903, p. 1174, we expressed the high opinion we had formed of the manner in which Dr. Savill had carried out the task which he had set himself. A perusal of the recent volume assures us that on the whole the same high standard has been maintained which was manifest in its predecessor. We then explained that Dr. Savill had approached the subject of clinical medicine from the standpoint of symptomatolgy. This method of procedure is well illustrated by the heading of the first chapter in the volume now under consideration, which runs, "General Debility, Pallor, and Emaciation." In this group might naturally be placed a very large number of varying conditions. Dr. Savill explains, however, that he is merely concerned with those diseases in which a feeling of general weakness and lassitude is the only obvious, or at least the most prominent, symptom for which the patient seeks relief. We cannot altogether support Dr. Savill in the classification which he has adopted. For the practitioner this chapter may be a useful one but to the student it would prove confusing. Many conditions are mentioned the onset of which may be merely characterised by general debility or, in addition, either by anæmia or emaciation, or both, such as tuberculosis, diseases of the pancreas, chronic visceral disease, functional nervous diseases, nephritis, dyspepsia, and obscure abdominal or pulmonary disease. For a description of these conditions the reader is referred to other parts of the work. We think, however, that for the sake of clearness any reference to them in this chapter should have been omitted. Good accounts are given of chlorosis, pernicious anæmia, syphilis, plumbism, leukæmia, lymphadenoma, hæmophilia, malignant diseases, marasmus in children, senile decay, myxœdema, and Addison's disease, conditions which, although differing in pathology, may rightly all be considered under the classification which is here adopted.

The next chapter has for its title "The Extremities." Dr. Savill's method of approaching his subject from the standpoint of symptomatology is particularly applicable to the various disorders which may attack the extremities (nervous affections excluded). The diagnosis of diseases of the joints is frequently a matter of difficulty but by proceeding according to the directions laid down considerable assistance will be obtained in arriving at a conclusion. The chapter on diseases of the skin is an excellent one and contains a large amount of information clearly and concisely given. The various points for investigation are carefully described and we can recommend a close study of Dr. Savill's remarks to those students who are attending the departments for diseases of the skin at the general or special hospitals.

An account of diseases of the nervous system occupies a large portion of the volume. A few preliminary observations are made on the anatomy and physiology of the central nervous system and we agree with Dr. Savill when he says that Professor Waldeyer's neuron scheme, although not regarded by everyone as the most scientific, nevertheless for clinical purposes is the most lucid and practical yet introduced. The clinical investigation which is required in cases of disease of the nervous system is well discussed and it is shown that if every point be taken in its regular order confusion is not likely to arise. The descriptions of the various diseases are good but we prefer the classification usually adopted in text-books to the one which necessarily follows when symptomatology is taken as the basis. The volume ends with an epitome of clinical bacteriology and the examination of pathological fluids. Numerous illustrations are scattered through the work and some of the diagrams aid greatly in explaining the text.

We have found some faults with Dr. Savill's classification of diseases which is founded on symptoms. On the whole, however, we are of opinion that he has succeeded in producing a very useful manual. We do not think that it will replace the other text-books now commonly used by students but as a companion to them it will be found most valuable. By the practitioner it will be found even of more service, for it will doubtless aid him when he is in attendance on a case of which the diagnosis is obscure and in which the physical signs are not well marked.

Clinical Studies: A Quarterly Journal of Clinical Medicine. By BYROM BRAMWELL, M.D. Edin. Vols I. and II. for the years 1903 and 1904. Illustrated. Edinburgh: R. and R. Clark, Limited. Pp. 384 and 392.

THE two books which form the subject of the present review represent the completed volumes for the years 1903 and 1904 of Dr. Byrom Bramwell's *Quarterly Journal of Clinical Medicine.* Certain of the clinical studies which appear in these volumes have, we believe, been published completely or in part in other periodicals or journals and some of them are already well known to a large number of medical readers. These studies, however, do not belong to the well-known series of Wednesday cliniques, the reports of which form the backbone of the author's quarterly journal. To say the least, however, from the point of view of interest these lectures greatly enhance the value of these two volumes.

Dr. Byrom Bramwell has a delightfully easy style of writing and a direct and forcible manner of appealing both to his audience and to his readers. As a clinical teacher we are disposed to believe that at the present time he has few rivals in this country and certainly no teacher of clinical medicine publishes lectures which make better reading. There is practically no class of medical reader to whom these clinical studies can be otherwise than instructive, whether he be student, practitioner, or teacher. But it is to the practitioner, we believe, that these lectures will chiefly appeal, since they afford him an opportunity of recalling at his leisure memories of that irresponsible assimilation of medical knowledge which distinguished his early educational career as a medical student. For the benefit of those who are unfamiliar with the manner in which Dr. Byrom Bramwell manages his now famous Wednesday cliniques it may be here stated that they are of the nature of demonstrations illustrated by cases, taken down in shorthand and subsequently edited for publication. One of the great features of interest is that the students' answers are reported as well as the teacher's questions. Inasmuch as most of us learn more by our own mistakes and the mistakes of others than by any other means the often incorrect answers of the students impress on our minds the lesson which it is intended to convey. So skilfully are these reports edited that in reading them, in spite of detachment of time and place, we cannot help feeling the atmosphere of the hospital just as we remember it in the days of our youth.

Many of the studies recorded in these volumes, quite apart from their educational value, are weighty contributions to medical literature. For instance, the author's clinical lecture on Aphasia and Will-making has in its medico-legal aspects already become an authoritative document and it very clearly defines the will-making capacities of patients affected with different forms and varieties of aphasia and it describes very lucidly the manner in which wills should be made in the circumstances of defect of speech and the tests to which patients should be submitted in order to ascertain whether they are in a fit mental condition for the testamentary disposal of their properties. Another lecture on Syphilis and Life Assurance which was delivered before the Edinburgh Medico-Chirurgical Society in 1902 must be regarded as among the most valuable contributions to Vol. I. The author gives very strong reasons, which are supported by evidence from his own clinical records, why this disease, contrary to the opinions which are generally held on this subject, must, and does, tend to shorten life and, further, Dr. Byrom Bramwell makes suggestions for estimating the extent to which such lives should be loaded for insurance purposes. In Vol. II. a clinical lecture on Disseminated Sclerosis, with Special Reference to the Frequency of its Incidence and to its Etiology, is well worth reading. It is, indeed, a most important contribution to the literature of this disease and, further, it affords statistical facts with reference to the distribution of the disease respectively among hospital and private patients. Practitioners whose knowledge of some of the rarer and, indeed, of many of the commoner diseases has begun to grow rusty will find the reading of these volumes a very easy and pleasant method of reviving their information on the forgotten points. Among the common complaints which have formed the subject of the author's Wednesday cliniques and are reported in these volumes we may mention Addison's disease, renal calculus, aneurysms, locomotor ataxia, and neurotic vomiting. The studies which deal with these commonplace and every-day diseases are, by the genius of the author, made really interesting and incidentally in discussing these diseases all the newer methods of diagnosis and treatment are referred to, special emphasis being laid on the value of hæmatology and serum-therapeutics in this connexion. Among the rarer diseases which are illustrated in these volumes are examples of pancreatic infantilism, idiopathic infantilism, achondroplasia, and an anomalous or, as the author prefers to call it, a "fruste" case of exophthalmic goitre. Ichthyosis appears to be a favourite subject with Dr. Byrom Bramwell and it is discussed in various studies from several points of view, both singly and combined with other diseases. The author is particularly fond of referring to the influence of constitution and environment on the character manifested by different diseases—that is to say, on the polymorphic character of disease under different conditions—and ichthyosis is a disease which well illustrates this point. Other conditions which are frequently referred to in these volumes are epilepsy, migraine, and chorea, a group of diseases which possess many pathological features in common.

It is impossible to speak adequately of the merits of these two volumes but sufficient has, perhaps, been said to induce practitioners who desire to keep themselves abreast of the modern evolution of medicine to read these volumes at their leisure.

Report on Dourine in Different Breeds of Equines, together with an Account of Vesicular Exanthema and Piroplasmosis which occurred as Complications. By ALFRED LINGARD, M.B., M.S. Durh., D.P.H. Cantab., Imperial Bacteriologist to the Government of India. With 16 illustrations. Calcutta: Office of the Superintendent of Government Printing, India. 1905. Pp. 84, with Appendices pp. xcix.

THIS valuable report deals with dourine as observed in English and Australian thoroughbreds and in Arab stallions which exhibited the disease in chronic, latent, and recent forms. The course of the malady as seen in equines of different breeds in India, together with a short summary of the life history of the trypanosoma, is recorded. Dr. Lingard during his inquiry encountered not only dourine but two other forms of disease—viz., a vesicular exanthema, an infectious sexual disease of horses occurring in an epizootic form, which in its severe form has been mistaken for dourine, and piroplasmosis, in which an organism was found in the red corpuscles akin to, but not identical with, that producing hæmoglobinuria in Texas fever.

Dr. Lingard first gives a *précis* of the cases of spontaneous or naturally contracted dourine in stallions observed at the Babugarh Depôt and at Bareilly, and of experimental cases of dourine in equines, dogs, rabbits, and guinea-pigs. He next proceeds to the facts bearing on the etiology of the disease. As regards the period of incubation, this was found a most difficult matter to obtain accurately in spontaneous cases of the disease, but experimental cases showed that if dourine is suspected in any given equines the veterinary surgeon ought to be on the alert any time between the tenth and fiftieth day after the date of the primary covering. There are certain symptoms appearing in the early stage between covering or inoculation and the eruption of the first cutaneous plaque which can help the observer in his diagnosis, such as congestion of the vaginal mucous membrane and the formation of vesicles, more or less persistent tumefaction of the labia, and swelling and œdema of the vaginal mucous membrane. The simultaneous occurrence of all of the above symptoms should lead the observer to suspect a case of dourine. The period between the covering or inoculation and the appearance of the first plaque is variable both in stallions and mares, especially in the former. Until the plaques appear, in the large majority of cases it has been found that the disease has not become generalised but the *materies morbi* is lying dormant in some region of the body. Thus in some cases the disease has remained latent for more than 12 months. In other cases only 34 days elapsed between the date of covering and the eruption of plaques. In general, however, it is concluded from the experiments that the length of time between the covering or inoculation and the appearance of the primary plaque varied between 24 and 34 days. The plaques again were found to appear during a period varying from

17 to 313 days. Their commonest sites were the neck, chest, abdomen, croup, and shoulders, whilst in some cases they were more or less localised in some particular region. The various forms that the plaques assume are well described; there were in 443 plaques in equines 313 circular and 130 oval or irregular. In size, where few they are fairly large, and where numerous they are smaller. They may vary when circular from 0·5 to 5 inches in diameter, and when oval or irregular from 0·75 by 0·5 to 8 by 5 inches. Respecting the length of the individual paroxysms and intermissions, the shortest period of a paroxysm was 24 hours and under, while the longest was four days. The shortest period of an intermission was one day and the longest was 138 days. As a rule the plaques only appear once but in a certain percentage of cases they reappear on the same spot. Weakness in the loins and paraplegia were found to attack stallions less frequently and at a later date than mares. Not infrequently a stallion may exhibit for a long time a symptom pointing to dourine—viz., swelling of the sheath—but an absolute diagnosis cannot be arrived at till further symptoms have developed. In these cases Dr. Lingard recommends bleeding, as loss of blood will bring out the eruption of plaques and thus much time and expense will be saved.

With regard to the diagnosis between surra and dourine, the chief points of distinction are that in surra the paroxysms are usually accentuated by the manifestation of well-marked conjunctival petechiæ, high fever, and the presence of large numbers of hæmatozoa. The disease is an acute one, being fatal within two or three months; the spleen is always enlarged and the vulva and vagina are rarely implicated. In dourine, on the contrary, there is a complete absence of conjunctival petechiæ, the temperature rarely exceeds normal limits, and the protozoon may be only present in small numbers and undiscoverable. The disease is essentially chronic, death being rare before six months. There may be no perceptible enlargement of the spleen and the vulva and vagina are affected.

With regard to the period of the disease during which the trypanosoma could be discovered in the vaginal mucus of the affected animal, it was found that it could be observed as early as the seventeenth or eighteenth day after the covering. Lastly, as regards the exciting causes bringing about a primary or further eruption of plaques, it was found that certain depressing conditions due to fatigue, from whatever cause, would act thus.

The next section of the report deals fully with the symptoms. These are referable to (1) the genital organs, (2) the skin, and (3) the nervous system. They in the first phase are seen to differ in the stallion and in the mare. The skin manifestations are those of plaques, disseminated urticaria, and an eruption of small vesicles. In the last phase of the disease the animal suffers from progressive emaciation, weakness, and anæmia. Paraplegia finally sets in and then death ensues from exhaustion or pulmonary complications. Towards the end hæmaturia or hæmoglobinuria may supervene. Next follows a section on the diagnosis of the affection considered in its clinical and in its microscopical aspects. Clinically, the appearance of the plaque is the most important fact. An excellent table of the comparative symptoms of surra and dourine is given.

With regard to the duration of the disease in India Dr. Lingard has found it still in an active state after an interval of three years from the exhibition of the first symptom. The mortality has been 30·77 per cent. It is greater in mares than in stallions and the disease runs a more rapid course in imported than in country-breds. As regards treatment no satisfactory measure has as yet been found. Dr. Lingard has proved experimentally that the trypanosomata of dourine and surra may be cultivated *in vitro* but sufficient time has not yet elapsed to allow of experimental inoculation being made with cultivations far removed from the initial virus. In this method would seem to lie the only chance of curing the disease. For controlling the disease in the matter of prophylaxis, the affected animal must be protected from flies which carry the contagion and the stable floors must be kept clean and disinfected.

Space will not permit us to enter into the remaining features of this lucid report; the reader will find some excellent observations on the trypanosoma of dourine, on the post-mortem appearances, on the vesicular exanthema of horses, and on piroplasmosis. The book is illustrated by some excellent plates. The whole work represents an immense amount of labour and is worthy of the author. He is sincerely to be congratulated on the result of his labours.

A Revision of the Anophelinæ. By Lieutenant-Colonel G. M. J. GILES, F.R.C.S. Eng., &c. London: Bale, Sons, and Danielsson. 1904. Pp. 47, with 1 plate and 13 figures in the text. Price 2*s.* 6*d.* net.

AS its sub-title informs us, this pamphlet is a supplement to the author's "Handbook of the Gnats or Mosquitoes" and it essays to bring up to date our knowledge of the sub-family anophelinæ. Lieutenant-Colonel Giles is working in friendly rivalry with Mr. Theobald, to whom has been intrusted the duty of studying the British Museum collections of these dipterous plagues and who is continually bringing out memoirs and additional records concerning the immense variety of species of culicidæ. The great rapidity with which this line of investigation is being pursued at the present time will, we fear, be the cause of a good deal of confusion in the future as to the limits of species and genera. A cool and even armchair revision of the accumulated facts will be the duty of some specialist by-and-by. In the meantime it is plain that these "matériaux pour servir à l'histoire" will form the groundwork of future knowledge of the family culicidæ. Lieutenant-Colonel Giles himself is a little sceptical as to the real existence of the 96 species of anophelinæ which he duly records and observes in his prefatory remarks that when the study of the larvæ has advanced to a higher pitch a large number of reputed species will have to be dropped as mere synonyms. To the systematist only secondarily interested in the germ-carrying powers of mosquitoes the infinite multitude of species and their diverse geographical distribution are at present somewhat of a puzzle. All this requires careful sifting out and cases of occurrence of apparently the same species in the most widely separated localities must be checked by criteria which will probably ultimately be arrived at. At present the general opinion will be that there is not much relation between classification and distribution. In this pamphlet Lieutenant-Colonel Giles deals only with matters of classificatory interest and the value of his diagnoses of genera is largely increased by the clear figures of generic characters with which he begins the brochure.

LIBRARY TABLE.

An Introduction to Midwifery: A Handbook for Medical Students and Midwives. By ARCHIBALD DONALD, M.D. Edin., Gynæcological Surgeon to the Manchester Royal Infirmary. With numerous Illustrations. Sixth edition. London: Charles Griffin and Co. 1905. Pp. 192. Price 5*s.* net.—This, the sixth, edition of this little work has been carefully revised in the light of the Midwives Act and much trouble has been taken to make clear the conditions in which the midwife may take responsibility and those in which she must call in a medical man. Some extracts from the rules framed by the Central Midwives Board for the regulation, supervision, and restriction within due limits of the practice of midwives are given in an appendix. The author has endeavoured to treat the subject in a manner that will be found not too elementary, in a guide to attendance on labour, for the student and at the same time not too advanced for the more intelligent class of midwives. The first chapter is intended for the midwife alone. The book is well written and well illustrated and fully deserves the measure of popularity which the former editions have enjoyed and which, we think, will be continued to the present one.

The Oxford Shorthand. Dover: The Oxford Shorthand. 19th edition. Pp. 36. Price 6*d.*—It is stated that this shorthand was being constructed about the time of the First Great International Shorthand Congress held in London in 1887; that the amount expended upon it now approaches £4000; and that it was awarded the Exhibition Grand Gold Medal in 1889 A number of favourable opinions of the public and the press respecting it are quoted. The system is based on the relative frequency of certain words. Passages, containing in all 50,000 words, were taken from ten standard authors—5000 words from each. At the top of the poll was the word "the" which came 3959 times. Similarly, "of" occurred 2739 times and "and" occurred 2049 times. It was finally found that a list of 280 words accounted for nearly four-fifths of the 50,000 words. The list of outlines of words to be learnt was therefore arranged in descending order of frequency of occurrence, the first word being the most important because the most frequent, the second the next most important, and so on all the way down. It is claimed that the shorthand can be written very rapidly. A note at the bottom of an accompanying circular says, "Books only, 5*s.* net, post paid."

Poisonous Plants of all Countries. By A. BERNHARD SMITH. Bristol: John Wright and Co. 1904. Pp. 88. Price 2*s.* 6*d.* net.—This will be found a useful little book of reference dealing not only with plants undoubtedly poisonous but including many plants the toxic effects of which are not very great. After a table of the poisonous principles contained in the plants described, the author gives a short glossary of botanical terms, followed by a description of the poisonous plants classified under the names of the various parts of the body upon which the poisonous principles act, the symptoms produced, and the suggested treatment. An appendix contains a list of reputed poisonous plants. There are two coloured plates of European fungi and a good index.

Merck's Annual Report for 1904. London: 16, Jewin-street, E.C. 1905. Pp. 241.—Merck's Annual Reports fill an important place in pharmacological literature. This recent number represents the eighteenth volume of the series. It is fair to state that the publication consists in reality of an authoritative epitome of recent therapeutic literature and that its references are by no means restricted to the particular pharmacological products of the Darmstadt factories. The present volume gives a brief review of the physiological action and therapeutic results obtained as recorded in the medical literature of 1904. Chapter and verse are given in each case. The book is sent free to medical men on application.

Appendix to Squire's Pocket Companion to the British Pharmacopœia. London: Squire and Sons. 1905. Pp. 35 - xxv.—This useful publication enables the practitioner at a glance to acquaint himself with the recent contributions that have been published in regard to drugs and new therapeutic agents. It is, in fact, a supplement to the excellent Pocket Companion published by Messrs. Squire, thus serving to bring that volume up to date. In short, it is a digest of recent pharmacology and as such will be appreciated by the medical practitioner desirous of keeping pace with therapeutic and pharmacological advance.

A Synopsis of the Principal Changes in the United States Pharmacopœia effected by the Eighth Decennial Revision. By W. HARRISON MARTINDALE, Ph.D. London: H. K. Lewis. 1905. Pp. 36. Price 2*s.*—The publication of this synopsis of the recent revision of the United States Pharmacopœia is of interest inasmuch as it brings conveniently to the notice of the medical practitioner and of the pharmacist the chief alterations which have been made. Americans are certainly not behind in therapeutic and pharmaceutical matters and we must often own in this country to taking a leaf out of the American book. The revisions here recorded in a convenient form by Dr. Martindale are instructive and the hints thereby given will doubtless be noted by our Pharmacopœial authorities.

JOURNALS AND MAGAZINES.

Medical Chronicle.—The July number opens with an interesting article by Dr. J. Dreschfeld upon Syphilitic Affections of the Central Nervous System, treatment by mercurial inunction being advised together with iodide of potassium internally. Contra-indications to the use of mercury are a low state of health, great emaciation, and the existence of optic atrophy. Dr. W. E. Fothergill, discussing Variations of the Menstrual Functions in Anæmia, gives an account of recent views as to the nature of this function which is regarded as a means of ridding the female system of nutritive material laid up in excess of the requirements of the organism. When pregnancy occurs these are used for the nutrition of the fœtus. Amenorrhœa may be produced either by a failure of the anabolic process just alluded to or by lack of a stimulating secretion formed by the corpus luteum of the ovary.

Looking Back.

FROM

THE LANCET, *SATURDAY*, August 18, 1827.

EVERY man, according to the lawyers, who conducts his own cause, has a fool for his client; and it is certain, that of all persons medical men are the least liberal in conferring the benefits of their professional experience upon themselves. The lawyer grumbles over his losses, without calling the "glorious uncertainty" to aid his cause, holding it, as he does, of course, specially in trust for the benefit of the people alone; and the physician who prescribes for the ailments of a thousand, appears to be regardless of his own, which are, perhaps, fast hurrying him to the bourne of his fathers. Strange as it may appear, that the man who has bought a ticket in the lottery of physic, with all the chances which a knowledge of anatomy and the various collateral sciences may be supposed to give him, should decline drawing, when himself, the preservation of his own existence, is the prize—still more strange is the state of society, when it is pretended and industriously inculcated and believed, that any man wanting these requisites can, by means of medical guides, administer successfully to the sad catalogue of diseases which infest the human frame! The people are deceived. Buchan and the writers on domestic medicine have done more for physicians, than the readers of these sacred tomes are perhaps aware of. Narcissus like, the patient pines over his own image, and gathers fresh tortures at every page of his reading.[1]

PHILOMATIC SOCIETY OF PARIS.

A Female with Three Breasts.

M. Adrien de Jussien related the case of a woman having three breasts, one *situated in the groin*, with which she occasionally suckled. This was the more remarkable, as her mother had three breasts, but all situated on the chest.

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[1] Excerpt from review of "*Modern Domestic Medicine, or a Popular Treatise, illustrating the Character, Symptoms, Causes, Distinction, and correct Treatment, of all Diseases incident to the Human Frame; embracing all the modern improvements in Medicine, with the opinions of the most distinguished Physicians,* &c. [The title would fill a page] By JOHN THOMAS GRAHAM, M.D., Member of the Royal College of Surgeons, &c. 8vo. pp. 564. London, 1827. Published by Simpkin and Marshall."

Reports and Analytical Records

FROM

THE LANCET LABORATORY.

(1) "TABLOID" HEMISINE; (2) "SOLOID" HEMISINE COMPOUND WITH EUCAINE; AND (3) "SOLOID" HEMISINE WITH ATROPINE SULPHATE.

(BURROUGHS, WELLCOME, AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

1. THE tabloid hemisine, the name given by Messrs. Burroughs, Wellcome and Co. to the hæmostatic principle of the suprarenal gland, contains 0·001 gramme of the derivative. This tabloid is convenient for administration by the mouth to arrest gastric hæmorrhage or for the sake of its tonic effect on the heart and vessels. 2. The soloid hemisine compound contains 0·0001 gramme hemisine, 0·08 gramme sodium chloride, and 0·02 gramme eucaine hydrochloride. This is useful for the preparation of a solution for intravenous or intramuscular injection. 3. The soloid hemisine with atropine sulphate contains 0·0002 gramme of hemisine with 0·001 gramme of atropine sulphate and is used as an intravenous injection in cardiac failure or collapse or as an intramuscular injection in post-partum hæmorrhage.

METAKALIN.

(THE BAYER CO., LIMITED, 19, ST. DUNSTAN'S-HILL, LONDON, E.C.)

The antiseptic constituent of metakalin is meta-cresol combined with an alkali. The antiseptic and disinfectant power of meta-cresol is well known and supersedes that of the other cresols. Metakalin is supplied in the form of tablets of 15 grains each and one tablet dissolved in four ounces of water gives a 1 per cent. solution which is convenient for ordinary purposes. The solution also has the advantage of being a distinct detergent.

ITONA BREAD.

(E. G. MOORE, 164, REGENT'S-PARK-ROAD, LONDON, N.W.)

This bread is distinguished analytically by containing a maximum proportion of the nutritive constituents of wheat, while the coarse branny envelope, which is a source of irritation in the alimentary tract, has been carefully eliminated. Moreover, the bread contains an excellent proportion of mineral salts, including the essential natural phosphates. Our analysis showed as much as 7·05 per cent. of proteid in the moist bread, the moisture amounting to 41·50 per cent. The loaf is of a light-brown colour, well baked, and of uniform texture; the flavour is very good and superior to that of bread made from an inferior quality of flour. We have more than once urged the importance of keeping up a high standard of quality of bread such as is represented in this specimen.

WOODHOUSE BLEND WHISKY.

(R. B. SMITH AND SON, PERTH, N.B.)

The analysis of this whisky gave the following results: alcohol, by weight 42·29 per cent., by volume 49·81 per cent., equal to proof spirit 87·29 per cent.; and extractives, 0·03 per cent. As regards secondary products the following were the results given in grammes per 100 litres of absolute alcohol present: volatile acidity, calculated as acetic acid 103·00; aldehydes, 20; furfural, 2·22; ethers reckoned as ethyl acetate, 56·32; and higher alcohols, 132·40; total, 318·94. These figures indicate a blend as described, the furfural, ethers, and higher alcohols being somewhat under the amount generally found in an all-malt whisky. The spirit gives distinct evidence of age and is smooth to the palate. There was no indication at all of the presence of acrid products. The flavour is delicate. This spirit compares very favourably with specimens of its class.

SPARKLING BILZ.

(THE HARTMAN BILZ BEVERAGE COMPANY, 11, QUEEN VICTORIA-STREET, LONDON, E.C.)

For all practical purposes this is a non-alcoholic beverage containing less than 2 per cent. of proof spirit which is regarded as the limit for revenue purposes. It is pleasantly sparkling, has a bright amber colour, and possesses a peculiar flavour suggestive of fruit essences. There are two qualities, one described as "dry sparkling" and the other as "sweet sparkling," but as regards sugar there is not much difference according to our analysis in the amounts between them. Thus, in the sample described as dry the sugar amounted to 10 per cent. and in the sample described as sweet to a little over 11 per cent. In our opinion both are too sweet for the purpose of a beverage, but of course palates differ. We do not regard it as an ideal non-alcoholic drink.

SILKY FIBRE ASEPTIC HANDKERCHIEF.

(THE TOILET NOVELTIES CO., 5, UNITY-STREET, COLLEGE GREEN, BRISTOL.)

We have previously noticed this excellent material but it has since been improved and handkerchiefs made of it may now be obtained in what is called the new No. 12 pocket-book containing 18 full size handkerchiefs. The result is a neat case which is not bulky and is quite convenient for carrying in the pocket. The material has a silky lustre and touch and its texture is rigid enough for the purpose in view. The handkerchiefs are treated in the course of manufacture with an odourless antiseptic and they contain nothing but the silky fibre. When soiled—and they are very absorbent—they may be burnt or even disposed of down the sink as they readily disintegrate in water and therefore are not calculated to choke the pipe. Their use, of course, in influenza, common colds, and tuberculosis of the respiratory organs, and their subsequent destruction by fire is an eminently hygienic measure.

(1) PLASMON BLANCMANGE AND (2) PLASMON CUSTARD POWDER.

(INTERNATIONAL PLASMON, LIMITED, FARRINGDON-STREET, LONDON, E.C.)

Many custard powders and blancmange powders when prepared result at their best merely in a starch jelly which in no way represents the nourishing properties of a genuine custard. A proper custard at any rate should be made from eggs and milk and then it is an article of decided nutritive value and appetising quality containing a good proportion of proteid. In plasmon custard the proteid is represented by milk proteid, so that probably the resulting preparation is of decided nourishing value. Plasmon custard powder, according to our analysis, contains over a fourth of its weight of proteid and plasmon blancmange over a fifth of its weight of proteid. The preparations therefore are a distinct dietetic advance on the custard or blancmange which contains little else than starch.

KASTILIS.

(CHARLES BILLING, 43, HANLY-TERRACE, ENFIELD LOCK.)

Theoretically, ordinary borax is an acid borate of soda, just as bicarbonate of soda is an acid carbonate of soda, but, as is well known, borax is decidedly alkaline to litmus test papers, boric acid in fact having a very feeble acid power. Nevertheless, there is reason for believing that in spite of this feeble acid power borax is not altogether compatible with soap, for when borax is mixed with soap some fatty acids, it is stated, separate. This has suggested the preparation of monoborate, which means saturating the excess of boric acid in borax with soda or potash or both. The resulting solution of monoborate is called "kastilis" which may be incorporated with soap without setting free any fatty acids. The idea seems to us to be sound and certainly an excellent cleansing soap is produced. It has a pleasant, soft feeling when lathered in the usual way and leaves the skin smooth and clean. It is stated further to be soothing in irritable conditions of the skin.

CRÊME DE MENTHE.

(Get Frères, Révèl, France; Agency, B. Lauriez, Paris, and 6, Fenchurch-buildings, London, E.C.)

For all intents and purposes this is a liqueur. It is a delicately green coloured and somewhat syrupy fluid with an agreeable flavour of oil of peppermint. Analysis gave the following results: alcohol, by weight 23·62 per cent., by volume 28·77 per cent., equal to proof spirit 50·41 per cent.; solid constituents, 48·83 per cent.; and mineral matter, 0·02 per cent. We think the quantity of sugar might be reduced with advantage as practically all the solid constituents consist of sugar, that is nearly 50 per cent. The sugar readily crystallised on exposure of the liqueur to dry air. The liqueur is a pleasant carminative and stimulant by virtue of the spirit and the oil of peppermint contained in it. Oil of peppermint, moreover, has decided antiseptic power, so that it serves as an anti-fermentative in dyspepsia.

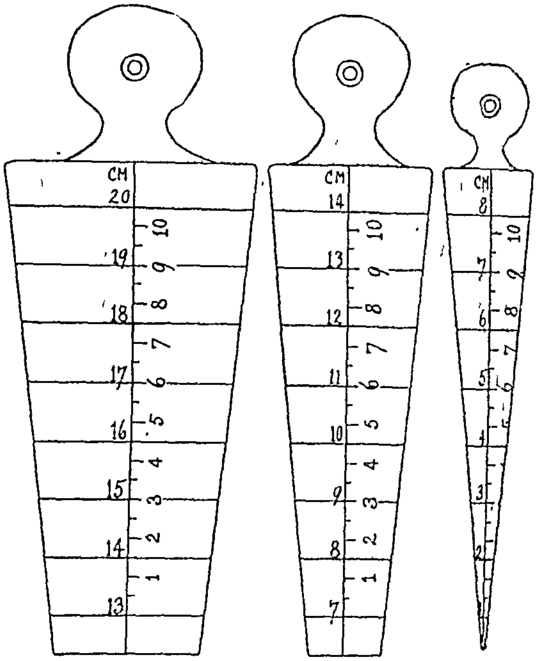
THERAPEUTIC YEAST.

With reference to a notice which appeared under the above heading in The Lancet of June 17th, 1905, Professor E. Jacquemin of Malzèville, near Nancy, who introduced the pure grape ferment there described (Messrs. Cooper and Co. of 80, Gloucester-road, London, S.W., acting as agents), issues in a communication which has reached us a warning note to the medical profession as to imitations which he states are being offered. He emphasises the importance of employing for therapeutic purposes the pure ferment of the grape only and states that neither the Pasteur Institute nor the late M. Pasteur has been, or is, in any way associated with these products, as might be implied from the way in which the name of the late distinguished *savant* is being connected with them.

New Inventions.

CONES FOR MEASURING THE CIRCUMFERENCE OF ORIFICES.

In the course of post-mortem examinations occasions arise when one has to measure accurately the size of orifices in the heart and elsewhere. In the Royal Infirmary of Edinburgh cones indicating the diameters in inches have been used for many years for this purpose. These are admittedly unsatisfactory, as in calculating the circumferential measurements from the diameters any error which has crept in, for example, through stretching of the orifice, is multiplied 3 1/7 times. Other means have been adopted—e.g., metal balls of different sizes, and I believe that on the continent cones similar to those I figure have been employed, but I have been unable to obtain either specimens or descriptions of them. Professor W. S. Greenfield of Edinburgh has a cone of this kind which was made for him 25 or 30 years ago, but owing to its wide angle and close markings it is somewhat difficult to use. To supply this want and to obviate these objections I have designed the cones figured in the sketch which is drawn to a scale of one-half the actual size. The sides of the cones are inclined to each other at an angle of 12°, this facilitating their introduction and making for accuracy in the measurements taken. The transverse lines drawn round the cones indicate circumferential measurements in centimetres. These lines are one and a half centimetres apart. To show this a line divided into centimetres is drawn from base to apex of each cone crossing the transverse lines. A longitudinal scale is thus furnished which is useful in localising exactly the site of constriction, for example, in funnel-shaped openings. On the other side of the longitudinal line marks were introduced in the case of the first cones made, dividing the distance between the transverse lines into fifths, thus enabling circumferential measurements to be recorded in fractions of centimetres if required. These have been omitted in the sketch. I have tested the various measurements and find them to be very accurate. The cones are solid, being made of boxwood.



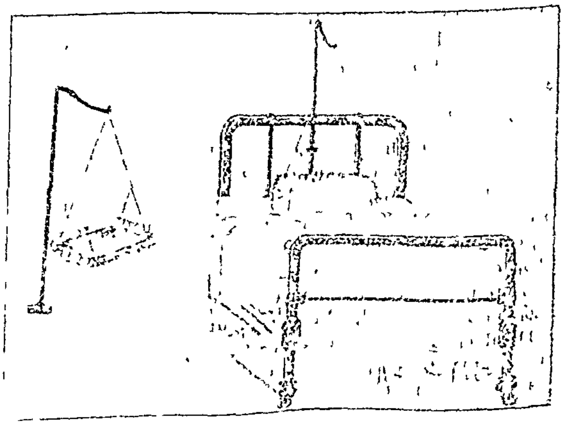
Cones for measuring circumference of openings.

I have to thank Messrs. Archibald Young and Son, Forrest-road, Edinburgh, for the care and patience with which they have carried out my designs and also for furnishing the block illustrating this note.

Theodore Shennan, M.D., F.R.C.S. Edin.,
Pathologist at the Royal Infirmary, Edinburgh.

THE GRAHAM HEAD AND SHOULDER SUPPORT.

We have received from Mrs. Frances Furnivall, of 13, Fawe Park-road, Putney, an illustration and short description of a head and shoulder rest which, she states, can be adjusted to any form of bedstead in a few minutes and affords rest and ease to the bedridden and to those confined to bed for a period through suffering. It consists of a metal rod having very much the appearance of the figure 7 which is clamped to one of the perpendicular rods at the head of the bedstead. From the projecting portion or head of the 7 depend two inverted Y slings holding a support for a pillow. This device no doubt allows of easy movement of the head but we have not tried the apparatus itself. The price of the head and shoulder rest is £1 1s.



THE BRITISH MEDICAL ASSOCIATION.

MEETING AT LEICESTER.

THE SECTIONS.

LARYNGOLOGY, OTOLOGY, AND RHINOLOGY.

WEDNESDAY, JULY 26TH.

The discussion on the papers of Dr. W. MILLIGAN, Mr. E. B. WAGGETT, and Mr. T. G. OUSTON on

The Lines of Treatment in preventing Acute Middle-ear Suppuration from becoming Chronic

was continued by

Mr. R. LAKE (London) who said that the efficiency of a perforation for drainage depended upon its size and site. He was in favour of free incision of the drum before marked bulging occurred. He would not operate upon the adenoids when the ear disease was acute.

Dr G. W. HILL (London) agreed with Mr. Waggett that the acute cases got well when treated. He (Dr Hill) incised the membrane when bulging and afterwards performed politzerisation.

Mr. L. A. LAWRENCE (London) considered that amongst hospital out-patients a large number of acute cases became chronic through the treatment not being carefully carried out by the patients.

Dr. W. JOBSON HORNE (London) was inclined to the view that a large number of cases of middle ear suppuration were chronic *ab initio*. He based this opinion upon the results of a bacterioscopic investigation conducted post mortem on subjects free from ear disease. In the middle ear were found organisms of a non pathogenic nature; under certain conditions these might assume a pathogenic rôle. As regards treatment a free incision of the drum of an exploratory nature might often be avoided by previously withdrawing the contents of the middle ear under all aseptic precautions with a fine and suitable pipette. The results of the puncture would decide the operator as to the necessity of a free incision, and a bacterioscopic examination of the fluid drawn off would throw light not only on the exact etiology of the case but also on the prognosis of the acute condition becoming chronic.

Dr J. KERR LOVE (Glasgow) knew of no reasons against politzerisation but he did not practise it after paracentesis of the drum He preferred the dry treatment of acute cases

Dr. J DUNDAS GRANT (London) advocated aseptic precautions in performing paracentesis In acute middle-ear suppuration in children he thought of naso pharyngeal treatment, and in adults of tympanic treatment.

Dr. HERBERT TILLEY (London) had found that the use of leeches in acute cases led to confusion by the œdema which they induced; it was difficult to decide how much of the œdema was due to the leeches and how much to the mastoid conditions.

Dr. J. MIDDLEMASS HUNT (Liverpool) recommended the widening of the perforation in cases that did not improve

The PRESIDENT of the section, Dr. F. W. BENNETT (Leicester), in summing up the discussion, considered that knowledge of the subject had suffered through insufficient progress with bacteriological investigations. The dangers from the use of inflation he thought had been overstated; at the same time he considered that sufficient attention was not paid to keeping the bags used for the purpose in a clean and aseptic condition.

Dr. MILLIGAN, in replying, thanked the members for the attention which they had given and said that he had expected hostile criticism of some of the operative measures which he had submitted.

Mr WAGGETT, in replying, said that in the routine treatment by general practitioners paracentesis and politzerisation were not called for in every case of earache On the other hand, paracentesis must not be delayed until "to morrow morning" if certain conditions called for it; one of these conditions was the presence of true opaque pus in the tympanum. Many speakers had said that politzerisation did no harm. Could it do any real good? He believed that it could, and did, do actual harm occasionally. Experience had given him complete confidence in removing adenoids during an acute muco-purulent catarrh of the middle ear Many tender mastoids accompanied with fever got perfectly well; but even in the absence of the classical signs of mastoiditis, *including dropping of the postero-superior* wall of the meatus, a very copious purulent discharge compelled the surgeon to operate or else to risk the patient becoming affected with chronic otorrhœa.

Dr. ALBERT A. GRAY (Glasgow) read a paper on

The Pathological Conditions found in a Subject who had suffered from Deafness during Life.

He said that the individual from whom the temporal bones were removed had suffered from almost absolute deafness and very severe tinnitus for a period of 17 years before her death at the age of 71 years. The patient died from malignant disease of the uterus and in addition to the conditions relative to the cancerous affection the following were noted in regard to the anatomical changes found *in the temporal bone* and the adjacent structures. The bones of the skull were remarkably soft and the saw went through the calvarium almost as if the bone were of the consistency of hard cheese The greater part of the temporal bone was also soft in character and the dense ivory-like capsule of the labyrinth was much reduced in thickness The mucous membrane of the tympanum and Eustachian tube was normal throughout. The malleo-incudal joint was ankylosed *on the right* side but not on the left On both sides the stapes was completely ankylosed in the oval window, the ankylosis being bony throughout. In the left membranous labyrinth the changes in the bony capsule were found to have produced distortions in the two limbs of the posterior canal by encroaching on its lumen The cochlear branch of the auditory nerve was atrophied at least in the two upper turns of the cochlea. The ligamentum spirale appeared to be of a less dense nature than normal, though this may have been due to old age and not to the disease In the *right membranous* labyrinth there was found to be no actual distortion. The ligamentum *spirale* was atrophied as was also the cochlear branch of the nerve There were two masses of calcareous deposits, one in the common limb of the posterior and superior canals and the other in the posterior limb of the horizontal canal.

Dr W S SYME (Glasgow) demonstrated

A Pair of Forceps for Operations on the Maxillary Antrum.

The instrument had been designed by Dr. Syme for the purpose of removing the inner or nasal wall of the antrum of Highmore to permit of sufficient drainage. The forceps were constructed with suitable curves for introduction with the blades closed through the right and left nostrils respectively. They *differed* from those in use inasmuch as they could be employed for the purpose indicated through the nostril and not through the opening made externally, and were more adaptable for the removal of the inner bony wall down to the floor of the nose.

NAVY, ARMY, AND AMBULANCE.

WEDNESDAY, JULY 26TH.

Surgeon-Lieutenant Colonel H W. KIALLMARK (London) was the President of this section and called upon Fleet Surgeon C M BEADNELL, R N., to communicate a paper

On the Disposal of our Wounded in a Naval War.

He stated that some of the suggested methods of dealing with the sick or injured on board a man-of-war in action were: 1 To throw them overboard. 2 To allow them to lie *in situ*, with first-aid dressings or appliances put on by themselves, their comrades, or the medical staff, until a lull in hostilities permits (*a*) the medical officer of the ship to repair on board or on deck, as the case may be, and to administer first aid to the wounded *in situ*, or, if there be no medical officer on board, (*b*) the evacuation of the wounded into another man of-war, a hospital ship, or shore hospital; and (*c*) an organised transport of the wounded into certain non-protected regions of the ship 3. *To have* an organised system of transport *via* vertical passages to locations specially constructed. 4. To convey the wounded into armoured locations situated in the upper works above the water-line. It was suggested that in a modern action every combatant should wear a life-belt and when incapacitated should be dropped overboard, but to throw an unconscious man into the water was to commit murder, to say nothing of the danger of shock and of sharks First aid to the injured was taught to practically every officer and man in His Majesty's navy. The dressings applied, the man should be carried below. All small craft would be compelled to evacuate their wounded at the first opportunity. In their larger ships it had been advised that the wounded should be left lying where they fell, then when a remission in hostilities occurred the surgeons should be summoned from below to administer first aid. Any unprotected part of a ship was utterly impracticable for administering surgical relief to the wounded. To allow a medical officer on deck during fighting was quite inadmissible. He might chafe and fret at being kept below, but below he must be until all shell fire was over. It was not unreasonable to ask for a specially prepared locality in which the surgeon might attend to urgent cases. Ships must have an easily accessible hospital of combat in which it would be possible to perform surgical operations. There was a tacit admission on the part of most naval officers that the wounded must be got down below in some way or another, so why not have a prearranged location laid down in the primary plans of the ship. Given uniform types of vessels and the inclusion of a hospital of combat in the original plans there would be little disagreement amongst medical men concerning the matter. The hospital of combat should, if possible, be double (one forward, and one aft) in the larger vessels, to allow of subdivision of the wounded into urgent and less grave cases. In vessels of a medium size a single hospital of combat must suffice. There must be free and easy means of ingress and egress by vertical passages. Each hospital of combat should be in direct communication with the fighting decks by means of passages distinct from ammunition hoists and protected, if possible, by armour. On the verge of hostilities it is advisable to shift the men into clean clothing so that any shreds carried into their bodies by shell fragments would, at any rate, be comparatively clean. During the fighting those wounded able to walk would proceed to the nearest dressing station; those more seriously hurt should have first aid dressings applied to them on the spot and at the first opportunity should be detruded to the hospital of combat. Throughout an action all watertight doors were closed and were only opened during some of the interregna of battle. Under present conditions the only uninterrupted viaducts between the fighting and protected decks were the ammunition hoists and to use them for the wounded would interfere with one of the most vital conditions of modern warfare, to wit, the rapid and uninterrupted feeding of the guns. "Ye cannot serve God and mammon," and an ammunition hoist could not perform adequately the function of raising projectiles and detruding wounded. What was wanted was the coöperation of a medical officer with those superintending the construction of the vessels in order to advise upon questions pertaining to the sick bay and the hospital of combat. Another objection urged was that such a hospital of combat would be insufferably hot but much might be done in the way of avoiding excess of heat by insulating the hospital of combat by a layer of cement. Hospital ships were the *sine quâ non* of a modern naval war with its prolonged action, many minor engagements, and vast area of belligerency. To each naval station there should be at least one hospital ship which should be expressly built on the lines of a modern hospital and should be capable of accommodating about 400 to 500 men. It was the urgent duty of the naval constructors to provide well-ventilated, well-lighted, and well-protected hospitals of combat in communication with the upper deck by means of straight passages, allowing of an untrammelled to-and-fro excursion of the apparatus of transport and the rapid evacuation of the wounded from the fighting decks above.

Fleet Surgeon O. W. ANDREWS, R.N., communicated a paper entitled

Arrangements for the Treatment of Wounded in Action on Board H.M.S. "Magnificent" ("Majestic" Class).

He stated that ambulance instruction was given systematically by the surgeon and when reported fit the class was examined by the fleet surgeon. When an action was expected all surgical instruments, dressings, and drugs not required for first aid would be removed to that part of the middle deck generally known as the bag flat. Two dressing stations had been selected, one on the starboard side of the main deck abaft the fore turret and the other on the port side of the main deck before the after turret. As regarded the question of protection, it had been found by practical experience in the present war in the Far East that there was no place in the ship which could be considered safe in action, so that when it was suggested, as had frequently been done, to remove the medical officers "to some place of safety until after the action is over" the suggestion was based on an assumption which was purely hypothetical, as it was not possible for anyone to say which was the safest part of the ship. The conning towers were generally assumed to be the safest places in a ship and for that reason were, as their name implied, set apart for those conning the ship or fleet, but no one could reasonably expect the medical officers to be placed here in action, in places barely large enough for the purpose for which they were designed, yet if the medical officers were to be kept as much as possible from risk of injury until after the action was over that was logically their only position if that idea was to be carried out. Although those two principal dressing stations had been arranged with the idea that one medical officer and half of the staff enumerated would be at those places yet it was not desirable or expedient that the medical officers should be confined to those posts. The medical officers should regard those posts rather in the light of rendezvous where they might be found and they should be free to go wherever their services were most urgently required. Every endeavour should be made to render first aid to the wounded where they fell and it was with that idea that so many men were nowadays instructed in ambulance work. Men seriously wounded were liable to have their injuries aggravated and shock and hæmorrhage increased by being moved during an action. Yet fighting being the object and only object of a man-of-war the wounded could not be allowed to interfere with the fighting efficiency on which not only the safety of the ship or fleet but also of the nation depended, so that not infrequently it might happen that men seriously wounded would have to be placed outside a casemate or turret and removed by the bearer party to the arranged stations after having first received an injection of morphine in order that their suffering and pain might be reduced to a minimum. For this last purpose it was recommended that a plentiful supply of hypodermic syringes should be issued in war time for distribution at the discretion of the medical officer to persons instructed in the method of injecting morphine solution and as to the dose which was to be injected. Before going into action the men should wear clean underclothes and clean clothes generally. When an action was over the wounded requiring major operations would be removed to the place arranged for operations or to a hospital ship. The place selected for operations would depend entirely on the damage which had been done to the ship.

Fleet Surgeon THOMAS AUSTEN, R.N., contributed a paper on

The Collection and Distribution of Wounded in a Modern Cruiser Engagement.

He observed that on Feb. 9th last year he had the opportunity of assisting in the treatment of the wounded on board the Russian second-class cruiser *Varyag*, of 6500 tons, 23 knots speed, 12 six-inch guns, and 535 men, as the result of her 40 minutes' engagement with a Japanese squadron. She had been principally opposed by the *Asama*, a first-class cruiser of 9750 tons, 22 knots, 4 eight-inch guns, 14 six-inch guns, and 750 men. The *Varyag* had been forced to withdraw in a badly damaged state and the result might be taken as a fair type of the likely conditions ensuing on a bold cruiser engagement. The *Varyag* was an unarmoured cruiser and the *Asama* was an armoured cruiser. Half an hour after the engagement was over the *Varyag* returned to Chemulpo harbour, listing to port and her after end burning. She had been struck below the water line and her upper decks and fighting tops had been swept by shell fire. None of the men employed below had been injured but of the 150 engaged about the exposed parts 40 had been killed outright and 68 wounded. Shimose—the explosive used in the Japanese service—was as high in explosive force as, if not higher than, any of the modern powders and the shell breaks up into a large number of small fragments eminently suitable against unarmoured ships. The dressing of the wounded went on continuously from 1.30 to 3.45—over two hours—the two medical officers of the *Varyag* and three from neutral men-of-war rendering first aid, examining wounds and removing foreign bodies that were easily got at, cleaning, protecting, and fixing injured parts, and administering stimulants or hypodermic injections of morphine. In that way about 60 wounded were attended to—the remainder not presenting themselves till subsequently. Nothing beyond first aid was attempted, nor was it possible. There had been two surgical stations, but the after one had been abandoned owing to a fire in the vicinity, so that the forward one was very crowded with wounded. It was also wet owing to the water from the fire-hoses and dark from the failure of the electric light. It was situated on the main deck near the sick-bay quarters. All the instruments had been laid out but those belonging to pocket cases were mainly employed. The wounded had been moved in the intervals of the action. Canvas stretchers and man-handling were employed in taking them to the bases. There was no special appliance for getting cases from the fighting tops. The ship being in a sinking condition had to be abandoned. Taking a modern armoured cruiser of the *Drake* class, where the casemates and barbettes formed the main protection for the fighting material and the side armour and protective deck the main protection to the explosive and propulsive material, and knowing that there were no places behind or below the latter where surgical stations could be established, it was to the shelter of the casemates assisted by the armoured transverse screens that some shelter for surgical stations was looked for. The surgical stations were likely to find most shelter and quiet on the main deck in the vicinity of the casemates. Those who fell on the upper deck and in the barbettes and upper deck casemates must remain there to await the arrival, in the lull of the action, of competent ambulance parties. There would probably be a sufficient proportion of cases able to walk who would keep the stations busy during the heat of the action. There should be two principal surgical stations on the main deck, one forward and one aft, subdivided port and starboard under protection of forward and after casemates and transverse screens; and the material furnishing these should be so simple that it would be easy to move through the armoured screen door to the next group of casemates and so fore and aft to have planned-out places for receiving wounded on either side. The medical staff should be proportioned equally to the fore and aft main surgical stations. Ladder ways on board ship were difficult to negotiate but if a transverse hand-bar was fixed across the extreme ends of the stretcher handles the process of lowering from the upper to the main deck was greatly facilitated. It was too short a distance to need special slings or slides. There had to be a chair or its like for slinging men from the tops when such were manned and a special means of transport out of the narrow and tortuous engine-room spaces and ammunition-supply platforms in case of need. A cruiser after an action should be cleared at once of wounded if she was to be serviceable, for the crew would want all the available space to rest and to reorganise in. If she could not proceed at once to a near base to renew men and material a hospital ship was urgently needed to receive the sick and wounded. Only major operations of the most pressing kind should be attempted on board and the instruments and spare dressings should be preserved below for that purpose. Advanced first-aid treatment should be combined with intelligent collection and distribution of wounded in a modern cruiser engagement. The sooner the enemy's fire was subdued the fewer would be the casualties. Therefore as regarded the wounded the captains of the guns must not have their primary duties interfered with by devoting any of their time to tourniquets and dressing bags. With regard to collection it was not expedient to risk the services of ambulance parties during any part of the fighting. In regard to distribution there ought to be one hospital ship in attendance on every six battleships and every eight first- or second-class cruisers.

Fleet Surgeon A. J. J. JOHNSTON, R.N., considered that in the construction of ships some place should be specially built for the reception of the wounded, well lighted and ventilated, and where operations could be performed.

Fleet Surgeon E. J. BIDEN, R.N. (retired), communicated a paper entitled

Remarks and Suggestions on the Head Dress of Certain Ratings in His Majesty's Fleet.

He discussed the question of the head covering of certain ratings in His Majesty's fleet with special reference to service in the tropics. He referred particularly to the artificer class, including the engine-room artificers, master-at-arms, and ship's corporals, sick berth staff, writers, stewards, and domestics. These men had a blue cloth peaked cap with a white linen cap-cover in the tropics. These men might be seen on shore on duty or on leave at Malta, Singapore, Hong-Kong, and such places with that very poor protection from the sun. It was a question how far that imperfect protection from the sun was responsible for sickness among the men. The health of the navy for 1903 gave 172 cases of heat-stroke in the total force but it was probable that the greater number of these were not sun-stroke but cases of heat-stroke amongst engine-room ratings. The seaman's straw hat might be much more extensively worn; it was comparatively cheap, light (weighing only 10 ounces), durable, and serviceable, being an efficient protection from sun or rain (especially with the brim turned down), it could be easily stowed away, and was smart in appearance.

Fleet Surgeon J. LLOYD THOMAS, R.N., urged the adoption of a thick hat of felt with a wide brim which was readily stowed away and, being pliable, could be turned down over the face, at the sides, or over the nape of the neck as occasion required.

Fleet Surgeon BEADNELL, R.N., communicated a paper on

Some Dynamic and Hydro-dynamic Effects of Modern Small-bore Cylindro-conoidal Projectiles.

He pointed out that the actual work capable of being done by the modern small-bore bullet upon the animal economy was from 1800 foot-pounds to 2800 foot-pounds. The cylindro-conoidal projectile, revolving about its major axis, advanced through the resisting atmosphere with that axis parallel to a tangent to the trajectory at the muzzle. Deformation, which might be due to "stripping," ricochet, or impact with resisting tissues, had the double effect of enlarging the impact area and prolonging the projectile's duration of action. In perforating the tissues the projectile acted like a hammer, driving particles in front of it like a wedge, displacing them laterally, and like a gimlet communicating a part of its rotary motion to them and hurling them into the surrounding tissues like drops of water off a mop. The so-called "explosive" effects were due to sudden enlargement of the impact area resulting from a modification either in the form or motion of the projectile. Many of the "explosive" phenomena were due to such eccentricities of flight as the various "spinning-top" and "pirouetting" motions of the projectile. Surrounding the orifice of ingress, which was circular and smaller in diameter than the projectile, was a white rim, visible at the extreme edges and due to removal by friction of superficial layers of the epidermis. From that orifice radiated minute fissures and if the introverted sectors between those fissures were examined they would be found to have lost their extreme tips. The size of the entrance aperture increased with the range and with the degree of laxity of the epidermis. Ecchymosis around the entrance aperture increased with the range; at extreme ranges there might be extensive bruising but no solution of continuity of the skin. The bullet track was usually the shortest distance between the apertures of entrance and exit; its transverse diameter was smaller than that of the projectile. The aperture of egress was equal to, or slightly exceeded, that of ingress; its sectors were everted and showed no loss of substance except in the case of very high velocities. The entrance aperture was occasionally, and the exit aperture frequently, multiple. The "flat" and "square" bones and the extremities of the larger "long" bones were neatly perforated. The diaphyses might be tunnelled but were more frequently fractured; in the latter case minute comminution together with dispersal of numerous "splinterettes" to a considerable distance occurred when velocity was very high; when it was lower the splinters were larger, less numerous, and closer to the fracture. Many instances were on record of partial or complete recovery after bullet perforations of both cerebral hemispheres. As the bullet entered the cranial space intracranial pressure rose and cerebro-spinal fluid and blood were expelled through the basal foramina. In gunshot wounds of the head brain matter might protrude from both the ingress and egress apertures. After the brief compression of the brain by the projectile there was an increase of bulk due to œdema, which aggravated the cerebral herniæ through the bullet orifices. He had never seen brain protruding through an orifice of ingress where death was instantaneous. Lateral pressures of the brain were liable to cause death through a mechanical lesion of the respiratory centre, though the heart continued to beat; hence in certain cases of gunshot wounds of the head it was not impossible that death might be averted by timely artificial respiration. Fracture of the orbital plate accompanied by complete proptosis of the eyeball was not uncommon after bullet perforations of the frontal lobe. Organs like the stomach, the bladder, and the intestines were grievously injured and their contents were scattered far and wide if fluid were present in any quantity; if empty, however, minute apertures were produced which closed immediately after the passage of the bullet and healed by first intention, thus preventing peritoneal infection. The possibility of more than one coil having been perforated had to be borne in mind in bullet lesions of the intestines. The power of the bullet at close ranges to "drag" its own wad into the depths of the tissues and at long ranges to force in particles of clothing was a factor not to be overlooked in connexion with deep suppuration of the bullet track. Owing to the extremely short contact-time of the modern projectile (about $\frac{1}{3000}$th of a second) the pain consequent upon the actual perforation was often absent, and even so large a region as the thorax might be completely perforated without the person being aware, at the time, of the fact. Local anæsthesia of the bullet track, especially at its entrance extremity, was another characteristic of wounds caused by the modern bullet. External hæmorrhage from the apertures was usually very slight; severe internal hæmorrhage, however, was not uncommon, as the modern small-bore bullet punched holes in the vessels instead of pushing them aside or cutting them completely across as was the custom of the larger, less energetic, and more obtuse-headed bullets in former use.

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Lieutenant-Colonel H. J. BARNES, R.A.M.C. (secretary of the St. Andrew's Ambulance Association), read a paper on

Voluntary Ambulance Wagon Service for Cities.

He suggested that for both the City and County of London an ambulance wagon service should be provided and maintained by voluntary effort on the part of the community. That such a voluntary provision was quite practicable was shown by the continued existence of the accident transport service organised in Scotland by the St. Andrew's Ambulance Association. That was started in Glasgow so long ago as April, 1882, and the total number of patients conveyed since the formation of the service was 64,427 up to May 31st, 1904. The purchase and upkeep of these wagons, hiring of horses and drivers, and the wages of the trained attendants were all defrayed by voluntary public subscriptions; during the year not a single instance of complaint as to the service was made and no case occurred to which attention was not paid. There was some room for improvement in the means of telephonic communication during the small hours of the night, as the street fire alarms were not at present available for the purpose of calling the ambulance, but there were telephones available for the purpose, principally those at police stations, cab offices, shipping offices at the docks, engineering works, and other places open all night. The use of the wagons in cases of accident was absolutely free; cases of sudden illness occurring in the streets or public places were also included in the term "accident." Besides its use in accidents the accident transport service was largely employed by medical practitioners for the removal of cases of non infectious illness to the hospitals for operation, &c. For that, where patients could afford it, a small charge was made. Over-elaboration of the details in equipping an ambulance wagon was to be deprecated, as the simpler and less complicated the fittings the less risk there was of waste of time by their getting out of order and the easier it was to keep the wagon clean and aseptic. The same principle was followed in attending to sufferers—it was not sought to do too much. For instance, the attendants applied the very simplest first-aid dressing to a wound and otherwise interfered with it as little as possible, as the time was so short between an accident being sustained and the arrival at the hospital. Five wagons were kept for the Glasgow transport service and six wagon attendants. The average cost per turn out, including wages, uniforms, telephones, depreciation, insurance, horsing, storing and repairs, and a proportion of the head office rent, &c., was 8s. 2d. The only wagon services in England were those of Accrington, where there was one wagon entirely free to all cases, and Ipswich, where there were two wagons; both were maintained by public subscriptions under the auspices of the local centres of the St. John Ambulance Association and appea satisfaction. Indeed, it would seem that ambulance wagon service was dependent support of the public was a guarantee possible would be given, as otherwise not be forthcoming. In one supported out of the rates there was a risk of its becoming too "official" and not so sensitive to criticism. The efforts of the Metropolitan Street Ambulance Association would have been more usefully directed towards the establishment of an ambulance wagon service for London maintained by voluntary public subscriptions than in inducing the County Council to undertake such provision out of the rates. There should have been no difficulty in interesting the public in such a scheme if it was properly put before them. With regard to London, there were about 11,600 accidents yearly in workshops and factories there in addition to 10,000 street accidents and any scheme to be in any way complete must take account of the former as well as of the latter. Estimating on the experience of Glasgow and allowing for the greater acreage in London it would require at least 120 horse-drawn wagons to do it efficiently. Motor-driven ambulances might possibly reduce that number to 100, the saving in time being so great.

Surgeon-Major G. A. HUTTON said that it must be left for each town and city to adopt such system as would best suit their needs and requirements.

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Lieutenant-Colonel BARNES said that the voluntary system had not fallen away in Scotland but had lasted for 22 years. Free transport for accidents was defensible but the advisability of further pauperising the population by giving free removal in any case of sickness was very doubtful.

Dr. E. L. JENKINS (late civil surgeon to His Majesty's forces in South Africa, 1900-02) communicated a paper on

The Causation, Varieties, and Treatment of Dysentery on Active Service.

He said that overcrowding, which seemed to be a natural sequence of camp life, was an important cause of dysentery. Other factors, however, operated in conjunction with overcrowding and whenever there was a scarcity of food and its quality was open to suspicion the incidence of dysentery became far greater. During active service additional factors played an important rôle, conditions which reduced the vitality of the system and thus rendered soldiers more vulnerable to the disease. Among those were exposure to alternating periods of heat and cold, bodily exhaustion, lying on damp ground, as well as the mental anxiety incidental to a campaign. There were other conditions which more directly determined infection, such as the pollution of soil and water by fæcal material. Dysentery showed a partiality for the warmer climates, while its frequency and severity tended to increase as the equator was neared. Recognising, then, the infectious nature of the disease it was most important that all dysenteric stools should be properly disinfected and either deeply buried at a distance or cremated. The most important factors in the treatment of all forms of dysentery were rest and diet. The patient should be strictly confined to bed throughout the attack, whether mild or severe. Any movement in bed was to be avoided as much as possible, so the bed-pan must be used to obviate the necessity of getting up to stool. Fresh milk, if obtainable, was always the best form of food and about three to four pints might be given during the 24 hours, in small quantities at a time and at frequent intervals. In the absence of fresh milk condensed milk might be substituted, whilst beef-tea, chicken soup, and certain meat essences proved valuable adjuncts. If ordinary milk was not well digested it might be peptonised or diluted with either lime or barley water. Any liquid food was best given in a lukewarm state, as cold liquids by stimulating peristaltic action tended to aggravate the disease. The first indication was to relieve pain and tenesmus in acute cases, and there was no better remedy than the old-fashioned enema of starch and opium, each enema consisting of half a drachm of tincture of opium, made up with an ounce of starch mucilage. The greatest possible care was required during its administration on account der and sensitive nature of the large bowel. often found much relief from the application of steeped in a liniment of opium applied to the abdominal surface, while hot water bottles to the feet and sufficient blankets to insure bodily warmth constituted an essential part of the treatment. They were next confronted with the necessity of removing foul accumulations in contact with the ulcerated mucous membrane. That might be done by giving gently acting aperients, as half an ounce of sulphate of sodium every hour until copious motions resulted. Another method was the internal administration of antiseptics, but prior to giving any such drugs it was necessary to allay both tenesmus and pain by the free use of opium. Ipecacuanha curtailed the course of the disease in many cases but, on the other hand, required careful use on account of its emetic action. It should be given on an empty stomach and as that drug was much tolerated in dysentery a dose of about 30 grains of the powder was necessary every four to six hours until the motion became yellow and less slimy. Once the acute stage was passed and the digestive powers returned the patient's strength might be well maintained and such additional support as eggs and finely divided raw meat might be allowed. The stage of convalescence being well established, tonics became useful, and to accomplish the necessary improvement in health a sea voyage or change of climate was necessary.

Major N. FAICHNIE, R.A.M.C., contributed a paper on the

Varieties, Causation, and Treatment of Dysentery in the Field.

He said that dysentery might be defined as a disease marked by frequent bloody and mucous stools, fever, tenesmus and griping, together with thickening and ulceration of the mucous and submucous coats of the large intestine. As the cæcum or rectum was most affected, griping and tenesmus respectively were the most prominent symptoms. Dysentery might be: 1. Endemic or amœbic. 2. Sporadic, due to mechanical irritation. In South Africa he had seen several cases of that variety, due to the carrots in the rations; with those men slices of carrots were seen in the stools, so that the ileo-colitis produced was the result of want of mastication. 3. Epidemic or bacillary. That was the commonest form occurring in the field and his remarks were limited to that form. Epidemic dysentery was probably due to a group of bacilli, the dysenteric and paradysenteric, which were allied to each other and to the bacillus coli, their cultural differences being mainly due to the reactions of the sugars. The disease might be contracted: (1) from impure water; (2) from dust carried about by the wind; (3) from infection by flies; (4) from want of personal cleanliness, especially as regarded hands and clothes: and (5) from infection from latrines and seats if there were any. That impure water was not the only cause was shown by the fact that when nothing but tea or boiled water was drunk dysentery still occurred. Treatment was: 1. Preventive. (*a*) Patients suffering from diarrhœa and dysentery should be made to report sick at once so as to prevent the fouling of camps; (*b*) all cases of dysentery should be at once isolated so that their stools might be disinfected; (*c*) latrines should be carefully covered with earth and, if possible, sprinkled with chloride of lime so that the spread of infection by dust and flies might be stopped; and (*d*) before rejoining patients should be made to bathe if possible and their clothes should be disinfected or replaced. 2. Removal from the field. Mild cases might get well in a few days and might be allowed to rejoin their units but more severe cases should be sent to the base or the lines of communication as soon as possible. Patients kept moving about were extremely liable to relapses and were also a source of further infection. 3. Medicinal. Cases varied so much that it was difficult to lay down definite rules. Rest and an equable temperature were essential always. For acute cases the best treatment was that by sulphate of sodium or magnesium: that should be given in as concentrated a form as possible and lukewarm. At first drachm doses might be given every hour till the stools contained fæcal matter and then the interval between the doses increased. When there was no more blood or mucus perchloride of mercury in 45 minim doses with tinctura chloroformi et morphinæ every four hours should be substituted. Bismuth and opium and sulphur and opium were also useful at that stage to stop the diarrhœa. When there was much tenesmus a starch and opium enema gave relief. The earlier the treatment by the sulphates was commenced the more chance was there of its being successful. In chronic cases he did not think sulphate of magnesium was of use. A dose of castor oil might be given occasionally, followed by bismuth or sulphur and opium; if hæmorrhage was very severe oleum terebinthinæ was sometimes useful in checking it. It was when dysentery became chronic that local treatment by the bowel proved most useful. A soft rubber tube might be inserted for 20 inches into the rectum, cocaine ointment having first been employed at the anus. A solution of bicarbonate of sodium, 60 grains to the pint, followed by two or three pints of a solution of tincture of iodine once or twice a day, gave beneficial results. 4. Diet. One of the most important points in the treatment of dysentery was the diet. All food should be given lukewarm, neither hot nor cold. In mild cases milk might be suitable but frequently it was not so. In all except the mildest cases whey or albumin water was far preferable to milk and while the symptoms were acute a total of two or three pints at the most of liquid nourishment in the 24 hours was quite sufficient. When fresh milk and eggs were not obtainable tinned milk had hitherto generally been the only food available. That often produced nausea and vomiting and, in consequence, not only exhaustion but in some cases starvation. In severe cases of dysentery, even if nausea was not produced, tinned milk was therefore not suitable any more than fresh when the latter was available. The question of finding substitutes practicable for use in the field then became an important matter. For that purpose Major Faichnie suggested two—viz, whey and plasmon. 1. Whey. It should be remembered that whey could not be satisfactorily made from tinned milk either by fresh rennet or by rennet tabloid. What could be used for the purpose, however, was alum. If one pint of sweetened or unsweetened milk be heated to 150° F. and 20 or 40 grains of alum be added a milky or pure whey respectively could be obtained; thus, one ounce of dry alum was sufficient to curdle thoroughly ten pints of milk and the resulting whey had no taste of the alum and could be flavoured by lemon or orange or coffee essence if desired. 2. Plasmon. That could be used by boiling one and a half ounces of the dry powder with water to make stock; this, mixed with one and a half pints of barley-water and flavoured as before mentioned, would serve as sufficient nutriment for 24 hours or, instead, by simply whipping and flavouring, half the plasmon stock could be made into plasmon sponge cream and could be given alternately with the plasmon and barley-water beverage. A supply of alum and plasmon should be included in the supplies of the field ambulances for the future. There was no doubt in his mind of the great value in dysentery of digitalis and yet neither in books on materia medica nor in those on tropical medicine had he seen any mention made of the use of that drug in that disease. Alcohol, in his opinion, did not compare with digitalis as a cardiac tonic and stimulant and in dysentery alcohol aggravated the symptoms; therefore the use of digitalis was an extremely important matter, not only on ordinary occasions but especially in the field where so many dysenteric patients might die from exhaustion.

Surgeon-Lieutenant-Colonel G. S. ROBINSON (Scots Guards) (retired) said that the freedom of the Japanese from dysentery was attributed to sanitation, but it was more probably due to their simple diet. The causes in relative importance were chill, water, and food.

Major J. B. BUCHANAN, R.A.M.C., said that the great difficulty of treating dysentery in war at the front was the fact that the patient was always on the move and often did not reach a stationary hospital for ten days or more, during which time it was difficult to carry out a suitable treatment by sulphate of magnesium or ipecacuanha.

Major FAICHNIE said that however important pure water might be they should look for additional causes for dysentery.

Major W. M. O'CONNOR, R.A.M.C. (Militia), read a paper on

The Military Medical Reserve Difficulty.

He said that the late war showed how important it was to be ready as it would be remembered that the War Office had to employ in South Africa alone between 400 and 500 civil surgeons and a large number of orderlies taken from various volunteer societies, such as St. John Ambulance Association, and it could not be said that they were altogether satisfactory. It would seem in time of war that there were three methods to choose from. The first was to keep the Royal Army Medical Corps up to war establishment, which would then, of course, necessitate a smaller reserve in time of war. The second was to have a large reserve of civil surgeons and orderlies from St. John Ambulance Association and kindred societies. The third was by encouraging the formation of a home or limited medical service, offering inducements to the best men of the profession to accept commissions. The first method was too expensive and the second was not one that could be encouraged, as it had been however, minute apertures were produced which closed immediately after the passage of the bullet and healed by first intention, thus preventing peritoneal infection. The possibility of more than one coil having been perforated had to be borne in mind in bullet lesions of the intestines The power of the bullet at close ranges to "drag" its own wad into the depths of the tissues and at long ranges to force in particles of clothing was a factor not to be overlooked in connexion with deep suppuration of the bullet track. Owing to the extremely short contact-time of the modern projectile (about $\frac{1}{3000}$th of a second) the pain consequent upon the actual perforation was often absent, and even so large a region as the thorax might be completely perforated without the person being aware, at the time, of the fact. Local anæsthesia of the bullet track, especially at its entrance extremity, was another characteristic of wounds caused by the modern bullet. External hæmorrhage from the apertures was usually very slight; severe internal hæmorrhage, however, was not uncommon, as the modern small-bore bullet punched holes in the vessels instead of pushing them aside or cutting them completely across as was the custom of the larger, less energetic, and more obtuse-headed bullets in former use.

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When there was much tenesmus a starch and opium enema gave relief. The earlier the treatment by the sulphates was commenced the more chance was there of its being successful. In chronic cases he did not think sulphate of magnesium was of use. A dose of castor oil might be given occasionally, followed by bismuth or sulphur and opium; if hæmorrhage was very severe oleum terebinthinæ was sometimes useful in checking it. It was when dysentery became chronic that local treatment by the bowel proved most useful. A soft rubber tube might be inserted for 20 inches into the rectum, cocaine ointment having first been employed at the anus. A solution of bicarbonate of sodium, 60 grains to the pint, followed by two or three pints of a solution of tincture of iodine once or twice a day, gave beneficial results. 4. Diet. One of the most important points in the treatment of dysentery was the diet. All food should be given lukewarm, neither hot nor cold. In mild cases milk might be suitable but frequently it was not so. In all except the mildest cases whey or albumin water was far preferable to milk and while the symptoms were acute a total of two or three pints at the most of liquid nourishment in the 24 hours was quite sufficient. When fresh milk and eggs were not obtainable tinned milk had hitherto generally been the only food available. That often produced nausea and vomiting and, in consequence, not only exhaustion but in some cases starvation. In severe cases of dysentery, even if nausea was not produced, tinned milk was therefore not suitable any more than fresh when the latter was available. The question of finding substitutes practicable for use in the field then became an important matter. For that purpose Major Faichnie suggested two—viz., whey and plasmon. 1. Whey. It should be remembered that whey could not be satisfactorily made from tinned milk either by fresh rennet or by rennet tabloid. What could be used for the purpose, however, was alum. If one pint of sweetened or unsweetened milk be heated to 150° F. and 20 or 40 grains of alum be added a milky or pure whey respectively could be obtained; thus, one ounce of dry alum was sufficient to curdle thoroughly ten pints of milk and the resulting whey had no taste of the alum and could be flavoured by lemon or orange or coffee essence if desired. 2. Plasmon. That could be used by boiling one and a half ounces of the dry powder with water to make stock: this, mixed with one and a half pints of barley-water and flavoured as before mentioned, would serve as sufficient nutriment for 24 hours or, instead, by simply whipping and flavouring, half the plasmon stock could be made into plasmon sponge cream and could be given alternately with the plasmon and barley-water beverage. A supply of alum and plasmon should be included in the supplies of the field ambulances for the future. There was no doubt in his mind of the great value in dysentery of digitalis and yet neither in books on materia medica nor in those on tropical medicine had he seen any mention made of the use of that drug in that disease. Alcohol, in his opinion, did not compare with digitalis as a cardiac tonic and stimulant and in dysentery alcohol aggravated the symptoms; therefore the use of digitalis was an extremely important matter, not only on ordinary occasions but especially in the field where so many dysenteric patients might die from exhaustion.

Surgeon-Lieutenant-Colonel G. S. ROBINSON (Scots Guards) (retired) said that the freedom of the Japanese from dysentery was attributed to sanitation, but it was more probably due to their simple diet. The causes in relative importance were chill, water, and food.

Major J. B. BUCHANAN, R.A.M.C., said that the great difficulty of treating dysentery in war at the front was the fact that the patient was always on the move and often did not reach a stationary hospital for ten days or more, during which time it was difficult to carry out a suitable treatment by sulphate of magnesium or ipecacuanha.

Major FAICHNIE said that however important pure water might be they should look for additional causes for dysentery.

Major W. M. O'CONNOR, R.A.M.C. (Militia), read a paper on

The Military Medical Reserve Difficulty.

He said that the late war showed how important it was to be ready as it would be remembered that the War Office had to employ in South Africa alone between 400 and 500 civil surgeons and a large number of orderlies taken from various volunteer societies, such as St. John Ambulance Association, and it could not be said that they were altogether satisfactory. It would seem in time of war that there were three methods to choose from. The first was to keep the Royal Army Medical Corps up to war establishment, which would then, of course, necessitate a smaller reserve in time of war. The second was to have a large reserve of civil surgeons and orderlies from St. John Ambulance Association and kindred societies. The third was by encouraging the formation of a home or limited medical service, offering inducements to the best men of the profession to accept commissions. The first method was too expensive and the second was not one that could be encouraged, as it had been distinctly shown that a military training and a knowledge of military details were necessary in the army. The third method, and the only possible sound solution of the difficulty, was to have a thoroughly efficient and sufficient body of medical men and orderlies for small as well as great wars. It had been proposed to form a general service and a limited medical service, the officers and men of the former corresponding to the present Royal Army Medical Corps, who should receive good pay and allowances on account of the foreign service they would undertake. In Germany, Russia, Switzerland, Sweden, and other European States they had the most skilled and famous surgeons in the army. In peace time those surgeons were, in addition to their military duties, allowed to continue their private work in the neighbourhood of their military charge and thus those States could afford to employ a very large number of medical men in time of peace and so had a large body always ready for war. Great Britain could not very well act altogether like these States on account of the colonies and it was therefore necessary that there should be a well-paid and attractive foreign medical service, but if that home medical service were formed giving less emoluments and smaller pensions but allowing the officers to continue their private work as in the Indian Medical Service and in the countries named, there would be no difficulty, just as there was none in those same countries, in forming a very large body of military medical men, including the very best men in the profession, who in time of emergency also would be liable for service anywhere. These officers would be attached to home service battalions—in fact, their own territorial regiments if possible—and the auxiliary medical service would be absorbed under that new scheme. Their pay and pension would not be out of proportion to their services, as patriotism—and glory if they liked—should make them most willing to serve. To those who could not be given military duty, as their residence might make it impossible, Major O'Connor would give a retaining grant of £25 a year in addition to the pay of their rank during training or while serving.

Surgeon-Lieutenant-Colonel ROBINSON suggested that if the Army Medical Reserve were to be employed more freely in time of peace they might be used to train a reserve of men in nursing duties.

FRIDAY, JULY 28TH.

Surgeon-Lieutenant-Colonel ROBINSON read a paper on

The Feeding of the Soldier on Active Service.

He said that as to the food itself the quantity laid down was ample and during the recent war it was generally of good quality. Bread, however, should be issued whenever possible. It was such an important article of diet that men missed it greatly and would do anything to obtain it. Other nations appeared to attach great importance to it. A portable bakery should accompany troops and be made use of at every opportunity. A great deal had been written on the subject of drinking water, the difficulty being that men when thirsty would drink the water most accessible, no matter what its quality. The first thing to be done was to let the soldier realise that the constant drinking of tepid and dirty water was not only injurious but failed to relieve thirst. It was, however, to the cooking they must look to get the most good out of the rations which were sufficient and to insure that variety which appeared to be essential to the well-being of man. On active service there was a lamentable monotony in the meals provided. The almost universal practice consisted of cutting the meat into chunks, filling the kettle with water, and stewing the whole for two hours. But no matter how excellent those stews might be, a roast or baked alternative seemed almost a necessity and that appeared at present unattainable. A large portable oven on wheels would be a great boon, not only for obtaining variety in cooking but also for baking bread. One great additional advantage would be that cooking could be started before the destination was reached and so much time would be saved. A man was not a fully trained soldier if he could not himself turn out something tasty in the way of a supper. That was a matter to which more importance might be attached during training, especially at manœuvres. The soldier was too much accustomed to come back to a "certain place" and there to find his dinner waiting him. In the earlier part of the war men on outpost or other duty away from their companies were half starved by not knowing how to cook their ration of meat and flour. On that subject a quartermaster-sergeant of Royal Artillery, who was three years in South Africa, writes as follows:—"I found as cooks we were absolutely of no use. Often in getting over the country we could, and did, pick up growing vegetables, which, when cooked in with the meat ration, would have made excellent soup and stew. But we seemed to depend too much on the one man who was the regimental cook, whose qualification for that post was often that he had bad feet for marching or was not too handy round a gun and so was appointed cook! The meal (dinner) always consisted of the 'stewed type,' chunks of meat thrown in the oval 12-quart camp kettle, immersed in water, and left to cook for two hours or so. When served up the very appearance of it proved sufficient and even hungry men would not eat it. I have seen whole kettles full which have never been touched, the men preferring their biscuit and jam. A man who could concoct a savoury meal out of the ration was rare indeed, and all were anxious to secure him as messmate. The Bushmen and New Zealanders could prepare a meal—i.e., coffee or tea, with steak, chop, liver, &c.—and be sitting down enjoying it whilst the British soldier was looking for wood or an axe to chop it with." In regard to field hospitals in all cases fresh meat should be obtainable for those sick who required it, on requisition by the medical officer. Special biscuit should also be obtainable for men suffering from fever or bowel complaint as they were quite unable to make use of ration biscuit. Those made from arrowroot or fine flour could often be used, or better still some kind of rusk which would make into "bread-and-milk." Rice, so easily prepared and digested, ought also to be forthcoming. "Ideal" (an unsweetened form of tinned milk) should be provided for those who could not take the sweeter forms of condensed milk. Unfortunately, it was rather more bulky owing to its being less condensed. For convalescents tinned chicken and rabbit were the most appreciated and most suitable diet. Tinned butter was a luxury but the sick expected to get something a little extra when in hospital. Small ovens were furnished to field hospitals. A great difficulty, however, during the late war was in getting cooks. A larger number of orderlies and other soldiers should be specially trained as cooks. That matter seemed to have been taken in hand by the authorities since the war as a special section of the corps was now made up of qualified cooks. The committee appointed to report on these matters said that it was very desirable that all soldiers should be systematically taught how to cook their rations in the field, especially men of the Army Medical Service and the auxiliary medical services. The committee also attached great importance to the careful instruction of company cooks in camp cooking and considered that a good deal of irritation of the bowel was caused by half cooked or badly cooked rations on service. The connexion between that "irritation of the bowel" and camp diarrhœa, colitis, dysentery, enteric fever, and cholera was a very close one; and if by careful training, cooking, and dieting the preliminary cause of that irritation could be done away with the saving to the army and State would be considerable and amply repay the trouble taken.

Fleet Surgeon A. J. J. JOHNSTON, R.N., suggested that every man should take his turn as cook, so that on active service everyone would be able to cook.

Lieutenant-Colonel E. M. WILSON, R.A.M.C. (retired), explained the arrangements that were made for the teaching of cooking in the Royal Army Medical Corps and hoped that a larger number might be instructed in that most useful service.

Surgeon-Lieutenant Colonel ROBINSON said that universal instruction in extemporised cooking could only be dealt with by serving out the rations to groups of men during manœuvres.

Surgeon-Lieutenant-Colonel P. B. GILES (Volunteers) read a paper on

The Care of Soldiers' Feet.

He said that in all cases of deficiently developed arch there was one cardinal object to attain—viz., to get the arch properly established and maintained. It mattered comparatively little in actual practical treatment whether the metatarso-phalangeal joints and the phalanges were prehensile or were lifting factors or a composition of both, so long as the fact was accepted that the foot should be flexible and not rigid in walking and marching. That the foot should be flexible and not rigid in marching was proved by the success which had attended cases of insufficiency of the arch when treated by employment of extra work upon the metatarso-phalangeal joints as compared with that of "blocking up" the foot and so creating a system of walking with a rigid foot. Excessive development of the arch with a small heel, associated as it always was with more or less eversion of the foot, was a matter of great difficulty to correct. He had rarely failed to make good walkers out of those with deficiencies of the arch under proper training, but he had never been really successful with an over-developed arch accompanied with a small heel. It was not so generally recognised that the acridness of the secretion of the feet was a predominating factor in sore feet and that those who were afflicted with that secretion not only blistered easily but developed soft corns of a most intractable form. In regard to the artificial covering of the feet socks must be thick, of wool, and have natural-shaped toes. Cotton socks were fatal; they were thin, non-elastic, very absorbent, and with moist feet soon became a veritable sponge. Wool, on the other hand, could be made thick, was elastic, and when covered with perspiration would, if exposed to the air and sun, quickly dry, could be beaten and well rubbed if washing was impossible, and come out daily fairly fresh. Rags, bandages, and felt were frequently vaunted over socks, but his experience and observation with troops were against all those wrappings when used with laced boots. In such cases where blucher or riding boots were used and the foot was more or less rigid wrapping as compared with socks was on a par or even better because the back of the heel could be better protected. Boots should be large enough to give freedom antero-posteriorly as well as laterally, without being loose. The soles should be thick, the waist pliable, and the heels large and low, but the *sine quâ non* was that the inside of the boot must be cut straight and coincide with Meyer's line and not turn up at the toe. The upper should be soft and there should be no harsh seam at the heels. After each march there should be an inspection of the feet for the first few days by the medical officer, after which by the company officers, only cases of doubt or those requiring treatment being sent to the medical officer. The routine washing followed by pickling in a solution of salt and boric acid rendered the most moist feet safe. That treatment was far in front of ointments or grease of any kind, as even when well fortified with antiseptics grease had a tendency at the heat of the body to ferment and to create the very mischief which the remedies were used to prevent. Soaped socks were seldom of service because the soap being generally of a common kind was either too fatty or contained a large proportion of alkali.

Captain PEAKE discussed the importance of properly fitting boots and declared that the shape of the boot was of the utmost importance to the mobility of an army.

Lieutenant-Colonel WILSON emphasised the importance of the subject and urged that men should not only be able to use their rifles but also to walk upon their feet.

Lieutenant-Colonel J. J. DE ZOUCHE MARSHALL, R.A.M.C. (Vol.), communicated a paper entitled

Suggestions for First-aid Treatment of Fractured Thigh in Military or Civil Practice.

He stated that the object of the paper was the simplification of first-aid treatment of the injured in connexion with fractured thigh whether in warfare or in civil life. The "rifle splint," providing as it did perfect counter-extension, had been looked upon by all acquainted with it as an ideal remedy in such cases, but he had learned from army medical officers with large experience in the South African war that it was very seldom used in that campaign owing to the terror produced in the minds of the unfortunate patients at the mere idea of its complicated application in the hands of imperfectly trained men, of whom, unfortunately, hundreds had to be employed there as stretcher bearers. From what he knew of the splendid training of the non-commissioned officers and men of the Royal Army Medical Corps he had no doubt that a squad of them could with ease and expedition apply a rifle splint with the minimum of suffering to a patient, but how often did it happen that a Royal Army Medical Corps squad could be kept together in South Africa? Instead it was doubtless necessary to place one Royal Army Medical Corps "trained" man in charge of three others of "all sorts" to make up squads and Tommy Atkins was just the man to diagnose at a glance whether such bearers were up to their work or not. Hence the yells and screams that dismissed the "rifle splint" and compelled the transport of those cases from the field on a stretcher with little more "dressing" than a bandage or two around the stretcher to steady the body on it. If that was the case with one well-trained and three partially trained men it was awful to contemplate the effects of the efforts of one partially trained civil ambulance man and three totally untrained men to apply a "broom handle" and other splints, with about seven bandages, to a case of fractured thigh occurring in one of our streets or factories and their unrehearsed struggles to get their patient on to a stretcher. For that was the most that civil ambulance teachers could hope for—viz., that one of their certificated pupils might happen to be on the scene of such an accident and that the said pupil might be able to direct the movements of a few untaught men from the crowd. It stood to reason that in either case, military or civil, the treatment taught and practised should be of the simplest nature consistent with efficiency. The treatment in vogue of securing a long splint with several bandages involved so many liftings of the body and limb that the process, undertaken by amateurs, must be attended by much suffering, for, though a gentle method of introducing bandages beneath the body and limb was sometimes taught, it was seldom put into practice even at civil ambulance examinations and would doubtless be forgotten altogether in the flurry of an actual accident. In considering an effective treatment not involving all that tying of bandages around the body and limb Lieutenant-Colonel Marshall evolved the idea of taking the stretcher as it was and relying for the fixation of the pelvis of the patient on a roller perineal bandage attached to the upper handles and for counter-extension on bandages fixed to the patient's foot and lower handles. For that stretcher first-aid treatment of fractured thigh he claimed that it could be carried out expeditiously and painlessly; that it placed the limb in the best position for dealing with hæmorrhage in a compound fracture and for subsequent permanent treatment in hospital; that it reduced to a minimum the suffering and danger during transport caused by sharp spiculæ of bone injuring nerves and blood-vessels; and that by fixing the patient on the stretcher it enabled him to be carried up or down steep hills and did away with the risk of his being thrown off in case either of the bearers should stumble while carrying him "shoulder high"—a proceeding in much favour with eminent military surgeons, notwithstanding the warnings against it in text-books.

PSYCHOLOGICAL MEDICINE.

FRIDAY, JULY 28TH.

Dr. ROBERT JONES (Claybury Asylum) opened a discussion on

Prognosis in Mental Diseases.

Prognosis meant generally to foretell, foreshow, forebode, to predict, presage, or to prophesy what was likely to take place and the ability implied a power of foretelling the future by the correct interpretation of present signs. Prognosis when applied according to the principles of medicine was the judgment formed by the physician regarding the future progress and termination of any disease. The fate of the patient caused particular anxiety to the relatives in cases of mental disease and questions were asked such as "Is there danger to life?" "Will the illness terminate in recovery or death?" "Is the illness likely to be a long-continued one?" and "Will there be any permanent mental weakness left behind after recovery from the attack?" It was of the utmost importance that a correct answer should be given, for the family might have to bear the burden of the care and treatment of the insane person for a considerable time, for of all ailments insanity was one which was costly to nurse and required time for its treatment and recovery. The formation of a correct prognosis required experience, skill, and insight into the nature of the disease, as well as knowledge of its cause and origin. The peculiar constitution of the patient, the general powers of recuperation, the soundness or tainted neurotic quality of his parentage, the actual form or kind of insanity he had developed, and the circumstances in which that development had been reached—all these were points for careful thought and judgment. The age and sex of the patient, the epoch of life—puberty, adolescence, pregnancy and the puerperium, the menopause and old age—all had to be considered in prognosis. External influences also modified the disease and in this category were included access to pure air and sunshine, abundant supply of good nourishment and facilities of nursing, there being for the individual as well as for organised society a law of relation of mental health to environment. Insanity in whatever form it affected the individual shortened life; the average rate of mortality of the insane population of Great Britain was six to seven times that of the sane general population. In European and American asylums the official statistics bore out the same conclusion as to the high death-rate of the insane. Thus the average annual death-rate in these asylums was 8 to 12 per cent. of the average number resident—a proportion more than six times that prevailing in the general population. Dr. Jones estimated that of 100 persons attacked with insanity 30 recovered and remained well, while the rest died or passed into chronic dementia or partially recovered to recur again and finally lapsed into dementia. Three out of ten patients who developed insanity therefore recovered and remained sane for the rest of their lives; seven died insane sooner or later. Complete recovery with full immunity against recurrence was rather rare and exceptional. They were thus justified in looking upon insanity as a diseased state which shortened life and upon the insane as a class which was marked by considerable physical inferiority and lowered vital resistance to disease. The special proclivity of the insane to pulmonary tuberculosis also rendered prognosis grave in both the congenital and "acquired" insanities. A higher percentage of girls than boys recovered from the insanities and minor psychical disturbances of adolescence, the period of 18 to 25 years of age. Most cases of insanity did not come under treatment during the early manifestations of mental disorder. There were other factors, such as the long-continued action of determining causes, as alcoholism, plumbism, dissolute living, years of misery and destitution, which also entered into the question of prognosis. In young children the occurrence of insanity was of very bad prognosis and the presence of syphilis or epilepsy rendered the prognosis worse. General paralysis and acute delirious mania were of fatal prognosis, the mortality reaching to nearly 100 per cent. Among the insanities proceeding from congenital or embryonic anomalies of brain development were paranoia, folie raisonnante, the insanity of cranks and eccentrics, and epileptic insanity of the young which were found to be incurable. Neologisms—the habit of inventing words and phrases of mystic meaning—and verbigeration were of bad prognosis. A good environment, concluded Dr. Jones, was potent for healthy development in cases where hereditary taint was not overwhelmingly bad and he thought that every effort should be made by parents and teachers to bring up the infant and young child in a morally and physically healthy environment.

In the discussion which followed

Dr. A. R. URQUHART (Perth), the President of the section, expressed his general concurrence with the views of Dr. Jones as enunciated in his paper which was full of scientific and practical interest.

Dr. T. B. HYSLOP (London) said that in senile insanity the prognosis depended more on the condition of the patient's arteries than upon the mere age. His experience with regard to adolescents was that the "exhaustion psychoses" were coming more into prominence of late years. He considered that the study of the charts of insomnia was a valuable aid to prognosis and that in some cases a fairly definite prognosis was possible to be formed as to curability.

Dr. W. LLOYD ANDRIEZEN (London) argued that death-rates in asylums should be calculated on the yearly census—i.e., the average number of patients resident per annum—and not on so inconstant and fluctuating a quantity as the yearly admissions. He agreed with the estimate that 70 per cent. of recoveries might follow early admission and treatment but thought that many recurred later. Paranoia and the degenerative psychoses were incurable, because the underlying anomalies of cerebral development began in pre-embryonic life and continued after birth. He concluded by stating that the prognosis in insanity was worse than Dr. Jones's estimate of it, as his own investigations brought him to the conclusion that out of 11 persons who developed insanity nine ultimately died insane and that of the remaining two but one recovered perfectly.

Dr. D. BOWER (Bedford) said he concurred in the view that insanity shortened life but did not believe that tuberculosis was more frequent in asylums than amongst the general public. Where hereditary tendency to insanity existed patients became insane from slight causes but they readily recovered. Such recoveries were, however, followed by frequent recurrence under new stresses.

Dr. L. R. OSWALD (Glasgow) said that to forecast the date or time of recovery was very difficult. He believed that acute mania was more often recovered from than was melancholia proper and that in senile cases a healthy condition of the arteries was of favourable significance.

Dr. T. JOHNSTONE (Leeds) regarded tubercle as the result of "a weakening of the peripheral nerves," and gave instances illustrating this view from influenza and its sequential broncho-pneumonia and cardiac failure. Cases of general paralysis followed mild syphilis. Prognosis in senile insanity might be good *quâ* insanity but was bad as regards life.

Dr. FLETCHER BEACH (London) agreed that the earlier the age of onset of insanity the worse the prognosis, especially when insanity appeared in early childhood. Congenital imbeciles were, he thought, capable of manual training and of increase in intelligence, as was proved by the experience of the special centres for their education under the London County Council. Epilepsy shortened life only when the epileptic was insane but he did not think it was true with regard to sane epileptics such as formed the "colony" at Chalfont St. Peter. The conditions there were favourable to lengthen rather than to shorten life.

Dr. JONES then briefly replied to the comments made, and questions raised, on his paper.

Dr. L. D. H. BAUGH (Glasgow Asylum) read a paper on

Confusional Insanity.

He believed that in many cases they were due to the toxæmias of sepsis, acute specific fevers, alcohol, and the puerperium. The material used was collected from 47 cases which had been under his care and observation during the past three years at the Glasgow Asylum. The cases showed a fairly definite group of symptoms, psychical and physical. The mental symptoms were a purposeless resistiveness, confusion, absence of emotion, and a facial expression like "embarrassment." The physical symptoms were cutaneous disturbances of circulation, leucocytosis, the presence of indoxyl in the urine, and the special symptoms proper to the physical ailment. Dr. Baugh then proceeded to deal with these symptoms *seriatim*. Purposeless resistiveness, he said, was found in all the 47 cases; emotion was absent in 32 cases, and in the remaining 15 it was only occasionally present and that merely for short periods. These figures regarding the condition of emotion showed a great difference from those of ordinary mania and melancholia in which an emotional state was always a dominant factor. Embarrassment and the fixed facial expression were present in all the 47 cases. The presence of indoxyl in the urine was tested for only in the last 19 cases and found to be present in excess in all. Leucocytosis to the extent of over 9000 per cubic millimetre of blood occurred in 24 out of 33 cases which were examined. Over one-sixth of the total cases were considered to be the result of a toxin acting directly on an unstable nervous system, and in these a preliminary mental confusion led to a febrile or post-febrile delirium; symptoms of auto-intoxication, judged by indoxyl, were not present until after delirium. The probable proportion of cases due to toxæmia was reckoned to be more than one-sixth of the total number. In all the cases there was a definite causal relationship between the physical and the mental phenomena, the constant symptoms being a persistent vaso-motor condition, leucocytosis and indoxyl in the urine, mental confusion and absence of emotion, a fixed facial expression, and purposeless resistiveness, which completed the picture of what he would call a definite clinico-psychological type of insanity.

The PRESIDENT congratulated Dr. Baugh on the excellence of the paper and the practical insight that it displayed in dealing with an obscure form of insanity. The proceedings then terminated.

TROPICAL MEDICINE.

FRIDAY, JULY 28TH.

Mr. JAMES CANTLIE (London) opened a discussion on

Sprue.

He stated that up to the present no micro-organisms had been proved to be causative of sprue, although organisms had been described in connexion with the investigations of the disease. Apart from the question of micro-organisms sprue was a disease of persons who had resided for a considerable time in certain tropical countries, more especially the Malay Peninsula and Archipelago, Indo-China, Southern China, Southern India, and Ceylon, but typical cases of the disease occurred in mid-China, Japan, and possibly other countries to the north of the equator. Atony or physiological atrophy of the liver was an early, perhaps the earliest, condition in all cases of sprue and the stomachic and oral troubles usually preceded the intestinal flux characteristic of the disease. Persons who had dwelt for some years in an area where sprue prevailed were liable to a form of stomatitis accompanied by tender tongue and ulcerative patches on the inside of the lips and cheek and on the gums, tongue, and palate. Repeated attacks of this condition of the mouth were prevalent, as many as three or four or more occurring during 12 months; attacks lasted about three weeks and these in time might or might not be followed by the intestinal flux typical of sprue. When established there was no possibility of confusing sprue with any other of the intestinal lesions; the tenderness of the mouth, the bulky frothy pale morning stools, the loss of weight and the anæmic condition of the patient formed collectively a group of signs and symptoms indicative of the nature of the ailment. The treatment consisted in bringing about the physiological activity of the liver. This could not be done by milk and Mr. Cantlie stated that at the second meeting of the Section of Tropical Medicine in 1898 he had declared against the treatment of sprue by milk and subsequent experience had still further confirmed him in his view. A milk diet (milk and nothing else) would certainly in time check the diarrhœa and so would certain medicines, but this did not cure the disease. The fæces of a patient suffering from sprue and taking milk were not in any sense fæcal, the motions neither smelt nor looked like fæces and consisted of the almost pure curd of the milk passing quite undigested. The patient lived on the whey extracted from the milk and rejected the curd in a cheesy mass—the so-called solid stool of the patient suffering from sprue when on milk. By a milk diet the liver did not increase in size and no true bile appeared in the stools On giving meat—a wholly meat diet—the stools immediately showed the presence of bile, the liver increased in size rapidly, and the aversion to food disappeared. When the patient was very weak and a fatal issue threatened fresh meat juice, raw or lightly cooked, might have to be given every five or ten minutes for a day or two, but afterwards the interval of feeding grew gradually longer until two or three hours might intervene. After a day or two beef jelly, beef tea, calves' foot jelly, scraped beef, pounded beef, and minced beef might be added as the patient's condition improved. For a patient taking meat five ounces of pounded beef were given morning, noon, and evening, with jelly between each meal, and freshly made weak tea, rice tea (rice put into the oven, roasted brown, and infused in boiling water), and rice water (water in which rice had been boiled) for drink. The good done by meat was partly no doubt due to its freshness, as sprue was seemingly allied in its nature to scurvy and the fresh juices of all meat or fruits were beneficial. In this manner could be explained the beneficial action of strawberries and other fruits. Medicines beyond an occasional dose of castor oil were uncalled for, although Dr. Begg found great benefit from santonin. He (Mr. Cantlie) had also found santonin useful. Cases of sprue arose in England many years (even seven or eight) after the patient had returned from the tropics.

Lieutenant-Colonel **ANDREW DUNCAN**, I.M.S. (London), read a paper on

Hill Diarrhœa.

The disease appeared most frequently amongst persons in India leaving the hot plains for change in the hills. Colonel A. Crombie held that hill diarrhœa was due to the presence in the digestive tract of some organism which multiplied there, devoured the colouring matter of the bile and perhaps other constituents, and so allowed of rapid fermentative changes in the intestine. Lieutenant-Colonel Dyson, I.M.S., considered that hill diarrhœa occurred in those hill resorts where the geological formation contained schist; in hill stations resting on sandstone the disease did not occur. The mica from the schist caused irritation of the alimentary canal, fermentative changes supervened, and a micro-organism developed, causing diarrhœa. In hill diarrhœa there were no oral symptoms nor was there any diminution of liver dulness as in sprue. The treatment advised by Colonel Crombie was in mild cases from 12 to 15 grains of pepsin. Ingluvin or lactopeptin was given two hours after food which must consist of milk. In severe cases five ounces of peptonised milk were given every two hours day and night and drachm doses of liquor hydrargyri perchloridi 15 minutes after a meal. This treatment, combined with rest in bed, would prove successful in a few days.

Dr. L. W. **SAMBON** (London) considered that sprue was undoubtedly due to a micro-organism and that the long incubation period which at times precedes the manifestation of sprue was by no means unique.

Dr. **DAVID J. GALLOWAY** (Singapore) also considered that sprue was due to a micro organism. He had no doubt of the infectious nature of sprue and cited numerous instances of the wife infecting the husband and *vice versâ* and similarly other members of the family. He objected to the term "sore tongue," as the tongue might be seriously affected without pain. The whiteness of the stools was likely due to the type of fermentation which took place in the intestine. Anæmia was a very pronounced symptom of sprue. He considered that drugs played a useful part in the treatment of sprue and he believed that intestinal asepsis was highly beneficial. Milk treatment had in his hands given most satisfactory results.

Dr. **ALBERT J. CHALMERS** (Ceylon) thought that sprue was rarer in Ceylon than it used to be. The treatment he had found most useful was "liver soup" (an old treatment in Ceylon) combined with intestinal disinfectants.

Dr. J. **CAMPBELL GRAHAM** (Sumatra) stated that sprue was not common in Deli, Sumatra. Europeans were proportionately more often attacked than were the Javanese, but as most stomachic derangements were termed sprue in Sumatra and Java there was much confusion between real sprue and other troubles. He gave a summary of Dr. A. van der Scheer's paper on Indian Sprue which he had translated and condensed. This authority considered that the signs and symptoms of sprue were due to abnormal digestive processes going on in the bowel which were indicative of an enterogenous auto-infection; he also, as stated by Mr. Cantlie, considered suppressed appendicitis a potent agency in the causation of sprue and proposed removal of the appendix as a means of cutting short the ailment.

Dr. F. O. **STEDMAN** (Hong-Kong) believed in the benefits of the milk treatment in many cases of sprue with an intestinal antiseptic such as beta-naphthol. A form of diarrhœa which occurred in Hong-Kong after the first heavy rain was probably due to micaceous particles in the water which was slightly opalescent at that period of the year.

Dr. C. F. **HARFORD** (London) alluded to the seriousness of diarrhœa from whatever cause in the tropics and advised that more serious attention should be given to the subject of early intestinal flux. Intestinal derangements were the cause of a large number of persons being invalided in hot countries and our present knowledge of the pathology, prophylaxis, and treatment of these ailments was largely of an empirical nature. He would advise the schools of tropical medicine to give more attention to the diseases of the alimentary canal than had been hitherto done.

Mr. J. H. **EBELL** (Colombo, Ceylon) referred to the liver soup treatment of intestinal flux in Ceylon and to the use of toddy, the fermented juice of cocoanut palm, as an effective means of treating sprue.

Dr. **JOHN HUTSON** (Barbados) stated that what was regarded as thrush in Barbados was really sprue. Pellagra often complicated the disease in Barbados. A strict banana diet, he had found, cured cases of sprue in from three to four weeks and small doses ($\frac{1}{100}$th of a grain) of corrosive sublimate frequently repeated seemed to be beneficial.

Major G H. **FINK**, I.M.S., said that in his experience in India the sterilised milk treatment was successful. He was inclined to agree with the idea that mica in the drinking water played a part in the causation of hill diarrhœa. He advocated more extensive investigation of native drugs and remedies.

Dr. W. L. **STRAIN** (Brazil) stated that he could not remember during a 20 years' experience ever having seen a case of sprue in Brazil, although intestinal troubles were rife. When diarrhœa took the fermentative form with pale, foul-smelling stools the use of some form of ox bile had proved highly beneficial and a pill containing ox bile made by Erba of Milan was largely used in S. Paulo for most forms of diarrhœa.

Lieutenant Colonel **DUNCAN** stated that he believed that milk could cure sprue but the treatment recommended by Mr. Cantlie was more speedy and developed the liver in a way which milk never could.

Major **FINK** contributed a paper entitled

The Mosquito Malarial Theory and Malarial Prophylaxis from the Latent Phase.

This paper, already published in pamphlet form, dealt with the constant source of malarial fever in tropical countries as opposed to the accidental. Major Fink did not consider that the constant source of malarial fever lay in the mosquito, while even as an accidental cause it occurred in perhaps from 5 to 10 per cent. of the cases by the mere bite and nothing else.

Dr. H. HEARSEY, principal medical officer, British Central Africa, contributed a paper on

Malarial Fever in British Central Africa.

He stated that in British Central Africa the forms of malarial infection were the tertian and the æstivo-autumnal. The tertian type was the commoner and was of either the single or double tertian variety. The tertian forms were amenable to quinine, whereas the "multiple" infection forms and æstivo-autumnal fever were generally resistant to quinine. Dr. Hearsey was inclined to regard hæmoglobinuric fever as a pernicious form of the æstivo-autumnal variety and was inclined to attribute the disease to (1) anæmia due to long-standing malaria, rendering the hæmoglobin more unstable and permitting of its liberation on slight provocation; (2) a sluggish condition of the liver; and (3) the presence of nephritis. In the treatment of hæmoglobinuric fever quinine must not be given. A mixture of bicarbonate of sodium (ten grains) and perchloride of mercury (30 minims) every two or three hours served to prevent suppression of urine; an injection of half a grain of morphine helped to control vomiting; nourishment was maintained by the ordinary invalid food and drink, and brandy was used to the exclusion of other stimulants.

Dr. ST. GEORGE GRAY (Sierra Leone) sent a paper entitled

Notes on the Method of taking Quinine in the Prophylaxis of Malaria.

He was of opinion that a person who took five grains of quinine daily was pretty sure to escape malarial fever; those taking three grains daily, however, were more frequently attacked. These quantities in time, however, were liable to cause deleterious consequences. Dr. Gray suggested that as the life cycle of the parasite was about 48 hours in Sierra Leone and that fever developed eight or ten days after infection a full dose (10 or 15 grains) of quinine should be taken on two successive days with an interval of eight or nine days before the next two doses were taken; by this plan the parasites would always be destroyed before they could cause fever, and it presented several advantages over the daily or alternate day's dose of quinine.

Mr. CANTLIE contributed a paper on

Recent Cases of Abscess of the Liver.

He reported two cases of abscess, one in a patient from Brazil and the other in a patient from India; in both cases the pus was on the upper part of the liver; both were cured in about three weeks by the large trocar and cannula and syphon drainage plan of treatment. In two other cases, both from India, the pus had infiltrated and destroyed the whole of the lower lobe of the right lung; both patients died in spite of free drainage by removal of ribs and packing the pleural cavity with gauze. Mr. Cantlie also gave notes of a case of abscess of the liver in which gangrene of the right half of the liver resulted in all probability from an infective embolus in the right branch of the portal vein. A sixth case referred to was that of an abscess in the liver in a man who had never been out of England. The pus in this case showed the abscess to be due to streptococcal infection; the patient, after the abscess was tapped and drained, had a prolonged period of high evening temperatures, but ultimate recovery now seemed probable.

Dr. ALDO CASTELLANI (Colombo, Ceylon) sent a paper on

Diarrhœa from Flagellates.

In cases of diarrhœa which came under Dr. Castellani's notice in Ceylon he found flagellates in the evacuations. Methylene blue was very poisonous to blood flagellates (trypanosomes) and a solution of this drug proved to be equally so to intestinal flagellates in laboratory experiments when injected per rectum. The flagellates present in the fæces could be divided into three groups:—(1) large, pear-shaped bodies, from 18 to 25μ in diameter, possessing an undulating membrane, two or three flagella at one pole and a short flagellum at the opposite pole, with indistinct nucleus and several apparently non-pulsating vacuoles; (2) small roundish bodies from 8 to 12μ in diameter, no undulating membrane, with one flagellum only but no vacuoles (these were probably cercomonata); and (3) roundish non-motile bodies from 15 to 20μ in diameter, staining blue by Romanowsky's method, with sometimes a few vacuoles. Associated with these flagella in one case were found the protozoal parasite, lamblia intestinalis, and a protozoon which provisionally Dr. Castellani termed entamœba undulans. Infection of laboratory animals gave negative results. Several observers had described cases of diarrhœa due probably to flagellates, but hitherto the tendency had been to believe that the parasites were harmless; from the fact, however, that diarrhœa occurred when the flagella were numerous and disappeared when the flagella were in minute numbers a certain probability as to cause and effect would seem to be indicated.

Mr. J. TERTIUS CLARKE (Perak) read a paper on

The Present Theories of the Cause of Beri-beri.

He dealt with the subject under the following heads: (1) The arsenical theory of Ross; (2) the "rice" theory; (3) the "place" theory; and (4) the acute or subacute infectious disease of Dr. Hamilton Wright. Mr. Clarke tried to infect monkeys by causing bugs from the beds of patients suffering from beri-beri to bite monkeys but the results were negative. Moreover, ward attendants did not contract beri-beri as a rule. He related one instance where a Chinaman acted as ward attendant in beri-beri wards for nine years and never contracted the disease, yet when he went to do tin-mining he went back to hospital in a few months with beri-beri. Still it was a fact that the disease might infect a "place," might disappear from that "place," and disinfection might apparently prevent further cases. No Tamils acquired the disease though the rice supplied to them was actually the same and cooked in the same vessel with the rice supplied to Chinese. It might be worthy of note, however, that the Tamils always took a quantity of pungent curries and essential oils with their meals whereas the Chinese seldom did.

Dr. HAMILTON WRIGHT (formerly of the Federated Malay States) believed that beri-beri was due to a specific organism which gained entrance to the body *viâ* the mouth, that it developed and produced a toxin chiefly in the pyloric end of the stomach and duodenum, and that the toxin being absorbed acted atrophically on the peripheral terminations of the afferent and efferent neurons. Further, that the specific organism escaped in the fæces and lodged in confined places through accident or the personal habits of those affected by the disorder, and that in the presence of congenial meteorological, climatic, and artificial conditions of close association from overcrowding, the organism became virulent and gaining entrance to the healthy body in food, &c., contaminated by it gave rise to an attack of the disease. The fact that the germ remained so closely local could, he thought, be explained by its being at once destroyed by the action of direct sunlight or that the presence of carbon dioxide or some other gas was necessary for its virile development. It seemed from his observations that the active stage of the organism in the body was between three and four weeks. He based this estimation on the facts that the preliminary feeling of oppression in the epigastrium ceased at the end of about three weeks and that it was rare to find the lesion of the gastric and intestinal mucosa in cases of only six weeks' standing.

Dr. R. T. HEWLETT (London) contributed a

Note on Two Cases of Beri-beri Paresis treated with Injections of Strychnine.

After a course of strychnine, iron, and arsenic combined with galvanism little or no progress in the amelioration of the paresis was noticeable but when one-fiftieth of a grain of strychnine was administered subcutaneously twice daily a rapid improvement was observed in a week's time.

Dr. STEDMAN gave details of an outbreak of beri-beri which occurred on board a sailing ship ten days out from New York in which the contagious nature of the disease seemed to be pronounced.

Dr. STRAIN had seen sporadic cases of beri-beri occurring in women after childbirth in Brazil.

The PRESIDENT of the section (Professor R. W. BOYCE), Major FINK, Dr. GALLOWAY, Lt.-Colonel DUNCAN, and Mr. CANTLIE also joined in the discussion.

MOTOR AMBULANCES. — The Metropolitan Asylums Board, at its meeting on August 5th, accepted the tender by Messrs. James and Browne, Limited, of 395, Oxford-street, London, W., to supply a chassis suitable for an ambulance carriage.

THE LANCET.

LONDON: SATURDAY, AUGUST 19, 1905.

Lord Roberts on Imperial Defence.

It is not easy to exaggerate the gravity of the position about which Lord Roberts warned the London Chamber of Commerce at a special meeting held at the Mansion House on August 1st. The great general declared that this nation, in point of readiness and efficiency, is at the present time altogether unprepared for war in support of our Imperial interests against any great military power and that our position not only has not improved since the time of the South African campaign but has, indeed, become worse. The successful issue of that war was, he added, in no small degree attributable to the relative inferiority of our enemy in numbers, discipline, and organisation, so that the same results might not have occurred had we been fighting against one of the armies of a European power. Looking back on all that took place during that anxious period and considering that during the South African war this country was left absolutely denuded of all regular troops we realise in what a humiliating and even dangerous situation we were then placed. We have no desire to dwell on the dark days of our South African defeats or on the various commissions of inquiry with their saddening outcomes. So far as these investigations disclosed the medical and sanitary shortcomings of the campaign, with their real or alleged causes, they were fully discussed by us at the time, so that we may assume that our readers are acquainted with their significance. But Lord Roberts's message to the country can only be estimated at its full value by those who can recall to their minds the history of the South African war. And surely no one who has his country at heart can have forgotten it.

Lord Roberts, holding the views that he does on the need for the improvement of our Imperial defence, considered it his proper course in the first instance to give expression to them in the House of Lords. This he did, it will be remembered, recently, but it was, as he said at the Mansion House, to the country generally that he desired to appeal. It was indeed time that someone in authority should strive to rouse the nation from the state of lethargy into which it has fallen and this has now been done in a bold and comprehensive spirit both in regard to the strictly combatant and the medical branches of the service. Lord Roberts, who has been a man of war from his youth up, fully realises that we cannot always rely upon a pure policy of diplomacy and conciliation for procuring us peace. "When a strong man armed keepeth his palace his goods are in peace"; in other words, peace can only be made sure by readiness for war. This security, Lord Roberts declares, can only be obtained for our country by introducing some form of universal training and service for home defence. By the provision of such a system, in the course of time Lord Roberts believes that such a state of readiness and efficiency would be reached as would put it outside the interests of any foreign power to risk war with us, while we could meanwhile avoid the rigid system of army conscription adopted by our more strictly militant rivals. All the points raised and discussed by Lord Roberts in the course of his long speech are based upon the need in this country of organised preparation for war, and we may say at once that it not only seems to us right that there should be some system of obligatory military training on the part of the youth and young manhood of this country but from a medical standpoint we hold that it would prove highly beneficial. The effect of a military training, even of the most modified sort, is to strengthen the character and manliness of a people; health and physical vigour improve, while discipline tends to develop the intelligence, to increase alertness of thought and action, and to inculcate a habit of prompt obedience—all of which are undeniably good, valuable, and useful qualities. We have recently had some illustrations of the military material ready to hand and available at our public schools. Instruction in drill and the use of a rifle no boy dislikes, while camp life is keenly relished by every lad of ordinary spirit and he is physically and morally the better for a spell of it. The hatred of so-called "militarism" in this country is too easily turned into an excuse for shirking patriotic duty. We are not advocating Napoleonic conscription or, indeed, conscription at all as it is understood in France or in Germany. Such conscription may be our lot, though the drawbacks to it are undoubted. But for the present so extreme a course is not in question. But the youth of our nation want to be instructed in military discipline and the rudiments of military life, and every effort on the part of our military and educational authorities to arrive at this result will have the hearty support of the medical profession.

We hope that what Lord Roberts has to say about the Army Medical Service will be carefully read and studied by all. It will be seen that the late Commander-in-chief describes the exceptionally difficult and adverse conditions with which the medical officers had to deal and that he vindicates them from all blame in connexion with the lamentable occurrences and deficiences which were brought to light in the course of the South African campaign. But have we been taught by the sad experiences which we gained there and by the object lesson which we have had elsewhere? Are we better prepared for sending large forces into the field satisfactorily equipped for the prevention of disease? Lord Roberts, it will be seen, says that we are not much better off at present as regards our medical requirements than we were in 1899. In that case, whatever may have been the proposals of the Advisory Board, we have still to see the effect of them. The present unsatisfactory and chaotic state of military affairs demands a statesman who can take a grip of the whole subject. The means and the material at the disposal of the British empire are the envy of other countries, so that it ought to be possible to organise a scheme of Imperial defence and medical aid in war in which this country and her colonies could take a coöperative share and responsibility.

School Legislation and the Demands of Hygiene.

IT is certain that none of those responsible for the introduction of compulsory education into this country foresaw all the developments which would ensue as necessary adjuncts of this system. If we force all children to attend school we are compelled to take all possible steps to secure that they shall be exposed to no avoidable risk in so doing. Hence arises the need not only for careful inspection of school buildings to see that they conform to the requirements of modern sanitary science but also for examination of the children themselves to insure that they are in a fit state of health to profit by the teaching provided for them and to guard against the introduction of infectious diseases into the schools. The risk of the spread of such maladies among children who are crowded together for purposes of instruction has often been pointed out and is, no doubt, real enough; yet it is not impossible that an undue burden of blame has been laid upon school life as the main factor in the spread of epidemics. Such, at least, is suggested by the results of an important research carried out by Dr. MYER COPLANS and embodied in a report made by him to the Gloucestershire education committee, a report to which we have previously made reference in these columns. In the area to which the report refers a very large proportion of the infectious diseases special to children occurred in those who were not yet of school age, being spread by home conditions, and Dr. COPLANS points out that only a comparatively short period of time is actually spent at school, amounting to about 51 full working days, or one-seventh of the whole year—"the remaining six-sevenths are passed beyond the ken or control of the education authority." Opportunities for infection at home and in the course of play are plentiful and must not be overlooked. Indeed, it is even doubtful policy in Dr. COPLANS's opinion to close schools in the presence of an epidemic, since such a measure results in increased association among the children elsewhere without the supervision which is possible at school. We must, on the other hand, remember that the conditions within a closed building such as a school, with only moderate ventilation and with close personal contact, are more favourable for the transmission of contagion than those prevailing during outdoor play, so that it is difficult to acquit school life of the responsibility for much of the infective disease arising among children. If this is true of the zymotic maladies it is even more certainly the case with such grosser forms of parasitic disease as pediculosis. The complaint of parents who strive to keep their children clean and respectable is always that association with infected individuals at school is so constant that their best endeavours are futile. The prevalence of this evil is sufficiently proved by the figures supplied by Dr. COPLANS. Out of 6652 children examined no less than 908 were unmistakably suffering from the presence of vermin or their eggs; and as it is easy to overlook a few nits in a thick head of hair it is probable that these figures are rather short of the actual truth. The proper course to be adopted for eradicating this evil is not quite clear in the present state of the law. A child can, indeed, be excluded from school on account of the existence in him of infectious disease, but there is unfortunately no very satisfactory means of insisting upon the parents taking adequate steps towards cure at home. Continued failure to apply the remedies needed might, perhaps, constitute "neglect" of the child in the eyes of the law, and we have heard of instances in which the Royal Society for the Prevention of Cruelty to Children has brought pressure to bear upon refractory parents with satisfactory results, but some more reasonable machinery than this is required. If teachers notice cases of the disease at school something may be done to prevent its spread to others by making such children sit at separate desks; and for this purpose it is necessary to provide a certain number of desks fitted for the use of only one scholar at a time; indeed, the ideal state of affairs would be the provision of such a desk for each child in the school. It is needful further to bear in mind that the cloakroom may be a source of infection as well as the classroom, and to exercise some supervision over the garments as well as over the persons of sufferers from this complaint.

A second point of much interest, which is brought out in Dr. COPLANS's report, is the unsuitability of the clothing of many children in our schools. Among the children whom he examined this was most notable in the cases of the infants and of the girls, the former being swathed in a multitude of garments, sometimes as many as eight layers thick, which must necessarily be hot and cumbersome and interfere with the free movements of the limbs; while the girls were victimised, like their elders of the same sex, by the use of corsets. These were often the cast-off appliances of their mothers or elder sisters and were seldom well-fitted to the actual wearers. The girls suffered also from the clumsy construction of their outer dresses, for it was found in many cases that they were unable to stretch their arms above their heads without tearing their frocks. This may seem a small matter but in view of the importance now rightly attached to physical exercises and drill such ill-adapted clothing is seen to be a serious impediment to proper development. Nor is the remedy easy to devise, since it is not part of the duty of the educational authority to instruct the parents of the children in hygienic dressmaking. Probably the evil will work its own cure and the trouble involved in mending the rents produced by school drill will impress on the mothers of the girls the need of supplying them with more suitable costumes. The boys examined by Dr. COPLANS were apparently better off in respect to their attire but were cumbered with boots of excessive weight. Perhaps part of the clumsy gait noticeable among the youths of our lower classes may be traced to this peculiarity of foot-gear during their boyhood. Slight defects in the sight and hearing of children are now recognised as accounting for some cases of apparent mental backwardness and on these points many recent observers have written in our columns and elsewhere Whether it is the case that ocular defects are more common than they used to be or whether it is only that their existence is recognised and treated now, whereas formerly they passed unnoticed, certain it is that errors of refraction are very commonly found when looked for among children at school and that correction of these errors has often a most beneficial effect upon the health of the little patients. One of the most important duties of the medical inspector of a school consists in the detection of such cases. Still more conspicuously associated with signs of mental defect is the existence of deafness, and children who are found to be backward at school, while they are reported by their parents to be bright and intelligent at home, may often be found to suffer from this malady. At home familiarity with what is probably required from them takes the place of accurate hearing, while at school the inability of comprehension passes for inattention or stupidity. The frequency of aural discharges among the children of the poor is only too striking to anyone who has worked in the out-patient department of a children's hospital, and in many cases the condition is lightly regarded by the parents and submitted to no treatment. It can hardly be doubted that many cases of deafness might be prevented by timely remedial measures and now that general attention has been drawn by many authorities to the importance of aural lesions, and to the train of serious consequences that may ensue from them in later life, it is to be hoped that teachers as well as medical officers will be on the alert to recognise the dangers and to insist upon proper medical care for the child.

The benefits of medical supervision are well brought out by a supplementary report made by Dr. COPLANS, in which it appears that an examination of children in the same schools for a second period of six months revealed an improvement in the number of infectious ailments of over 50 per cent., while the non-infectious maladies also showed a decline, though not quite to the same extent. With many other points of interest contained in the report in question, such as the proper lighting of schools, the type of desk advised, and the provision of paper and pencils instead of the old-fashioned slate, we have not space to deal here. We can only hope that the importance of the investigation here carried out will be recognised and that other education authorities will follow the good example of Gloucestershire in appointing efficient inspectors to the schools under their care and, in making their reports available for general information. In this way a valuable body of statistics will be compiled, and we may hope that the charge now levelled against our schools with only too much truth in a considerable number of instances—that they are responsible for more physical harm to some of the children than they confer mental benefit—will become a thing of the past. Our schools should instead become the means of diffusing a knowledge of the elementary laws of hygiene and should act as nurseries for a race of "good animals." For not the least materialistic among us can deny that it is "good animals" properly trained who become good citizens.

The Murri-Bonmartini Trial.

"INTELLECT, reinforced by culture," said an Italian statesman the other day, "is never lacking in Italy. What you miss is Character." This saying, of one who knew his compatriots well, has had striking illustration in the tragedy on which the curtain has just fallen in Turin—a tragedy in real life enacted in the "Mother City of Universities" by performers who, except the subordinates, were as intellectually and educationally developed as they were morally debased, and whose social activity, often as able as it was effective, stands in glaring contrast with the depravity of their *vie intime*. There is no need to recapitulate the sordid and sanguinary details. Judicial methods in Latin countries are so contrived that, long before the "juge d'instruction" has prepared his indictment, the minutest details of the *res judicanda* are public property—with the result that sides are taken in the interests of either party and that (as in the case now brought to a conclusion) it is impossible to impanel an unprejudiced jury in the locality where the incidents took place. Three years of judicial "preliminaries," three years of unwholesome curiosity fed by "information" more or less authentic, three years of suspense for the accused in prison and of abortive attempts to find and to fix the scene of trial, make the MURRI-BONMARTINI case only too typical of the administration of justice in the Italian kingdom. Justice, however, though moving *pede claudo*, as the poet puts it, has at length overtaken the guilty, and Bologna, the seat of a university and the centre of much that is most enlightened and progressive in Italy, has just seen two of her professional sons consigned to a living grave and two others of her citizens erased from the roll of society, as actors, primary or secondary, in a crime exceptionally horrible even in the Italian "Cronaca Nera." Signor TULLIO MURRI, the actual murderer of his brother-in-law, Count BONMARTINI, is an "avvocato" or barrister whose university record and professional ability marked him out for an honourable career; in fact, at an age unusually early he held a place in the communal council of Bologna. His sister, the Countess BONMARTINI, was the pride of her family for intellectual gifts and for accomplishments more than feminine and she, too, was active in Bolognese society as a promoter of good works. Her paramour, Dr. SECCHI, was a consultant of much acceptance in the city and the province; and Dr. NALDI, though a physician by profession, was possessed of talents, mainly literary, which, while weaning him away from his special calling, would still have made him noteworthy among his peers. That four such persons, moving in refined, academic, and social circles, should have, with more or less complicity, been the perpetrators of a crime supposed to be specially characteristic of the criminal class, constitutes the astounding element in the case and serves to explain the line of defence indicated and all too elaborately wrought out by the astutest of their counsel: "in fin dei conti, faremo i tutti e quattro pazzi" (the long and short of it is, we'll make them out, all four of them, to be mad). And so, in supplement to the orthodox examination and cross-examination of evidence in which Italian "avvocati" are past masters, for days—nay, weeks—the court re-echoed to the phraseology of LOMBROSO and his disciples, seeking to prove or to deny the presence in the accused of this or that "lesion," physical or mental, which makes a man a "criminaloid" as distinguished from a "criminal-né," or, in the absence of any such indication, at least a "dégéneré." Highly interesting, no doubt, was this conflict of experts but small was the impression that it made on the court—all the more that, as already said, the public, thanks to premature and non-official "information," had taken sides, advanced Liberals sympathising with the Socialist MURRIS and ardent Clericals with the devotedly Catholic BONMARTINIS—while a considerable party loudly maintained in the press that all this super-subtle "attenuation" of crime was an unfair resource of the rich client as contrasted with the poor and that justice would be discredited in the eyes of the majority if testimony only procurable by the well-to-do should come in abatement of evidence which would have made short work of the proletariat. The presiding judge, while treating the experts with the consideration due to their profession, summed up on the lines traditional in such cases and with an eye to the "salus populi," propounded a series of "quesiti" to the jury, inviting them to weigh and to respond to them as they would in common life and to give their verdict accordingly. This the jury did with a fidelity that to the leading Italian organs of opinion is quite "reassuring" in the interests of justice, and in due course came the sentence which (*teste* the same opinion) is none too severe. Meanwhile, the heart of all Italy has gone forth in sympathy with the distinguished pathologist, consultant, and teacher whose fate it has been, at the sunset of an honourable and most useful career, to see his children excluded from society and his family name polluted by so dark and indelible a stain. Touching is it to read of the many old pupils, either in practice or holding academic chairs, who sought out their revered master and did their best to comfort him in his affliction. For ourselves, we can but add how sincerely we sympathise with AUGUSTO MURRI who has been an able contributor to our columns and whose kindness to the representatives of British medicine on Italian soil will ever be gratefully remembered.

Annotations.

"Ne quid nimis."

THE PRESIDENTIAL ADDRESS AT THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

ON August 16th the President of the British Association for the Advancement of Science, Professor G. H. Darwin, F.R.S., delivered the first part of his presidential address at Cape Town. The second part of the address is to be delivered at Johannesburg on August 30th. By the courtesy of the authorities of the Association we were supplied with advance proofs of both portions of the address. We have thought it well, however, to wait until the delivery of the second portion and to publish both portions together rather than to publish them separately. The subject of the address is "Evolution" and the term "evolution" has enormously widened its scope since the days of Professor Darwin's illustrious father who first applied the principle as a working hypothesis to the history of organic life, for nowadays the theory of evolution is applied not only to organic life but to the very constitution of the universe itself; and Professor Darwin, who in the first portion of his lecture made a general survey of evolution in its various branches and laid down certain general principles which in his opinion were common to them all, went on to show how general laws found an application in recent speculations as to the constitution of matter. He reminded his hearers that of late years the atom had been shown to be no longer an atom—i.e., that it was not indivisible. He announced at the end of his address that in the next portion he would consider various theories of evolution in the heavens. We therefore propose to defer any comment upon this most interesting address until we have published both parts of it.

THE HEALTH OF THE POPE.

AN Italian correspondent, under date August 12th, writes: "Just before the Supreme Pontiff was about to solemnise the second anniversary of his promotion to the Holy See he had one of those recurrent attacks of gout which, if not serious in themselves, are sufficient to cause a flutter in the ecclesiastico-political dovecots. There were considerable swelling and pain in the left knee, Dr. Lapponi was called in, and, having with local and general treatment induced the welcome relief, he left his august patient to the seclusion of his private apartments, with strict injunctions to spare himself the transaction of all but the least harassing business. Punctually carried out, the physician's prescriptions within 48 hours enabled His Holiness to give more than one audience and the following day to receive a deputation of some 40 persons. The incident derives its importance from the resuscitation of the proposal that the Pope should drop the rôle of 'prisoner with doors locked on the inside,' and for salutary change of scene and air transfer his quarters from the 'Palace and the garden' of the Vatican to his summer residence at Castel Gandolfo which for 35 years has never known the tread of pontifical foot. It is an open secret that no one would welcome this new departure more cordially than Pius X. who, not much beyond the meridian of life and accustomed to exercise in the fresh air, often misses

> 'The sea-pulse of the still lagoon'

and the breath of the Julian Alps, particularly when the thermometer registers 40° C. (104° F.) in the shade! But in his case, as in that of Leo XIII. and of Pius IX., the traditional policy of the Curia interposes its veto and the Ultramontane party, through which the 'obolo di San Pietro' chiefly finds its way into the pontifical exchequer, insists on his sustaining the rôle of 'despoiled monarch,' under the threat that any departure from that pose would be followed by a suspension of the doles of the faithful. This *argumentum ad crumenam* is all the more effective as it is well known that the economies introduced by Pius X. in the administration of the Vatican have failed to bring about that *pareggio*, or equilibrium between income and outlay, which he has so fervently at heart. So it is to be feared that attacks of recurrent gout notwithstanding—attacks, moreover, intensifying year by year—the Pope must bow to *force majeure* and afford one more illustration of the remark that, if 'uneasy lies the head that wears a crown,' not less so lies the head that wears the tiara."

COATINGS OF RADIUM FOR THERAPEUTIC USE.

AT a meeting of the New York section of the Society of Chemical Industry[1] Mr. Hugo Lieber described methods of preparing radium coatings for therapeutic use. The proportions of the radiations given off by radium and its disintegrated emanations are about 95 per cent. of α rays and about 5 per cent. of combined β and γ rays. Owing to their nearly negative penetrating power the α rays as well as the emanations are practically unavailable for therapeutic purposes when the radium is inclosed in glass tubes or similar containers. Even the superficial layers of a given preparation of radium are relatively impervious to the emanations and the α rays proceeding from the underlying layers. In order to obtain the full radio-active effect of a given quantity of radium it is essential, therefore, that the radium should be spread out in as thin a layer as possible in the form of a "radium coating" and that the α rays and emanations should not be intercepted by a glass vessel or other form of container. In preparing the coatings the radium is dissolved in a suitable volatile solvent and a suitable material is dipped in the solution. The material when dry remains covered with a thin film of radium. In coating celluloid rods, discs, or similar instruments with radium alcohol or amyl acetate forms a suitable solvent, as it temporarily softens the celluloid and enables the radium to be incorporated in the surface. The accidental removal of the radium is prevented by afterwards dipping the celluloid instruments in a solution of collodion which forms a thin tough protecting layer, permitting the α rays and emanations to penetrate freely. The radium solution (as well as the collodion solution) is dyed with an aniline colour in order to indicate which part of an instrument has been coated and to make evident the accidental removal of the radium coating. The advantage of using radium coatings prepared in this manner is readily shown by an electroscope. It is found that a delicate rod coated at its tip with radium bromide of 10,000 units activity and holding, therefore, very little radium compared very favourably in its effects with one gramme of the same salt contained in a glass tube or with ten milligrammes of radium bromide of 1,000,000 units activity in a very thin aluminium tube. The radium coatings make it possible to apply radium to practically any part of the body. Instruments so coated possess the great advantage that they can be sterilised without loss of radium, as the protective coating effectively resists even continued boiling.

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[1] Journal of the Society of Chemical Industry, 1905, vol. xxiv., p. 230.

OCCUPATION AND PHYSIOGNOMY.

THE medical man knows the value of studying the patient's face if he would diagnose thoroughly his patient's condition, and occupation, like disease, has an undoubted influence on the physiognomy. In ordinary conversation persons will be found sometimes amusing themselves by guessing at the probable occupation of a given person and an answer not far from the truth is very often forthcoming, based entirely upon the physiognomy of that person. There are, of course, certain conventionalities in regard to dress and toilet which materially help the diagnosis, but associated with the various occupations in life there is undoubtedly a type of face which more or less betrays the calling of its owner. Medical men, especially in hospital practice, find acquaintance with these types valuable. They may not be able, with the shrewdness of Sherlock Holmes or of his still acuter brother, to read a man's past, present, and future by a glance at him in the street, but they are able to gauge with considerable accuracy how far the history of the case, as given by the patient, is a truthful one, and how far it fits with his probable occupation in life. Calling must certainly have some influence over the physiognomy of the cabman, the omnibus driver, the butler, or the groom; each frequently possesses a type of face which wears so characteristic an expression as to make it not difficult to identify the vocation accompanying it. We speak also of the legal face, the scientific face, the ecclesiastical face, the musical face and artistic face, the dramatic face, and the military face. This is merely a broad classification but we disbelieve in the claims of the keen observer to an ability to differentiate to a finer degree. We have heard of hospital physicians who claimed to be able to say from a glance at the face that this or that man was a butcher, a grocer, a bank clerk, a lawyer's clerk, a commercial traveller, a stock-broker, a wine merchant, and so on. We think that the fame of these medical men as rough-and-ready detectives has been largely manufactured for them by enthusiastic clinical clerks; but that many medical men do possess great insight into the occupations of those who come before them is a truism. The question is often debated whether physiognomy is a growth of vocation or whether it shows that the vocation chosen is in accordance with the particular capacity and ability of the person to whom it belongs. In other words, if the barrister does not show the "legal face," the aspiring priest the "ecclesiastical face," the medical student the "physicianly face," the soldier the "military face," and so on, is that a sign that they have mistaken their calling? Is the man who "doesn't look a bit like a doctor" likely to fail because his physiognomic qualification is wanting? Or will he, whatever his original features, gradually come to acquire the type of the profession to which he belongs. The answer to the question is, of course, that both theories are right. A certain kind of face, the so-called scientific face, is so often seen among modern medical students as to prove that the owner of that cast of countenance is likely to adopt medicine as a career. Conversely, whatever the original cast of features a medical man may have possessed, the anxious, delicate, and absorbing work of medical practice will put a stamp upon them.

SIMPLE DIARRHŒA AS AN ABORTIVE FORM OF DYSENTERY.

AT the meeting of the Société Médicale des Hôpitaux of Paris on July 7th Professor C. Dopter called attention to the fact that simple diarrhœa may be an abortive form of dysentery. In an epidemic of dysentery manifest cases are always preceded by attacks of simple diarrhœa; then the epidemic becomes developed and side by side with cases of varying intensity are a certain number of cases of apparently simple diarrhœa; finally, the epidemic declines and the cases become less and less severe in proportion as they become less frequent and attacks of diarrhœa again appear. Patients suffering from this apparently simple diarrhœa may infect others and give rise to attacks of true dysentery. During an epidemic of dysentery it is impossible to establish dividing lines between cases of simple diarrhœa, mucous diarrhœa, muco-sanguineous diarrhœa, and sanguineous diarrhœa. Between the extremes are all possible intermediate forms. Jürgens has recently examined bacteriologically 25 cases of simple diarrhœa which occurred at the camp of Gruppe during an epidemic of dysentery. He failed to find the bacillus of dysentery in the fæces but in 21 of the cases the serum agglutinated this organism. Professor Dopter examined bacteriologically 11 cases of diarrhœa which occurred during an epidemic of dysentery. Seven of the cases were particularly mild; there was simple profuse diarrhœa (ten to 12 stools daily) accompanied by colic but without well-marked tenesmus and the symptoms rapidly declined in three or four days. In these seven the serum reaction was negative and in one the bacillus of dysentery was isolated. The remaining four cases did not yield to ordinary treatment and ran a prolonged course. But only symptoms of diarrhœa were observed; no trace of blood was found in the stools. There were from ten to 15 stools daily for 15 days in two of these cases, for 21 days in the third, and for 25 days in the fourth. In one case the bacillus of dysentery was isolated but in all the serum reaction was positive. Finally, serum treatment rapidly cured these patients in from two to five days. It is important to recognise the nature of such cases of diarrhœa, for no doubt it is by them that the disease is mainly transmitted. The same precautions should be taken with regard to them as in cases of manifest dysentery. When cases of diarrhœa occur during an epidemic of dysentery it is easy to take the necessary precautions but if they precede the epidemic or occur sporadically the difficulties of diagnosis are great. In slight attacks there is nothing to guide the physician but if the attacks are prolonged, and especially if severe and producing an algid state with thready pulse, suspicion of their dysenteric nature should be aroused. The finding of the bacillus of dysentery would settle the question but this is attended with great difficulties. It is easy to find the bacillus in manifest cases of dysentery but the process becomes difficult as the stools become fæcal-like. The serum reaction is useful within certain limits. In a case of true dysentery the serum reaction becomes positive about the seventh or eighth day. In cases of ephemeral diarrhœa, even of dysenteric nature, the reaction is negative. But if the diarrhœa lasts a fortnight or more the serum reaction will then be found positive. The test ought to be performed with the two recognised types of the bacillus of dysentery, Shiga's and Flexner's, for they present different agglutinability with the serum of the same patient. Even if the results are negative dysentery should not be considered as excluded. Cases of diarrhœa occurring during an epidemic of dysentery should always be treated with the same precautions as if they were manifest cases of dysentery. Isolated cases of diarrhœa, especially those which occur during summer, should be treated as suspicious. Thus may be extinguished oci of epidemics of dysentery which begin as attenuated forms of dysentery and lead up to manifest cases, becoming more and more severe in proportion as they become more numerous.

THE HOUSING OF DOMESTIC SERVANTS.

ALTHOUGH our domestic servants are in large part drawn from a class amongst which housing is very far from what it should be it would seem in keeping with the fitness of things that in the houses and flats of those who are in a position to pay relatively high rents the servants should be provided with rooms in which there are adequate cubic space, light, and ventilation. We are afraid, however, from certain preliminary observations which we have made that in at least a considerable number of instances the servants are housed under conditions which, did they exist in the dwellings of the poor, would be open to strong criticism, their safety from such criticism in houses of the rich lying in the fact that external appearances are sometimes a little deceptive. It is somewhat surprising to find some of the very worst accommodation as regards servants' quarters in quite modern flats, with a rental of from £150 to £250 a year and situated in the most fashionable parts of the metropolis. To us it is astonishing to find that those who have so far succeeded in life as to be able to pay these rents should be content to house their servants under conditions in which they can never enjoy direct sunlight and where even diffused light is but a matter of a few hours daily even in midsummer. In flats such as these there are good, even imposing, reception rooms and, perhaps, two well-lighted bedrooms. For the rest the rooms, being in a projection at the rear and separated only a very short distance from the projection of the adjoining flat, are almost in darkness and but very imperfectly ventilated. It is this condition of affairs, necessitating, as it does, the constant deprivation of sunlight and the almost perpetual substitution of artificial light, which tends to promote the pale-faced anæmic appearance sometimes seen in servants in the employment of the better-off class. It is difficult to understand how the well-educated classes, knowing, as they must, the enormous value, *quâ* health and the enjoyment of life, of light and fresh air, can allow themselves to take flats where they themselves are housed in comfort but where their servants live under conditions which, to say the least of them, must be eminently depressing. It would be well, in our view, if public opinion could be brought to bear so as to secure for servants proper accommodation in these flats in fashionable quarters. We should be glad to see this subject ventilated by the metropolitan medical officers of health in their annual reports and records furnished of the results of visits made to houses and flats with the object of ascertaining precisely how the domestic servants are housed.

METHODS OF SUPPRESSING THE ADULTERATION OF FOODS AND DRUGS IN THE UNITED STATES.

Mr. W. S. Glyn-Jones, barrister-at-law, in a communication to the Pharmaceutical Society,[1] referred to the adulteration of foods and drugs in the United States and the various standards of purity drawn up by the United States Board of Agriculture. These standards are based upon data representing materials produced under American conditions. It is of interest to note, for example, that white sugar must contain not less than 99·5 per cent. of sucrose and molasses not more than 25 per cent. of water. In Massachusetts the law may be enforced by prosecution. But more often a preliminary notification to an offending dealer, especially in the case of a first offence, to the effect that subsequent infraction of the law will be followed by prosecution, leads to the immediate withdrawal of adulterated foods from sale. A third method of enforcing the law is by publication. Under the laws of some States the only method of protecting the public lies in publishing in periodical reports lists of adulterated food with the brands and manufacturers' names and addresses. Sometimes lists of unadulterated brands are published as well. It is of interest to note that in Massachusetts it is illegal to give or to sell to a person under 18 years of age a cigarette, though the minimum age for snuff and tobacco is 16 years. It is illegal also to sell or to exchange any woven fabric or paper containing arsenic in any form. A detailed list of substances condemned as impure provides instructive reading. Thus, distilled water was rarely found pure, all samples examined being below the standard, in many cases containing higher residues than the tap water of the towns in which they were produced. The salutary effect of analytical supervision over foods and drugs is shown in a striking manner in the case of glycerine, only 5 per cent. of the samples examined in 1903 containing arsenic, as against 68·9 per cent. in 1899. This illustration serves also to show what can be done by persistent and systematic notification, since this result has been achieved with but a single prosecution in the courts. A most ingenious fraud was discovered in Brockton, Massachusetts. It was the custom of the proprietor of a store to keep all the whisky supplied to his patrons in the water tank of an unused water-closet. By an ingenious contrivance the ball-cock of the tank was so arranged that the inflow of water to the tank was usually cut off. When, however, a raid was expected the tank could, on a given signal to an attendant in charge, be emptied and flushed with water by pulling the chain, the whisky flowing down the sewer. There are various forms of adulterations which have been subdivided as follows by Mr. Lyman F. Kebler, chief chemist in the drug laboratory of the United States Department of Agriculture: (1) conventional adulterations to suit the tastes and demands of the public—e.g., bleached ginger and the artificial colouring of many products; (2) accidental or incidental adulterations arising from environment, carelessness, or incompetence; (3) arbitrary adulterations to comply with, or to take advantage of, certain fixed arbitrary standards; and (4) intentional adulterations for purposes of gain and competition. The last named is the most serious form of adulteration and is met with in many forms, a few of which are of interest:

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[1] Pharmaceutical Journal, 1905, vol. lxxiv., p. 217.

borax, mixed with from 15 to 73 per cent. of sodium bicarbonate; phenacetin, mixed with acetic acid; potassium bromide substituted for potassium iodide; borax given for Rochelle salts; corn starch substituted for St. Vincent arrowroot; sound drugs mixed with inferior or exhausted drugs; honey mixed with cane sugar and glucose; pepper containing 60 per cent. of ground olive stones; beeswax mixed with 33 per cent. of cassava starch; turpentine, 25 per cent. of which in America is adulterated with kerosene; and cocoa labeled pure but containing corn and wheat starch and even powdered cocoa-shells. Many of these adulterations are not unknown in the United Kingdom. It is of interest to note the various laws of various States: thus, alum is prohibited in foods in Missouri; flour must be derived entirely from a single cereal (District of Columbia) and must contain from 9 to 18 per cent. of water, from 0·3 to 2 per cent. of ash, at least 10 per cent. of moist gluten and 5 per cent. of dry gluten (Porto Rico). Preservatives are forbidden in jellies (South Dakota), in sausages, butter-milk, and foods that can be otherwise preserved (Pennsylvania), and in dairy products (12 States). In some States the law requires the amount of preservative added to be stated on the label. Saccharin is prohibited in food (Washington). Tea must contain from 4 to 8 per cent of ash, of which at least 40 per cent. must be soluble in water, and at least 30 per cent. of aqueous extract (Porto Rico). Bread must not contain alum, sulphate of copper, borax, sulphate of zinc, or other poisonous or harmful ingredients, nor must it contain more than 31 per cent. of water or less than 6·25 of albuminoids (District of Columbia). The use is forbidden of hermetically sealed cans the surface of which in contact with the preserved food is coated with an alloy containing over 2 per cent. of lead (Pennsylvania). Some of the States prohibit the use of copperas for colouring vegetables, whilst others place a limit on the quantity of copper allowed and insist that its presence shall be stated on the label. In Porto Rico bread must not be transported in baskets or on horseback but must be sent in covered carts provided with doors. Pies and sweetmeats must be carried in covered cases lined with oil-cloth or glass and upon all stalls and in retail shops and restaurants eatables must be protected from flies by means of metallic covers. In conclusion, reference may be made to a stringent law in North Dakota forbidding the distribution of samples of drugs for advertising purposes. This law makes it a misdemeanour for any person to deposit upon the doorstep or premises owned or occupied by another or to deliver to any child under 14 years of age any patent or proprietary medicine, cosmetic, disinfectant, or antiseptic, or any drug or medicine that contains poison or any ingredient that is deleterious to health, as a sample or in any quantity whatever for the purpose of advertising.

EFFECTS OF UNCORRECTED ASTIGMATISM.

IN a pamphlet entitled "The Nervous Symptoms produced in Children by Uncorrected Refraction and Muscular Errors" Dr. J. H. Claiborne of New York dwells on the difference between European and American children as well as adults in their sensitiveness to slight defects of refraction. He maintains that even the working classes in America are more highly strung than those of Europe and that the children in their schools are built of more nervous and sensitive tissues and he attributes the difference to the terrific pressure under which life is maintained in America. The symptoms which he enumerates, and which have particularly come under his notice in practice, are chronic headache and, more rarely, that form known as hemicrania, blepharospasm, reflex phenomena presented by the stomach as nausea and vomiting, and squint. He has not met with cases of epilepsy, paralysis or paresis of the ocular muscles, or of chorea, but he thinks that uncorrected refraction may powerfully modify the mental and moral character of a child by rendering the acquisition of book learning difficult and painful. In another communication on the Axis of Astigmatism he states that the axis of astigmatism does not occur at haphazard. He has satisfied himself from his own observations on 1176 cases of astigmatism that in hyperopic astigmatism the arc of deviation from the normal is usually situated between the meridians of 45° and 135°, embracing therefore an arc of 90°. In myopic astigmatism the arc usually includes the axes of 135° and 165° or an arc of 30°, the zero of the scale starting on the right on both sides in the horizontal plane, as the frame is regarded from before. There is an arc of neutrality, which may be called the *right arc of neutrality*, of 30° lying between 15° and 45° on the one side of the circle and there is a left arc of neutrality which is between 135° and 165° on the other. The right arc of 30° lying between 15° and 45° has two axes of preference, 30° and 20°, and 30° occurs twice as often in hyperopia as in myopia, and myopia alone occurs at 20°. Within the left arc of neutrality, 135° to 165°, there is one axis of preference—viz., 150°, and this occurs with equal frequency in myopia and hyperopia. In 1176 cases of astigmatism 80 exceptional irregular cases were met with. Dr. Claiborne has devised a special form of Placido's disc, in which are drawn radiating lines in the preferred meridians in both hyperopic and myopic astigmatism with a convex lens behind a central aperture in the disc.

SUBJECTS FOR INVESTIGATION IN PHARMACOLOGY.

THERE is a certain analogy between the unwise speculator and the prescriber of new and little known drugs. The former transfers his investments from Consols which are practically safe to mining shares which may yield him a better return but are far more likely to swallow up his entire capital. The latter despises the wide range of drugs of vegetable, chemical, and animal origin which have been proved through a long course of years to have a definite value and prefers to rely upon new and comparatively untried drugs which may or may not yield him the desired results. It would, of course, be unwise to adopt an ultra-conservative position and to ignore new remedies altogether. New healing agents are most welcome when proved by clinical experience to possess advantages over older drugs. It is worthy of note that the older drugs still present problems which up to the present time have not been solved by the pharmacologist, the chemist, or the pharmacist. This fact is well shown in the Research List which has recently been issued to the press[1] by the British Pharmaceutical Conference. A similar list was commented on in THE LANCET[2] in 1902. In the list just issued many of the problems previously referred to are included as still unsolved. The active principles of many plants are unknown, including arnica, *Cimicifuga racemosa*, the bitter principle of the pericarp of bay berries, the bitter principles of calendula and chamomile, the purgative principle of castor oil, and the acrid principle of mezereon bark. Examinations are required of the red colouring matter of the petals of the poppy and of the active constituents of *Euphorbia pilulifera* and strophanthus. A comparison is desired of the constituents of simarouba bark with those of quassia, also of the two species of cascara sagrada—viz., *Rhamnus purshiana* and *Rhamnus californica*. A systematic examination is needed of damiana, a drug extensively used in the form of an extract of the leaves. It is reported to contain a bitter substance, resins, and volatile oil. The veratrine of the British Pharmacopœia is a mixture of several alkaloids, notably the crystalline veratrine and the amorphous veratridine. The question has not been settled whether pure veratrine might with advantage be substituted for this mixture of potent alkaloids. Apomorphine presents an interesting problem. It is well known that solutions of this alkaloid become coloured on keeping but it is uncertain whether such solutions retain their potency. Of potent drugs that are largely used in medicine, although we have no definite knowledge as to the strength of the preparations made from them, Cannabis indica, jaborandi, and ergot may be mentioned. Ergot is a drug possessing several constituents of different physiological value. Thus, ergotinic acid is soluble in water but insoluble in alcohol and produces paralysis of the spinal cord. Another principle of ergot, sphacelinic acid, on the contrary, is insoluble in water but soluble in hot alcohol and produces contraction of the blood-vessels. A third substance, ergotinine or cornutine, is probably the most important; it causes contraction of the uterus. It would appear to be particularly necessary to possess means of determining the strength of preparations of ergot, at least in terms of ergotinine. The botanical origin of several well-known drugs is still doubtful and requires investigation, the drugs of doubtful origin including the varieties of asafœtida and galbanum, the gum-resin opoponax, and the varieties of copaiba that are met with in commerce. Many of the problems referred to will demand for their solution the collaboration of pharmacologists and pharmacists.

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[1] Pharmaceutical Journal, June 3rd, 1905, p. 819.
[2] THE LANCET, Feb. 15th, 1902, p. 468.

THE TREATMENT OF EPITHELIOMA BY RADIUM.

THE *Clinique Ophtalmologique* of July 25th contains an article by Dr. A. Darier on the Treatment of Epithelioma (Superficial) by Radium. In one case the disease commenced as a hard nodule on the ala of the nose eight years before being seen by Dr. Darier. It was originally treated by the application of tincture of iodine. Two years subsequently it was completely removed by the knife but it reappeared and continued to extend, presenting the characters of a typical epithelioma and affecting the side of the nose, the inner angle of the eyelid, and the outer surface of the lower lid. Dr. Darier applied the galvano-cautery to various points of the edges of the ulcer, then touched them with chromic acid, and finally powdered the surface with methyl blue. The results seemed to be satisfactory and the patient went home. After the lapse of a few months she returned with a trilobate tumour affecting the upper lid and declined to undergo any further operative treatment. Dr. Darier then suggested the employment of radium, which was accepted, and he proceeded to apply to each of the three lobes of the tumour five milligrammes of sulphate of radium of 500,000 units activity attached with enamel varnish to a plate of copper one inch square. The application lasted 90 minutes (30 minutes to each lobe); three days afterwards the exposure was repeated. In the course of eight or ten days the tumour had melted away and only a small ulcer remained. The applications of radium were continued every eighth day and in a month's time a complete cure was effected. There only remained a slight depression and redness of the adjoining skin. Dr. Darier prefers the radium emanations to the x rays on account of their being far more easily managed. The best means of ascertaining the activity of the substance that is about to be used consists in placing it in contact with the skin of the forearm for a period of from five to 20 minutes and noting the number of days that elapse before the redness characteristic of radium is produced. If the radium be pure and separated from the skin by a layer of varnish only the burn may appear immediately. Inclosed in a glass tube it may, if the glass be thick, lose as much as 90 per cent. of its activity. Mica, celluloid, and caoutchouc absorb a much smaller proportion. Dr. Darier uses the sulphate suspended in a varnish which is applied to a metal and strongly heated. This in different strengths he uses for the treatment of epithelioma, chalazion, warts, nævus, trachoma, conjunctival tuberculosis, Parinaud's conjunctivitis, spring catarrh, and certain forms of parenchymatous keratitis. The little apparatus is applied for 20 or 30 minutes every second, third, or even eighth day.

A SANATORIUM FOR CONSUMPTIVE CHILDREN.

MOST of the existing sanatoriums for tuberculous patients receive only adults, but children are, nevertheless, quite as liable to suffer from tuberculous disease and, in fact, have a special predisposition to some forms of it. In the interests of these helpless little sufferers an appeal is being made on behalf of a proposed sanatorium for consumptive children which it is proposed to erect on a site in Norfolk between Holt and Cromer. The list of patrons and the general committee include many well-known and influential names, about half the number being ladies. The intention is to commence with a small building capable of accommodating about 25 children and the necessary staff but so planned as to allow extensions being made when opportunity offers. A sum of £8000 is required at the outset. Donations and subscriptions may be paid to the "Children's Sanatorium Account" at Messrs. Hoare's Bank, 37, Fleet-street, London, E.C., or may be sent to Mr. Thomas H. Wyatt, M.V.O., the honorary secretary, at the temporary address, The Rectory, 42, Great Ormond-street, London, W.C.

"FONDATION OPHTALMOLOGIQUE ADOLPHE DE ROTHSCHILD."

IN a pamphlet of 32 pages Dr. A. Trousseau gives an account of an ophthalmic institute which has been built at Paris at the cost of the late Baron Adolphe de Rothschild who left a large sum for its construction and endowment. It has received the name of "Fondation Ophtalmologique Adolphe de Rothschild" and Dr. Trousseau was named in the will to be the first director. The building was intrusted to two architects who have spared no pains to adapt it in every way to the purpose for which it was designed. A reproduction of a photograph is appended to the pamphlet which shows the façade of a handsome edifice of four storeys with attics. It is situated at the angle of the junction of the Rue Manin and of the Rue Priestley, is in close relation with numerous tramways, and by the metropolitan railway is in connexion with the heart of Paris. It is well lighted, as Dr. Trousseau, who seems to have been consulted largely, is not a believer in darkness in the ordinary treatment of ophthalmic affections. It is 250 feet above the level of the sea and has an area of about 20,000 feet. Behind it is a large garden for the exercise and the recreation of the patients. The hospital looks to the north-east over the park of Buttes-Chaumont and the pleasure ground is therefore to the south-west. The operating theatre faces the north. The drainage and the ventilation have been carefully considered. The floors are of iron covered with cement. An agreeable temperature is maintained by a steam engine working at low pressure. The whole building is freely illuminated by electricity generated on the spot and there are all kinds of electrical apparatus capable of being utilised in the treatment of disease such as is required for galvano-cautery, photophores, and exploratory lamps. Corners and ledges that might harbour dust have been avoided as far as possible. There are a laundry, a disinfecting room, and a destructor for burning all dressings. Radiography can be practised. Every arrangement is made for the sterilisation of instruments, dressings, and for personal cleanliness. The hospital contains 36 beds. There are to be no paying patients. The benefits which it affords are to be open gratuitously to all. A novel and good feature of the service of the hospital is that consultations are to be held three times daily, in the morning from 9 to 12, in the afternoon from 1 to 3, and in the evening for working men who have no other available time, from 7 to 8. The establishment as a whole is worthy of the liberality of the late Baron A. de Rothschild and of the care and attention which have been bestowed upon it by Dr. Trousseau.

THE DISTRIBUTION OF CARBONIC ACID.

To what an extent the health and comfort of human beings depend upon the proportion of carbonic acid gas in the air which they breathe is known to all students of hygiene. In the life of other organisms, also, the substance plays an important part; thus, Brown and Escombe have shown that the living leaf assimilates carbonic acid according to the pressure of the gas in the surrounding atmosphere, while Loeb has demonstrated the influence which the gas exercises upon the occurrence of parthenogenesis. Normally there is present in the air about 0·04 per cent. of carbonic acid and when local interference—e.g., the absence of efficient ventilation—is eliminated this ratio exhibits little variation. All the more curious, therefore, are certain observations upon the composition of the air in the vicinity of the island of Disko which are recorded in No. 26 of *Meddelelser om Grønland.* The island is situated near the west coast of Greenland in a region where there are no artificial conditions likely to introduce atmospheric modifications, yet a Danish man of science, M. A. Krogh, found that at different seasons the proportion of carbonic acid in the air varied from 0·025 to 0·07 per cent., the highest amounts being present when the wind was blowing from the north and west and the lowest occurring in conjunction with southerly and easterly winds. He concludes that the island of Disko must be near the margin of an area in which carbonic acid gas is liberated and as to the source of the supply he offers an ingenious explanation suggested by a circumstance which at first sight appears to have not the remotest connexion with the subject—viz., the thickness of the shells of certain molluscs. Jensen had observed that the calcareous portion of molluscan shells taken from deep water was thin and sometimes eroded as if by the action of some chemical agent and it has also been noted that the shells of dead molluscs falling into deep water are speedily dissolved. These effects it is thought can only be satisfactorily explained by assuming that in the depths of the sea there is much carbonic acid in solution and Krogh has supposed that in Baffin Bay there is an upwardly directed stream of water loaded with carbonic acid, which gas is liberated when the water containing it reaches the surface.

THE STERILISATION OF SO-CALLED DEGENERATES.

WE have received from Dr. R. Rentoul a long communication in reference to our annotation of July 29th entitled "The Sterilisation of So-called Degenerates." On several occasions we have alluded to Dr. Rentoul's views on this topic and as the statement of them which has just been forwarded to us presents no novel features we are unable to find space for more than a brief notice of it. The familiar statistics from the reports of the Commissioners in Lunacy and from other sources are set forth and are made the basis of unconvincing arguments but there is no attempt to formulate a practical scheme for the application of the principle of sterilisation to existing social conditions. There is, on the contrary, a want of clearness as to the matters really at issue which detracts from the value of the suggestions offered. "At present," says Dr. Rentoul, "the ovaries, tubes, and uterus are removed when persons suffer from diseases of those organs," and after mentioning rather superfluously some instances he proceeds: "No one objects to this sterilisation and if we so agree why can we not agree to extend its beneficial action to the prevention of mental diseases?" The cases are obviously not parallel, for in the one the persons operated upon are agreed as to the advisability of the operations, while in the other the agreement, so far as it goes, is merely on the part of those who may be called in to operate. Dr. Rentoul appears to be under the impression that because the provisions of the Lunacy Act, 1890, do not meet the difficulties connected with the segregation of the unfit nothing more can be accomplished in this direction by legislation. For ourselves we are content to wait in order to see what the deliberations of the Royal Commission on the Care of the Feeble-minded may bring forth.

THE RELATIVE VALUE OF BACTERIOLOGICAL AND CLINICAL SYMPTOMATOLOGY.

THE quarantine camp at Tor, a village on the coast of the peninsula of Sinai and not far from Suez, is an important place in connexion with the annual pilgrimage to Mecca. As the risk of the dissemination of epidemic disease by the pilgrims on returning to their homes is recognised even in Mahometan countries, a careful supervision over these travellers is exercised at various points and an outline of the routine work of the camp at Tor last March and April is given in two pamphlets published by the Conseil Sanitaire Maritime et Quarantenaire d'Égypte. One of them is by Dr. Zachariadis Bey, director of the camp in question. On account of the presence of plague in Egypt all the Egyptian pilgrims as well as foreigners passing through Egypt had to undergo quarantine at Tor but no case of the disease was discovered. The prevailing diseases this year were pneumonia and dysentery. The general health of the pilgrims was not so good as last year when there were 79 deaths among 29,964 pilgrims, whereas this year there were 161 deaths among 33,036 pilgrims. Dr. Zachariadis speaks highly of the services rendered by the medical staff which included at least one female practitioner (*doctoresse*). Three bacteriologists were engaged at the camp, one of whom (Dr. Felix Gotschlich) had the special duty of searching for the cholera vibrio and was the author of one of the two pamphlets to which we have referred. The decision as to whether epidemic disease existed among the pilgrims rested with Dr. Zachariadis as being director of the camp and this year, not for the first time, he decided that the presence or absence of clinical symptoms among the pilgrims was of far more diagnostic importance than the bacteriological results, whether positive or negative, obtained in the laboratory. For instance, he states that in 1895 he declared the camp infected with cholera and took measures accordingly some time before the bacteriologists succeeded in finding the cholera bacillus; eventually, however, the bacillus was found. On the other hand, in 1897 he declared the camp healthy although the bacteriologists had found the cholera bacillus; there were then 6000 pilgrims in the camp, none of whom presented symptoms of cholera, and there were no outbreaks of the disease in the places to which they returned in their own countries. During the pilgrimage of the present year a similar conflict of opinion arose. In six fatal cases which after necropsy were officially described as either colitis or dysentery Dr. Gotschlich found a bacillus which in his opinion was beyond all doubt that of cholera.[1]

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[1] The words of Dr. Gotschlich are as follows, the italics being his own: "En *résumé* il résulte de notre examen approfondi des six cultures en question, d'après les méthodes les plus variées, tant de la séro-réaction que de l'examen des caractères morphologiques, biologiques, et cultureux, que *ces vibrions appartiennent tous à une même et unique espèce et sont tous identiques avec le vrai vibrion de choléra de Koch.*"

Dr. Zachariadis, however, relying on the complete absence of clinical symptoms, declared the camp to be free from cholera and no quarantine restrictions were imposed. Dr. Gotschlich admits that there were no clinical symptoms of cholera among the pilgrims and his explanation of the apparent discrepancy is that the disease was "latent" in these six cases. He quotes an instance of the vibrio of cholera remaining "latent" for 50 days during a patient's convalescence.

THE medical officer of health of Cape Colony states that during the week ending July 15th only 1 new case of plague was discovered in the colony, the patient being a European female at East London. One patient remained under treatment in the hospital at Port Elizabeth and 2 in the hospital at East London. A few plague-infected rats and mice were found at Port Elizabeth, East London, and King William's Town. The commissioner of public health for Queensland, Australia, reports that the last case of plague in Brisbane was discovered on June 14th; on July 1st this patient was discharged from the hospital which was then closed. Among 172 rats and mice which were bacteriologically examined during the week there was no evidence of plague, the last infected rat having been found on June 23rd. At Maryborough in Queensland 10 cases of plague occurred recently but all the patients and "contacts" have now been discharged from the hospital. The Governor of Mauritius has informed the Colonial Office that during the week ended August 4th there were 6 cases of plague reported and 6 deaths occurred.

ON August 14th a donation of 100 francs was sent from the medical officers of the French fleet to the funds of the Royal Portsmouth Hospital. In a note M. le Médecin en Chef H Léo "remercie bien vivement messieurs les médecins de l'Hôpital Royal de Portsmouth, et, avant de quitter le port, il les prie d'agréer, avec les meilleurs souvenirs, la sincère expression de les sentiments reconnaissants et devoués."

THE Umberto I. prize of £200, awarded quinquennially in Italy in memory of H.M. King Umberto I., the subject of the competition being orthopædic surgery, has been awarded to Professor Oscar Vulpius of Heidelberg for his work "Die Sehnenüberpflanzung" (Tendon Transplantation).

METROPOLITAN HOSPITAL SUNDAY FUND.

A MEETING of the council of the Metropolitan Hospital Sunday Fund was held on August 11th, at the Mansion House, to consider the minutes of the general purposes committee recommending: (1) an alteration in the laws of the constitution so as to enable the Queen Victoria Jubilee Institute for Nurses to receive a grant; and (2) an increase in the secretary's salary; also to receive the report of the committee of distribution and to order payment of awards to hospitals and dispensaries.

In the absence of the l [illegible] WATERLOW presided. Among those [illegible] n S. Church, the Hon. Sydney Holland, Sir Stephen Mackenzie, Sir James Ritchie, the Rev. E. H. Pearce, Sir Henry Burdett, Mr. Wakley, Dr. J. G. Glover, Mr. J. Mackrell, Mr. F. H. Norman, Mr. R. B. Martin, M.P., and the Rev. A. A. Harland.

In the annual general report for the year 1905 the committee of distribution recorded with regret the resignation of Captain Cundy who had been an active member of the committee since 1894 and was now unable to give the necessary time to the work of the Fund. Mr. George Herring had again most liberally offered to add one-fourth to the amount collected in places of worship and had also generously extended his offer to amounts collected in the City, whether collected in places of worship or not. The total amount of the Fund at the present time was £61,280, to which had to be added the amount of £12,500 placed at the disposal of the Lord Mayor by the executors of the will of the late Mr. Wyndham Francis Cook in response to the appeal to City men made on behalf of the Hospital Sunday Fund, making a total of £73,780. The committee now recommended the distribution of £71,465 10s. to 162 hospitals and 60 dispensaries. The committee having been unofficially informed that the committee of the City Orthopædic Hospital was prepared to amalgamate with the other two orthopædic hospitals, subject to the seven propositions put forward by King Edward's Fund being somewhat modified, recommended a grant to be made subject to the amalgamation being carried through. The committee desired to impress upon institutions receiving grants from this Fund that awards were made towards the maintenance of patients and not for building purposes. It recommended that in calculating the cost of out patients in future the number of attendances be taken instead of the number of cases. This year 223 institutions had made application for grants from the Fund, being five more than in 1904. One hospital which applied for a grant was considered ineligible. The committee having reduced the bases of award in 27 cases this fact was intimated to each hospital interested in accordance with Rule V Twelve deputations attended the committee and after hearing their cases the final awards were determined. 5 per cent. of the total sum collected was set apart to purchase surgical appliances (in obedience to Law XII.) in monthly proportions during the ensuing year. In compliance with an order of the council and for the special use of its members tables of statistics had been prepared as usual, showing an analysis of the number of beds in hospitals, the cost of patients both at hospitals and dispensaries, and the proportionate expense of management, as well as other valuable information.

On the motion of the CHAIRMAN, seconded by Mr. MARTIN, M P., it was decided to increase the secretary's salary from £400 to £500 per annum.

Mr. F. C. CARR GOMME said that at the last meeting of the general purposes committee a very influential deputation from the Queen Victoria Jubilee Institute of Nurses was received asking that the institute might receive a grant from the Fund. The committee heard of the work which the institute was doing and it was shown that in consequence of its having had to spend nearly all the capital it could part with it would be reduced in future years in its income. The work which the institute was doing was really cognate to the work of the hospitals; and the nurses attached to the institute were able to prevent many cases from coming to the out-patients' departments of the hospitals. By this means they were taking a large part in hospital work; and the committee felt that it would be doing a good thing to include the institute in the Fund. The laws of the constitution did not, however, permit of this being done and he moved that an addition should be made to these laws to the effect that the committee of distribution do put aside a certain sum of money for the purposes of a grant to the Queen Victoria Jubilee Institute of Nurses.

Mr. MARTIN, M.P., seconded the motion, pointing out that a similar course was taken by the Fund in order to include a grant to the Surgical Aid Society.

Mr. MACKRELL did not see how it was logically possible to give a grant to one organisation of nurses and to exclude other organisations

Mr. NORMAN did not see how it would be possible to investigate the efficiency of the work done by nursing institutions in a way analogous to that which the Fund used for testing the efficiency of hospitals.

The Rev. E. H PEARCE moved as an amendment that the matter be referred to the general purposes committee for further investigation

The Hon. SYDNEY HOLLAND agreed that other nurses besides those referred to ought to receive a grant from the Fund. The work of attending to patients both before and after treatment at hospitals by nurses in the districts round London was helpful to the out-patient departments.

Sir HENRY BURDETT seconded the amendment. He said that the work done by district nurses was a useful one and in his opinion the reform which all desired in the out-patient department of hospitals would not be achieved until there was some unifying connexion between the district nurses and the hospitals of the districts in which they worked.

The amendment having been carried was put as the substantive motion and adopted.

The CHAIRMAN moved the adoption of the report. He said that this was the thirty-third year of the *Hospital Sunday Fund*. It was founded in 1872 and the total amount received and distributed by the committee since that date had been £1,382,160. He thought they might say that the Fund had been a great success. The collections this year at present exceeded £75,000 and as the financial year did not end until Oct. 31st a considerable increase on this amount might be expected. The collections in places of worship could not yet be estimated. There were very serious decreases in some of the larger collections but, on the other hand, there were many increases. The sum of £12,500 placed at the disposal of the Lord Mayor for this Fund had established a record year, the amount collected largely exceeding the figures reached in any previous year. Mr. George Herring, to whom this Fund was so much indebted, had this year, in addition to adding one quarter to the amount collected in places of worship, allowed the secretary to state that any money collected in the City should be considered as having been given in places of worship. This year 222 institutions would receive grants, the amount distributed being over £71,000.

Sir JAMES RITCHIE seconded the motion.

Dr. GLOVER asked a question with reference to the expenditure of hospitals and the CHAIRMAN, in reply, stated that the subject was one which was constantly under the discussion of the committee. Everything had been done to induce the hospitals to be as economical as they could, having regard to efficiency.

Mr. MACKRELL also spoke of the work done by the secretary in this respect.

On the motion of Sir WILLIAM CHURCH, seconded by the Hon. SYDNEY HOLLAND, the thanks of the council were accorded to Mr. Herring for his generous and continued interest in the Fund.

Sir HENRY BURDETT proposed, and the Rev. E. H. PEARCE seconded, a vote of thanks to the committee of distribution for the care bestowed by it in the preparation of the awards. Sir Henry Burdett incidentally mentioned that the initiative of the Fund really belonged to the late Dr. James Wakley whose articles in THE LANCET advocated the cause of a Hospital Sunday Fund for the metropolis.

On the motion of the Rev. Mr. HARLAND, seconded by Mr. T. J. WEST, a vote of thanks was given to the editors of newspapers who had pleaded the needs of the hospitals and advocated the cause of the Fund, special reference being made by the proposer to the valuable help given by THE LANCET and the *Hospital*.

A vote of thanks to the Lord Mayor, the Right Hon. Sir John Pound, who as president and treasurer had devoted his valuable time and influence to the well-being of the Fund, was proposed by Dr. GLOVER and carried with acclamation, as was also a vote of thanks to the chairman, proposed by Sir EDMUND HAY CURRIE and seconded by Mr. WAKLEY, who reminded Sir Sydney Waterlow of his meeting the late Canon Miller and the late Dr. James Wakley in the offices of THE LANCET 33 years ago.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

The City of Birmingham.—The report of the medical officer of health of Birmingham, Dr. J. Robertson, on the health of the city during 1904 has just been issued. The year has been memorable as the one during which the supply of pure water from Wales was effected. The birth-rate for the year was the lowest on record, being 31·5 per 1000. The death-rate was 19·3, compared with 17·2, the death rate for 1903. As in previous years the death rate was much higher in the poorer and more congested districts than in the more salubrious parts. In St. Bartholomew's ward the rate was 28·7, whilst in the Edgbaston and Harborne ward it was 12·7. The death-rate among infants was particularly high and showed a similar discrepancy in the different districts. In the Edgbaston and Harborne ward it was 133 per 1000 births, whilst in St. Mary's ward it was 331 per 1000. The zymotic death-rate was 3·44, against 2·32 in 1903. The health of Birmingham during 1904 therefore contrasts unfavourably with that during the previous year. There were eight cases of small-pox notified and, as showing the value of the means provided for such cases, it is interesting to learn that they represented seven separate importations. There was a very satisfactory decrease in the number of cases of typhoid fever, there being only 248 cases against 348 in 1903. An even greater proportionate decrease was also noted in the number of cases of scarlet fever. There was a slight increase in the death-rate from influenza, measles, and tuberculosis. No fewer than 1110 persons died from diarrhœa and 400 died from cancer. Dealing with the housing question, Dr. Robertson states that 1119 houses were reported as unfit for human habitation, as against 304 in 1903, 450 in 1902, 15 in 1901, and none in 1900. Closing orders were obtained in respect of 233 houses, 127 were demolished, and 242 were made fit for habitation. Much excellent work has been done in the way of securing greater cleanliness in the milkshops of the city and no outbreak of disease could be traced to any of the milk-supplies. The report for the half year ending July 1st, 1905, has also been presented and from the general mortality-rate and the absence of serious epidemic disease the health of the city has been better than in any similar period since statistics have been kept. The death-rate was 16·2, compared with 19·8 per 1000 for the same period in 1904. 33 cases of small-pox had been treated at the city hospital, of which 19 were discharged cured and 14 remained in hospital on July 1st. The death-rate for the first week of July was noteworthy as being the lowest weekly rate ever recorded, being 10·6 per 1000. For the second week the death-rate rose to 14.

Wolverhampton County Borough.—The annual report for 1904 on the health of Wolverhampton has just been issued and Dr. H. Malet, the medical officer, is able to make the gratifying statement that of the large towns the death-rates of which are tabulated Wolverhampton was last year thirty-eighth on the list, whereas in 1903 it was eleventh, and in 1902 and 1901 eighth. No death had occurred from measles. The birth-rate was low, 29·8 per 1000; so also was the death-rate (16).

Warwickshire County District.—Dr. A. Bostock Hill, the medical officer of health of Warwickshire, has presented his report for 1904. For the first time for some years he has been able to record an increase in the birth-rate; the increase is due to the higher rate than usual in the urban districts. The death-rate was slightly higher than in 1903 and 1902, being 14·8 as compared with 13·69 and 13·45 respectively for the two previous years. There was an increase in the zymotic death-rate but this was due to diseases over which sanitary authorities have but little control. 73 cases of small-pox had been notified. There had been an increased fatality from diarrhœa and the deaths from whooping-cough were nearly double those recorded in 1903. He attributed the prevalence of the latter disease to the carelessness of parents in not sufficiently isolating children suffering from the infection. The mortality from pulmonary tuberculosis was less than in 1903 but rather higher than in 1901 and 1902. He hoped it would become the habit of all the district councils to offer disinfection by their officers of all houses where deaths occur from this disease.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7643 births and 5226 deaths were registered during the week ending August 12th. The annual rate of mortality, which had been 13·4, 15·0, and 17·0 per 1000 in the three preceding weeks, further rose last week to 17·5 per 1000. In London the death-rate was 17·3 per 1000, while it averaged 17·5 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 5·0 in Hornsey, 6·6 in Ipswich, 6·7 in King's Norton, 8·1 in Croydon, 8·5 in Walthamstow, 8·7 in Rotherham, 9·5 in West Hartlepool and in Gateshead, and 9·6 in Halifax; the highest rates were 23·0 in Grimsby, 23·4 in Hanley, 23·5 in East Ham, 23·7 in Norwich, 24·4 in Warrington, 24·7 in Birkenhead, 25·5 in Sheffield, 25·8 in Bootle, 26·1 in Merthyr Tydfil, 28·3 in Wigan, and 33·4 in Rhondda. Excluding 29 deaths due to the colliery explosion at Watts Town the death-rate in Rhondda during the week would have been 22·1.

The 5226 deaths in these towns last week included 1626 which were referred to the principal infectious diseases, against 612, 1101, and 1507 in the three preceding weeks; of these 1626 deaths, 1376 resulted from diarrhœa, 77 from whooping-cough, 70 from measles, 47 from diphtheria, 35 from scarlet fever, and 21 from "fever." No death from any of the principal infectious diseases was registered last week in Hornsey or in Burton-on-Trent; and while Croydon, Hastings, King's Norton, Smethwick, Halifax, and Rotherham had the lowest death-rates from these diseases, the highest rates were recorded in West Ham, Norwich, Walsall, Grimsby, Birkenhead, Liverpool, Bootle, Wigan, Manchester, Sheffield, Hull, and Rhondda. The greatest proportional mortality from measles occurred in Barrow-in-Furness, Sunderland, Merthyr Tydfil, and Swansea; from whooping-cough in Hanley and Middlesbrough; and from diarrhœa in West Ham, Norwich, Walsall, Grimsby, Birkenhead, Bootle, Wigan, Sheffield, Hull, and Rhondda. The mortality from scarlet fever, from diphtheria, and from "fever" showed no marked excess in any of the large towns. No death from small-pox was registered last week in any of the 76 towns. No small-pox cases remained under treatment in the Metropolitan Asylums Hospitals at the end of last week. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, August 12th, was 2670, against 2485, 2550, and 2632 on the three preceding Saturdays; 355 new cases were admitted during the week, against 304, 352, and 266 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 117, 116, and 111 in the three preceding weeks, were 112 last week, the number in the corresponding period of last year being 121. The causes of 40, or 0·8 per cent., of the deaths in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Bristol, Nottingham, Salford, and Leeds, and in 46 other smaller towns; while the largest proportions of uncertified deaths were registered in Norwich, Liverpool, Wigan, Blackburn, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 15·2, 15·3, and 14·8 per 1000 in the three preceding weeks, further fell to 13·8 per 1000 during the week ending August 12th, and was 3·7 per 1000 below the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·8 in Dundee, 11·5 in Aberdeen, and 11·6 in Paisley to 16·6 in Leith and 17·8 in Greenock. The 463 deaths in these towns last week included 44 which were referred to diarrhœa, 10 to whooping-cough, eight to measles, two to scarlet fever, and one each to diphtheria and "fever," but none to small-pox. In all 67 deaths resulted from these principal infectious diseases last week, against 61, 66, and 94 in the three preceding weeks. These 67 deaths were equal to an annual rate of 2·0 per 1000, which was 3·4 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 22, 39 and 59 in the three preceding weeks, fell last week to 44, of which 34 occurred in Glasgow, and two each in Edinburgh, Dundee, Leith, and Greenock. The deaths from whooping-cough, which had been 12, 14, and 14 in the three preceding weeks, were ten last week, and included five in Glasgow and two in Edinburgh. The fatal cases of measles, which had been 21, eight, and 15 in the three preceding weeks, fell to eight last week, of which five were registered in Glasgow and two in Perth. The deaths from diphtheria, which had been three, five, and two in the three preceding weeks, declined to one last week, the fatal case having occurred in Perth. The deaths referred to diseases of the respiratory organs in these towns, which had been 62, 70, and 48 in the three preceding weeks, further fell to 33 last week, but were six in excess of the number in the corresponding period of last year. The causes of two, or 0·4 per cent., of the deaths registered in these eight towns last week were *not* certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 20·1, 20·8, and 21·2 per 1000 in the three preceding weeks, fell to 19·7 per 1000 during the week ending August 12th. During the past four weeks the death-rate has averaged 20·5 per 1000, the rates during the same period being 15·0 in London and 16·1 in Edinburgh. The 143 deaths of person belonging to Dublin registered during the week unde notice were 11 below the number in the preceding week and included 25 which were referred to the principal infectious diseases, against 20, 22, and 29 in the three preceding weeks; of these, 24 resulted from diarrhœa and one from diphtheria. These 25 deaths were equal to an annual rate of 3·4 per 1000, the mean rates last week from the principal infectious diseases being 5·1 in London and 0·8 in Edinburgh. The fatal cases of diarrhœa, which had been 18, 20, and 25 in the three preceding weeks, fell last week to 24. The deaths in Dublin last week included 49 of children under one year of age and 32 of persons aged 60 years and upwards; the deaths of infants and those of elderly persons both showed a decrease from the numbers registered in the preceding week. Three inquest cases and two deaths from violence were registered; and 50, or more than a third, of the deaths occurred in public institutions. The causes of seven, or nearly 5 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

Royal Navy Medical Service.

The undermentioned Surgeons have been promoted to the rank of Staff Surgeons in His Majesty's Fleet, viz.:—Albert Xavier Lavertine (dated May 15th, 1903); John Charles Rowan (dated Nov. 12th, 1903); William Rudolf Center and William Milne Keith (dated May 13th, 1904); Arthur Richard Harrie Skey and Frank Hutton Nimmo (dated Nov. 10th, 1904); and Walter Henry Ormonde Garde (dated May 25th, 1905).

Royal Army Medical Corps.

Colonel (temporary Surgeon-General) W. F. Stevenson, C.B., K.H.S., is placed on retired pay (dated August 1st, 1905). The undermentioned Majors are placed on retired pay (dated August 1st, 1905):—J. H. Brannigan, B. A. Maturin, A. P. H. Griffiths, H. T. Baylor, and W. S. Boles.

Imperial Yeomanry.

Berks: Surgeon-Captain J. H. Waters to be Surgeon-Major (dated August 16th, 1905).

Volunteer Corps.

Royal Garrison Artillery (Volunteers): 1st Norfolk: Surgeon-Lieutenant W. O. Beddard to be Surgeon-Captain (dated August 16th, 1905).

Rifle: 3rd Lanarkshire: John Paton to be Surgeon-Lieutenant (dated August 16th, 1905). 14th Middlesex (Inns of Court): Surgeon-Lieutenant A. M. Ware to be Surgeon-Captain (dated July 24th, 1905).

L'Entente Cordiale.

Portsmouth has given a magnificent reception to the French Fleet and the effect upon our visitors cannot be other than of a happy and abiding character. The spirit of *l'entente cordiale* has again been apparent between the medical men of the two countries. On August 11th a number of the French medical officers visited Haslar, among whom were Dr. Langier, Médecin Principal de la Marine, and Dr. H. Léo, Médecin en Chef, and inspected the various departments of the Naval Hospital. Later in the day they visited the Royal Portsmouth Hospital and were entertained by the medical staff.

The Japanese Red Cross Society.

An article in the *Times* of August 15th on the organisation of the Japanese Red Cross Society will be read with interest by all who are in sympathy with the benevolent work of Red Cross societies. We reproduce the first paragraph:—

> The Red Cross Society of Japan is, by its creation, the last of Red Cross societies, but it is by far the first and foremost of these societies by its splendid organisation, its wealth, and its power for good. The Japanese Red Cross Society had recently 920,000 members; its funds in hand amounted before the war to £794,000; and it possessed an annual income of £231,000. At present it should have about a million members, and its yearly income should be about £300,000. As wages are about five times higher in Great Britain than they are in Japan the value of money is about five times greater in Japan than it is in this country, since a British Red Cross Society of equal importance to that of Japan would require a war reserve of £4,000,000 and an annual income of about £1,500,000, which by-the bye, would be 20 times larger than that of one of the wealthiest of London hospitals. The matchless services of the Japanese Red Cross Society during the present war are too well known to require description and

the few figures given in the foregoing prove how far ahead of all nations is Japan by her Red Cross Society As, owing to Queen Alexandra's generous appeal, this country is at last endeavouring to create a Red Cross service worthy of Great Britain, we might learn from Japan how to organise it, although England originally was Japan's teacher in these matters

Correspondence.

"Audi alteram partem"

INEBRIETY A DISEASE AND THEREFORE TO BE TREATED BY THE MEDICAL PROFESSION.

To the Editors of THE LANCET

SIRS,—It is now becoming generally recognised that chronic inebriety is a disease but the majority of medical men have never taken its treatment seriously in hand There are two reasons for this First, the belief that the victim of the drink crave must be removed from his home and placed in some retreat or sanatorium in order that the treatment may be successfully carried out and, second, because the drugs used and the methods of treatment adopted in these highly advertised institutions have been kept secret Both these objections have now been removed The methods of treatment have been published by Dr C A McBride and Mr S. Blackwell Fenn and my own results prove that the treatment can be carried out by the ordinary medical attendant without removing the patient from his own home The hypodermic injection of atropine has undoubtedly a restraining effect upon the craving for alcohol and if with this is administered strychnine a powerful tonic effect is produced which will soon remove the terrible morning depression from which drinkers suffer In addition to this all that is needed is a suitable diet and a medicine by the mouth to correct any disturbance which is hindering the return to health, such as calomel for the liver, bromide and chloral for sleeplessness, or cinchona and capsicum as a pick me up And, indeed these will only be required for the first few days My cases have been treated as out patients, coming to my house twice a day to receive the injections There is in this more than one obvious advantage If a patient will come of his own free will to a medical man's house for treatment it shows that he has a real desire to be cured And, again, if he gives up his drinking habits while in the midst of temptation he is likely to keep straight, avoiding as he does the risk which arises when, after treatment in a sanatorium, the patient returns to the scene of his former temptation

Of course, no treatment will insure that the man will never fall again Neither is it possible to change the drunkard into a moderate drinker If, after being an abstainer for a time, he argues thus with himself, "Now I have lost the craving for alcohol I am like other men and can take a little with safety"—if he acts upon this assumption he will soon find, to his cost, that the old craving will return His only safety lies in being a total abstainer Another advantage of this out patient system of treatment is that it can be applied to the poor as well as to the rich and, again, being carried out by the family medical man, the patient is not a marked man and stigmatised as one who has been in an inebriate home Some of my patients have been treated under most unfavourable conditions but even when living in a common lodging house with its usual surroundings of drink and squalor the craving has gone and the patient has risen above his environment

I should like to see medical practitioners generally taking up the treatment of this disease I am sure much good would result Many an inebriate would be cured and many a man would be saved from falling a victim to the disease For medical men coming into more immediate contact with the results of excess would become exceedingly cautious in prescribing alcohol and would carefully safeguard their patients lest a temporary use should lead to a fixed habit

I am, Sirs, yours faithfully,
J S BOLTON, M D Edin
Nottingham, August 10th, 1905

SANITATION AT ST. MORITZ.

To the Editors of THE LANCET.

SIRS,—It will be a great kindness on your part if you will allow me through your columns to draw the attention of the local authorities of St Moritz, Upper Engadine, to the constant complaints we receive from patients whom we send there regarding the sanitation of the locality. My patients complain of the absolute indifference on the part of the authorities to their complaints about the drainage. One cannot understand why the authorities should be so blind to their own interests as not to take most vigorous precautions to make the sanitary arrangements, especially the drainage, as perfect as possible I have received quite recently a number of letters from patients whom I have hitherto sent to St Moritz inquiring about other winter quarters, basing their objections to return to St Moritz upon the faulty drainage and consequent bad smells which they allege to be the cause of the sore-throats so often seen there. It will be much to the advantage of St Moritz if the local authorities during this autumn will make a thorough investigation and place the whole sanitary arrangements in such a condition as to be above suspicion After this has been done a report should be sent to the medical press in order to prevent the unfavourable impressions now rapidly spreading regarding this famous health resort

I am, Sirs, yours faithfully,
T W PARKINSON.
Sloane-street, S W, August 8th, 1905

HIGH-FREQUENCY CURRENTS FOR INSOMNIA.

To the Editors of THE LANCET.

SIRS,—The treatment of sleeplessness and pain has lately been a subject for discussion I would like to draw the attention of fellow practitioners to the value of the high-frequency currents as an agent for the cure of sleeplessness and the relief of pain I have now had several years' experience of this form of treatment and am fully convinced of its value It may be that the high frequency currents, like other therapeutic departures, have suffered from too enthusiastic testimonies of injudicious friends, but this should not blind us to their true value I have endeavoured to observe their effects with an impartial mind and have no doubt of their real usefulness in certain conditions It is an undoubted fact that they do produce an effect on the functions of the nervous system though it may not be possible to say exactly how this effect is brought about Quite a common experience is that patients under the influence of the high-frequency currents find themselves relieved of sleeplessness Electricity in this form will not, of course, meet a more or less sudden emergency where sleep is absent in consequence of acute pain or severe mental distress In such circumstances one or other of the powerful hypnotic drugs can hardly be avoided But when there is a habit of persistent insomnia the value of the high-frequency currents is considerable After a series of applications varying in different cases from 15 to 40, patients almost invariably acquire the habit of sound sleep. There are also other advantages—that the sleep is natural and refreshing and is not followed by any of the ill effects attached to the use of narcotic drugs To obtain the best results I find it essential to utilise a large output of electricity ranging from 400 to 800 milliampères in men and from 250 to 700 milliamperes in women Used under these conditions I venture to say that the high frequency currents will rarely be employed in vain in cases of insomnia due to mental worry and other allied conditions

With regard to the use of the high frequency currents in the relief of pain—here again they can hardly compete with morphine in the promptness with which it overcomes pain due to acute inflammation Nor are they generally capable of allaying the acute pain of organic disease But in the treatment of various neuralgias their value is considerable. In neuralgia of the face and forehead and in intercostal, brachial, and sciatic neuralgias I have repeatedly proved their efficacy. The same is true of lumbago and of muscular rheumatism in various parts of the body In reference to sciatica, it is necessary to remember that when the condition depends upon perineuritic adhesions the high frequency currents render little or no help It is because this is not invariably recognised that disappointment has sometimes resulted. But with a true neuritis or with a pure neuralgia the high-frequency currents may be confidently counted upon after a few applications to produce permanently beneficial results In all these instances the method of treatment has the advantage of being grateful and not disagreeable to the patient and in addition it may be stated that the high-frequency currents form one of the best nervine tonics, and therefore while they cure insomnia and relieve pain they also at the same time greatly improve the general nervous condition of the patient. I have never had experience of any unpleasant or injurious effects resulting from the careful application of the high-frequency currents.

It may be advisable here to remark that the treatment by high-frequency currents should be intrusted to qualified medical practitioners only and that it is unwise and irregular for members of our profession in practice to send their patients for any form of electrical treatment to the various unrecognised electrical institutes which are advertised in the lay press.

I am, Sirs, yours faithfully,

Glasgow, August 14th, 1905. W. F. SOMERVILLE, M.D. Glasg.

SECONDARY FACTORS IN THE MORTALITY AND TRANSMISSIBILITY OF PULMONARY TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—With regard to my preliminary note on Secondary Factors in the Mortality of Pulmonary Tuberculosis, of which you have kindly published a summary in your issue of July 8th, p 98, I beg to point out that in my last letter I must have left out the words "*per se*" after "pure culture" and "healthy" before "pulmonary tissues" in the wording of the aphorism which you have quoted and which should read: "That the tubercle bacillus in pure culture, *per se*, is incapable of developing in the healthy pulmonary tissues either the anatomical lesions or the clinical symptoms of confirmed pulmonary tuberculosis."

I am, Sirs, yours faithfully,

Havana, July 21st, 1905. CARLOS J. FINLAY.

MISTAKES IN THE DIAGNOSIS OF INFECTIOUS DISEASES.

To the Editors of THE LANCET.

SIRS,—A few years before the last small-pox epidemic I was called to see a man in South Hornsey, North London, suffering from ordinary febrile symptoms, plus a rash, just beginning to appear. The man had been working in St John's Wood. I diagnosed variola as probable and without waiting for any further development I had the man removed and isolated. The case turned out to be virulent small-pox and owing to my promptness the disease never spread to even a member of the family and was stamped out there and then. I risked the "mistake" and saved the ratepayers a large sum of money. For many years where children are swarming in any house and one is down with some supposed infectious disease, to save lives and to save the ratepayers, it has been my custom to have the patient removed *within a few hours after examination*. I risk the "mistake," and if I am wrong in my opinion once in 15 times—about the average for each of us medical men—the saving to the community after deducting the cost of "mistakes" must be enormous.

Yesterday I was called to see a child, aged five years. Apparently typical scarlet fever. House full of children. Mother informs me, when I tell her I shall have her child removed in a few hours, that the boy has only just come home four days from the fever hospital convalescent from scarlet fever! I nevertheless act with my usual promptness and I risk the "error" again to save both lives and the pockets of the already over-burdened ratepayers. In a few hours the child was once again back in his old hospital.

If medical men, through these grossly unjust remarks about their mistakes, will stand, in future, on their rights and wait till the disease is fully developed and infection has spread, instead of a loss to the ratepayers of £12,000 the reckoning will be nearer £120,000. I calculate that after deducting the cost of my "mistakes" the various parishes that I have to do with have been saved at least £10,000 by

Your humble servant,

Endymion-road, N., August 15th, 1905. SAML. CONSTABLE.

THE SPA TREATMENT OF CIRCULATORY DISORDERS.

To the Editors of THE LANCET.

SIRS,—I have read with great pleasure the long and able article by Dr. Leonard Williams on the Spa Treatment of Circulatory Disorders in THE LANCET of August 5th, p. 347, and whilst agreeing with him in the main points of his arguments I must take exception to his statement that effervescent baths can be equally well applied at home. The natural waters containing bicarbonate of iron, calcium and sodium chlorides, &c., are capable of holding a much larger proportion of carbonic acid gas than those artificial waters where the CO_2 has been dissolved by pressure, as in the natural waters the gas has been under pressure for some considerable time. This can be proved by the fact that a bottle of soda water when opened soon loses its CO_2 under normal atmospheric pressure alone and if heat be subsequently applied very little more gas can be driven off. On the contrary, if a natural gaseous water be exposed to the air the greater proportion of CO_2 can only be driven off by the aid of heat.

I have lately returned from a visit to Spa, Belgium, where there exists an ideal supply of effervescent ferruginous water which is brought to the bath house by a conduit and supplied directly to the various baths and when heated by means of steam the quantity of CO_2 driven off is enormous. Whilst at Spa I was shown over the establishment and purposely picked out indiscriminately four different baths and found the effects identical in all.

Dr. Williams mentions Nauheim as the pioneer with its long 24 hours' journey, truly an undertaking not lightly to be considered by a cardiopath, Royat, Contrexéville, and many others equally far distant, but he has altogether omitted any mention of the town of Spa itself in Belgium, only 11 hours from London and reached by a very comfortable route where the treatment is receiving the greatest attention in a most luxurious establishment fitted with all the latest appliances. The climate, unlike Nauheim, is perfection, with bracing air, and the town, facing south, is particularly well sheltered by surrounding hills where delightful scenery abounds; and lastly, the mental comfort of the patient is catered for by excellent arrangements of concerts, race meetings, and a hundred other amusements.

I am, Sirs, yours faithfully,

Stony Stratford, August 8th, 1905. P. LAKE HOPE.

A POSSIBLE CAUSE OF CHLOROFORM FATALITIES.

To the Editors of THE LANCET.

SIRS,—Some time since, when seeking for tests whereby organo-therapeutic substances might be recognised, I found that some of them had an extraordinary power of decomposing chloroform when in solution, chlorine gas becoming rapidly evolved. In the recently published report of Merck Trillat ascribes a similar property to many organic substances, and it is suggested that as the dangerous body phosgene is formed by the contact of chloroform with the human skin it may also arise from contact with the mucous membranes in certain conditions. It seems probable then that in such circumstances the mucous membrane of the respiratory tract may have the power of decomposing chloroform, and where chlorine gas is liberated a fatal result is not to be wondered at.

I am, Sirs, yours faithfully,

J. C. MCWALTER, F.F.P. & S. Glasg., M.D. Brux.

August 12th, 1905.

MIDGES.

To the Editors of THE LANCET.

SIRS,—At this holiday season I should be grateful if you would allow me some space in your columns to elicit the opinions of your readers about midges and their bites. These small pests seem to be particularly active this year and their bites certainly give rise to an immense amount of œdema and irritation. I have seen people, both men and women, with swellings on their ankles, wrists, and neck just above the collar, varying in size from a hazel-nut to a walnut. Has the nature of the poison injected by these insects ever been worked out? Is there anything which will keep them away short of a thick coating of grease, which is impossible in this land? And can anything be done to lessen the irritation, which in my own case lasts for about a week? I might add that I myself am not particularly susceptible to insect bites. Although I have travelled a good deal in the East, mosquitoes, bugs, and lice never gave me any trouble.

I am, Sirs, yours faithfully,

M.D.

August 15th, 1905.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Infantile Mortality in Cheshire.

ACCORDING to the interesting report by Mr. F. Vacher on the health of Cheshire in 1904 there is still scope for much sanitary work. The infantile death-rate in many of the municipal boroughs is far too high, being 24 per 1000 births more than in the 76 great towns in the kingdom, while in the county it was 2 per 1000 births fewer than in the whole country. The highest rate was in Hollingworth urban district where it was 228, Compstall, near Stockport, coming next with 222, while the lowest in the list are the borough of Crewe and Wallasey urban district, each with an infantile death-rate of 159. Speaking generally, it appears that it is highest in the manufacturing districts where the mothers often work in the factories very nearly up to the time of their confinements and where they are at work again too soon afterwards. This, however, is not the only factor. In Macclesfield, where the rate is 178, the local medical officer of health finds that the mortality increases in the warm weather from conditions favouring the growth of micro organisms which cause putrefaction in the food of the infants. Following the example of Manchester there is at Macclesfield a Ladies' Public Health Society for which he asks support. The functions of the society are to visit the house where a baby is born; to take an interest in the child's welfare, and to direct the mother as to the care, feeding, and management of the infant, and as to the necessity for cleanly surroundings. Much may be done by kindly and sympathetic tact on the part of the would-be instructors of their poorer sisters who, as a rule, are *not* wanting in a certain independence and often, indeed, are imbued with a delicacy of feeling little suspected by their visitors. The medical officer of the Northwich urban district does not think the high death-rate of the towns is due to ignorance as its main cause, for it is lower in rural districts though, as a rule, he considers townfolk better educated and with greater facilities for getting help and advice. He points to the keener struggle for existence in the towns and to the fact that town infants are often ill provided with fresh air and sunlight because rents are cheapest in the more crowded courts and alleys. He says also that "soothing syrup and mothers' friend" are more used in the town than in the country. "An infant is more in the way and more costly in town than in the country, and unless some relaxation be made as regards taxation in favour of the man with a family, children will be less cared for." Perhaps some of our politicians in want of a new cry will exploit this idea. Drink and the poor milk-supply contribute their share. Mr. Vacher says that the medical officers of health consider that more prominence should be given in the elementary schools to the teaching of personal and domestic hygiene. This might no doubt be done and it would benefit the coming generations, even if in order to find time for it the curriculum were to lose some of its useless and merely decorative redundancies. The main causes of a high infantile death-rate are summed up as: (1) the employment in factories of those about to become mothers and of those recently confined who should be nourishing their infants; (2) the infants of mothers employed in factories being badly cared for and ill fed while the mothers are at work; (3) the environment being insanitary from the storing of garbage and filth close to the house and the absence of proper paving of yards leading to soil pollution; (4) there being no provision for isolating infectious children or disinfecting bedding, &c.; and (5) the ignorance common among working women as to the feeding, clothing, and management of infants.

House-flies and Diarrhœa.

Dr. J. Niven, the medical officer of health, has given to the sanitary committee a statement of the conclusions arrived at in 1904 as the result of his inquiries into a number of cases of fatal diarrhœa in infants. Under 4 per cent. of these cases had been fed at the breast. The lesson given is therefore that mothers should not wean their babies in the warm months but in order to suckle them they should feed adequately, for "it is cheaper as well as better to spend additional money in feeding the mother than in feeding the infant." Over one-third of the cases specially investigated in 1905 are believed to be due to direct infection from those suffering from diarrhœa or having charge of children suffering from it, therefore no person having diarrhœa should take charge of, or be in the same room with, an infant. There is reason to believe that the great increase of fatal diarrhœa in summer and autumn is due to its spread by house-flies, so that the utmost care should be taken to guard all food, especially that of infants, from their visits. All food, therefore, milk, bread, sugar, syrup, or treacle, should be carefully covered or kept in a safe. Dr. Niven very properly objects to the gums of infants being rubbed with the finger, often a dirty finger, with the idea of easing the gums, for there is reason to believe that diarrhœa is often communicated in this way. On the other hand, the mouth may be usefully swabbed out with a little clean lint dipped in a solution of boric acid after each meal. He objects also to the "dummy teat" which is liable to contamination from dropping on the floor. He also advises that yards should be kept clean and the drains flushed daily, that ash-tubs should not overflow, and that vegetable refuse should not be put into them. All such refuse as tea leaves, cabbage leaves, potato peelings, &c., should be burned in the kitchen fire. Any offensive smell the cause of which cannot be ascertained and removed should be reported at the sanitary office. The poor of Manchester can obtain diarrhœa mixture free of charge at the several police and fire stations. As would be expected, diarrhœa is rapidly increasing at present and it is to be hoped that Dr. Niven's words of good counsel will become widely known and acted on. The war against mosquitoes which seemed so utopian until recently is already bearing good fruit and in like manner we may have to wage deadly war not only against the house-fly but against many others. Should this ever be carried out successfully it will be interesting, and perhaps important, to learn what effect it has on the "balance of nature." Just now Trafford-park is suffering from a plague of small black flies which a few days ago were said to hang over it like a pall and to be a source of much annoyance to the people.

Children's Hospital.

The residuary legatees under the will of the late Mr. Godfrey Ermen have made a donation of £12,000 to the Children's Hospital. It is to be applied to providing a new dispensary and out-patients' department and will, it is believed, substantially cover the cost, leaving the funds contributed by various helpers available for the other objects of the appeal. The maintenance of the new dispensary will necessarily be more costly than that of the old one, so that further donations to the fund are desired. The name of Mr. Godfrey Ermen is to be associated with the new building.

Small-pox in Cheshire.

The papers record a case of small-pox in this place or that but it is not till these various outbreaks are collected together and counted up that the prevalence of the disease is brought home to the mind. In 1904 outbreaks occurred in all the municipal boroughs of Cheshire but Crewe, in 15 of the 36 other urban districts, and in five of the 12 rural districts. Macclesfield reported the highest number—49 cases. Hyde came very near with 46 and Dukinfield had 36 cases. An important part in spreading the disease was, in Cheshire as elsewhere, taken by tramps and common lodging-houses. Mr. Vacher speaks strongly on this danger to the community. The public-houses, too, especially in poor neighbourhoods, frequented by travelling tinkers, knife-grinders, and pedlars, are, by harbouring such people, to some extent instruments for spreading the disease. So, also, the mild cases, not seen by a medical man and not notified, are a source of danger, and likewise those cases which not infrequently have been thought to be chicken-pox. The picking and sorting of waste rags are occasionally responsible (as at Bollington) for conveying infection. In our eminently unpractical country it seems almost hopeless to look for the good of the majority to be considered if it involves any apparent lack of tenderness to the views of faddists and cranks. Otherwise we should by means of vaccination and revaccination be as free from small-pox as is the German army.

When the Electricity Supply System is a "Nuisance."

Some time ago the electricity committee of the corporation was mortified at the result of an action brought against the corporation in the King's Bench Division when its system of electric supply was pronounced to be "itself a nuisance." Now the Court of Appeal says that the verdict went too far, that the rights to break open the streets, to lay and to maintain electric cables, and to convey and to store the electric energy therein, were authorised and protected by the statutory powers of the corporation and it was only when the electric current was allowed to leak and to do damage that a nuisance was set up which was not protected; that what happened in this case, where considerable damage was done to a warehouse, constituted a nuisance for which the corporation was responsible and that there was sufficient evidence of negligence on the part of the corporation or its servants to justify the judge in the King's Bench Division in leaving the question of negligence for the consideration of the jury. In this action substantial damages were given to the plaintiffs. It is said that the committee is not likely to proceed further in the matter. After all, there is some comfort in the thought that if the corporation, with the aid of its "electric supply system," blows up a house or warehouse, with or without injury to those on the premises, the "system" may be called a "nuisance" and may be proceeded against with some chance of success.

Isolation Hospital for Preston.

On August 10th the foundation-stone of a new isolation hospital at Preston was laid by Dr. Brown, chairman of the health committee. It is expected to cost £20,000, and is to be provided with two pavilions for scarlet fever patients, one for diphtheria and one for typhoid fever. There are to be 56 beds, or about one for every 2000 inhabitants.

August 15th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Observations of the Medical Officer of Health of Liverpool upon the Report of Dr. R. J. Reece to the Local Government Board on Small-pox and Small-pox Hospitals at Liverpool, 1902-03.

THE port sanitary and hospitals committee of the Liverpool corporation on March 30th, 1905, had under consideration the report of Dr. R. J. Reece to the Local Government Board on small-pox and small-pox hospitals at Liverpool, 1902-03, and passed the following resolution:—

> That the medical officer be requested to furnish the committee with his observations upon the report.

In pursuance of that resolution Dr. E. W. Hope submitted some observations, a summary of which is appended. Dr. Hope said that the investigations made by Dr. Reece extended over nearly 12 months—namely, from March, 1904, to February, 1905, and he devoted the closest personal attention to those aspects of the outbreak respecting which the Local Government Board desired information and which may be presumed to be those dealt with in the report. After mentioning the area of the city—viz., 23 square miles, with a population of 723,430—an acknowledgment is made of the cordial coöperation and assistance given locally in the course of the investigations. Dr. Hope arranged that every book and every record should be placed at Dr. Reece's disposal, also that every member of the staff whom he desired to interview should be available for the purpose. After these preliminaries Dr. Reece's report proceeds to deal with three important matters connected with the outbreak—viz., (1) the administrative arrangements available for dealing with importations of small-pox into the city and for preventing and limiting its spread; (2) the administration of the hospitals; and (3) the influence exerted by the hospitals themselves in the diffusion of small-pox by what has been called "aerial convection." Dr. Reece mentions that Liverpool as a great seaport town has been especially prone to receive small-pox and regarding the action of the health committee in combating the disease and in promoting vaccination and revaccination he speaks in terms of praise. Want of practical experience of the sanitary administration of cities, Dr. Hope says, has led Dr. Reece to make observations which convey a wrong impression. His complaint on p. 4 of his report that no list had been kept of "contacts" placed under observation suggests a laxity which did not occur. The addresses not only of "contacts" but of all out-workers, with all the names necessary, were carefully kept and each officer engaged in visiting them had been duly recorded, together with his visit in his work books. Dr. Hope gives a facsimile of the record sheets in Appendix B of his observations. These sheets were at Dr. Reece's disposal. On p. 7 of his report Dr. Reece complains that the names of patients are not recorded in a particular book, a book, it may be observed, which was not intended for their record. But there were placed in his hands volumes in which the name, age, address, and date of every patient are recorded, one of them being a volume especially kept for that purpose and the other being a book recording the admission of patients to hospital. It is not apparent therefore why a complaint of this character is made. Dr. Reece complains on p. 10 of his report that spot maps of disease were not made systematically in the health department. It is not quite clear in Dr. Hope's mind what he means by this, whether or not it is inferred that spot maps of disease are made in other places but not in Liverpool. His remark appears to Dr. Hope to arise from a misapprehension of the objects aimed at by medical officers of health in preparing spot maps. They are only prepared when some useful purpose would be served by their preparation and when such maps are necessary to explain or to simplify reports which might otherwise be obscure. Dr. Reece criticises the methods in which the hospital registers and books were kept and suggests that they may be due to the want of previous experience and the short stay of the resident medical officers at the hospitals. Dr. Reece says: "In this report the city hospitals receiving small-pox cases are alone dealt with, but it is manifest that the scheme of supervision of the whole of the city hospitals merits the attention of the hospitals committee of the corporation." This observation, suggesting negligence on the part of the hospitals committee, Dr. Hope says is too general to admit of comment. Dr. Reece, he says, does not appear to have visited these institutions or to have taken steps to acquaint himself with the method of their supervision. Dr. Reece also observes on p. 6 of his report that the medical officer of health has no direct administrative control over the various city hospitals, to which Dr. Hope replies that no one with practical knowledge of the sanitary administration of large cities like Liverpool would suggest that the medical officer could possibly exercise direct administrative control over the city hospitals. In smaller districts it can take place with advantage but in the large cities it would be impracticable. Dr. Hope devotes a large part of his "observations" in questioning Dr. Reece's remarks on the alleged influence of the small-pox hospitals in disseminating the disease, otherwise known as the theory of aerial convection, and says that if Dr. Reece's assertions are well founded the hospital for small-pox erected upon a site carefully selected for the purpose and approved by the Local Government Board, after full and complete inquiries by the Board's experienced inspectors, must be closed as a public danger. Dr. Hope challenges Dr. Reece's findings and questions the statements and diagrams by which the theory of aerial convection was supported with reference to the small-pox hospitals of the city. One of Dr. Hope's strongest arguments against this theory lies in the fact that the invasion by small-pox of houses near to the Fazakerley hospital was least when the hospital had most patients. Dr. Hope also emphasises the fact that no hospital had so many surrounding cases of small-pox as one which itself never received a small-pox patient. In reference to Dr. Reece's remarks on p. 9 of his report, stating that "the generally accepted and, so far as I am aware, the only completely satisfactory explanation of the peculiarities of small-pox incidence around hospitals receiving acute cases of the disease is dissemination of infection by aerial convection," Dr. Hope replies that "it must at once be pointed out that the statement that the theory is generally accepted is without justification. The theory is not generally accepted by experts; it is not generally accepted by medical officers of health, and it has been rejected by the High Courts of Justice both in Ireland and England when the theory had been put forward to restrain the use of certain sites for small-pox hospitals." Dr. Hope concludes his "observations" by saying that "neither the Local Government Board nor the port sanitary and hospitals committee could assent to the continued use of the Fazakerley hospital if the allegations contained in Dr. Reece's table are to be regarded seriously." "The committee will, of course, appreciate that Dr. Reece's report derives its importance from the official position which he holds, and although it does not appear that the Local Government Board have adopted the report, or have given official acceptance to it, yet no doubt must be allowed to remain as to the views of the Board and the views of the committee in the matter."

August 15th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Hospital Treatment of Mental Affections.

Mr. John Carswell, who is certifying medical officer in lunacy cases for the Glasgow parish council, has been pointing out that with respect to applications made to the inspector of poor on behalf of persons supposed to be insane a sorting-out process is necessary in the interests both of the public and of the patients. This can only be done by two methods: first, by a careful medical examination of each case; and, secondly, by provision of a special hospital for the care of the early and transient mental cases. There must necessarily be a considerable proportion of cases presenting mental symptoms which do not require asylum care. He strongly objects to the term "observation wards" as applied to mental hospitals. It leads to the idea that patients are sent there for the purpose of diagnosis, which is not the case. The diagnosis has to be made, if possible, before the patient arrives there. In the Glasgow Hospital the period of residence is limited to six weeks, at the end of which time the patient must be discharged or be certified for the asylum, boarded out, or otherwise disposed of under the lunacy statutes. The patient has perfect freedom of action and there is no power of detention. The hospital is in the midst of a busy district but that causes no difficulty as regards the efficient care and medical treatment of the patients and a certain amount of open-air exercise can be secured. Moreover, the wards are well ventilated and have abundance of light. The average period of residence is about four weeks. Out of 1027 cases reported to the inspector of poor as lunatics 449 were certified insane and were removed directly to the asylum. Of those treated in the mental hospital there were afterwards certified insane and removed to an asylum 134. There were treated in the hospital in addition to those enumerated as having been transferred to the asylum 338. Of these, 213 were discharged recovered, 95 were discharged relieved—i.e., sufficiently well to be sent home or so far recovered from the mental condition as to be cared for in the ordinary wards of a hospital—and 30 had died. There were otherwise disposed of as not certifiable, treated at home, &c., 76. The general result is that of 1027 cases 583 were removed to asylums and 414 were disposed of without recourse to asylum care. The figures seem to justify the general proposition that in a population such as that of Glasgow there is a considerable number of patients who are suitable for treatment in a mental hospital and who could therefore be spared the stigma of being sent to an asylum.

Munificent Gift to Glasgow.

Glasgow has profited much by the gifts of many of her public-spirited citizens and the last possession which she has acquired in that way is by no means her least valuable one. Mr. A. Cameron Corbett, M.P., has notified the Lord Provost that he has agreed to purchase a part of Ardkingloss estate with a view to handing it over to the corporation of Glasgow. The extent of the land in question is 9000 acres and the estate is most exquisitely situated between Loch Long and Loch Goil. As Mr. Corbett says in his letter, his object is "to preserve a grand and rugged region for the best use of those who love the freedom of the mountains and wild natural beauty." In the deed of conveyance a clause is inserted prohibiting the sale of alcoholic liquor and Mr. Corbett suggests that nothing should be done which would mar the naturalness of such scenery. Such a gift is unique and it seems almost unnecessary to descant upon the generosity which prompted it. The corporation has not yet seriously approached the problem of what to do with its new estate but the suggestions put forward by correspondents in the newspapers are legion. Glasgow has hitherto done well in its efforts to provide facilities for those of its citizens who suffer from pulmonary tuberculosis. The work carried on at Bellefield Sanatorium has been largely successful but unfortunately the accommodation there is limited and many patients suitable for treatment are constantly waiting for admission. That this should be so is distinctly unfortunate in the case of a disease in which it is recognised that to obtain the most successful results treatment should be commenced as soon as the disease makes itself manifest. It has been suggested for some time that it would be an advantage to establish a subsidiary sanatorium in the form of a consumptive camp, but one of the difficulties has been to secure a suitable site for such an enterprise. Surely in this large tract of land so generously placed in the hands of the corporation a nook will be found suitable for the establishment of such an institution in a situation where its presence will not interfere with any other plans which may be carried out in order to enable the citizens to take the best advantage of their new possession.

"Tuberculosis and a Simple Life": Lecture by Sir James Grant.

Sir James Grant, M.D., ex-President of the Canadian Association for the Prevention of Tuberculosis, delivered a very interesting lecture in the Young Men's Christian Association Hall, Aberdeen, on August 10th on Tuberculosis and a Simple Life. Dr. J. C. Ogilvie Will presided over a large attendance. Sir James Grant said he was not there as a foreigner but as a Scotchman born and educated in that country. He had merely come from Canada, endorsed by Lord Strathcona, to offer a few observations upon tuberculosis and a simple life, to compare notes with the leading authorities in this country, and to see what could be accomplished by exchange of ideas on those points. After referring to the work of the Canadian Association for the Prevention of Tuberculosis, he said that in mastering or controlling this disease it was absolutely necessary that there should be thorough organisation. Three specific objects were: first, educational; second, preventive; and third, curative. In an educational way a great work was being done by lectures. Then the dissemination of literature was giving people information. With regard to preventive measures, a by-law had been recently passed in Ottawa making it an act for which an individual would be punished—in fact he might be put in prison—if found expectorating in the streets, or on the railways, or in the churches. As regarded curative measures, he said if there was any subject that concerned the welfare of the community it was this matter of the treatment of tuberculosis. They knew perfectly well that sanatoriums were being discussed and erected almost all over the world at the present time. He did not approve of large sanatoriums. Was it to be supposed for one moment that a large number of people huddled together had the same prospect of recovery as by the modern treatment which was going on to-day in the tent and the home? If anyone in the country developed this disease all he had to do was to put up a small tent, fit it up with a bed, a stove, and culinary apparatus, and get the fresh air and modern attention. The house where a consumptive case had been ought to be purified thoroughly and when there was a consumptive patient in the house the health authorities should be notified. He thought a proprietor should be fined if he allowed a second inmate into a house where a consumptive had resided until it was purified thoroughly. The reason why so many took the disease was that their vitality was lowered. If the simpler life was not followed there was danger of a lowered vitality and there would be promoted very readily that condition of the system which would enable the bacillus to settle down and generate tuberculosis. He believed that all schools should be examined by medical experts. The whole question of the treatment of this disease required to be taken into serious consideration by the authorities. Dealing with the question of food and alcohol, he said as regarded food that there was no substance in the whole list of articles of diet that could surpass oatmeal. With reference to the drink problem he was pleased to know that at the present time a marvellous change had been coming over the minds of the people of the world in regard to this extremely important subject. The subject had been carefully, solidly, and substantially investigated. Every day it was growing more popular not to use alcoholic liquors. The lecturer then referred to an interesting visit which he paid to Balmoral and said that he had been thoroughly impressed with the remarkable evidence in all the surroundings of Balmoral of a simple life that contributed in no small degree to lengthen the years which enabled Her Majesty the late Queen Victoria, as woman and sovereign, to influence for good all movements of her time, as if by a unique magnetic power, transmitted to all parts of her empire, throughout which "she made herself understood, beloved, and revered." Dr. Ogilvie Will moved a vote of thanks to Sir James Grant for his excellent address. The subject was one of extreme interest to everyone, to the highest as well as to the lowest in the land. King Edward himself had initiated a home for the treatment of consumption. A great deal had been said as to the establishment of homes for the treatment of tuberculosis amongst convey and to store the electric energy therein, were authorised and protected by the statutory powers of the corporation and it was only when the electric current was allowed to leak and to do damage that a nuisance was set up which was not protected; that what happened in this case, where considerable damage was done to a warehouse, constituted a nuisance for which the corporation was responsible and that there was sufficient evidence of negligence on the part of the corporation or its servants to justify the judge in the King's Bench Division in leaving the question of negligence for the consideration of the jury. In this action substantial damages were given to the plaintiffs. It is said that the committee is not likely to proceed further in the matter. After all, there is some comfort in the thought that if the corporation, with the aid of its "electric supply system," blows up a house or warehouse, with or without injury to those on the premises, the "system" may be called a "nuisance" and may be proceeded against with some chance of success.

Isolation Hospital for Preston.

On August 10th the foundation-stone of a new isolation hospital at Preston was laid by Dr. Brown, chairman of the health committee. It is expected to cost £20,000, and is to be provided with two pavilions for scarlet fever patients, one for diphtheria and one for typhoid fever. There are to be 56 beds, or about one for every 2000 inhabitants.

August 15th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Observations of the Medical Officer of Health of Liverpool upon the Report of Dr. R. J. Reece to the Local Government Board on Small-pox and Small-pox Hospitals at Liverpool, 1902-03.

THE port sanitary and hospitals committee of the Liverpool corporation on March 30th, 1905, had under consideration the report of Dr. R. J. Reece to the Local Government Board on small-pox and small-pox hospitals at Liverpool, 1902-03, and passed the following resolution :—

> That the medical officer be requested to furnish the committee with his observations upon the report.

In pursuance of that resolution Dr. E. W. Hope submitted some observations, a summary of which is appended. Dr. Hope said that the investigations made by Dr. Reece extended over nearly 12 months—namely, from March, 1904, to February, 1905, and he devoted the closest personal attention to those aspects of the outbreak respecting which the Local Government Board desired information and which may be presumed to be those dealt with in the report. After mentioning the area of the city—viz., 23 square miles, with a population of 723,430—an acknowledgment is made of the cordial coöperation and assistance given locally in the course of the investigations. Dr. Hope arranged that every book and every record should be placed at Dr. Reece's disposal, also that every member of the staff whom he desired to interview should be available for the purpose. After these preliminaries Dr. Reece's report proceeds to deal with three important matters connected with the outbreak—viz., (1) the administrative arrangements available for dealing with importations of small-pox into the city and for preventing and limiting its spread; (2) the administration of the hospitals; and (3) the influence exerted by the hospitals themselves in the diffusion of small-pox by what has been called "aerial convection." Dr. Reece mentions that Liverpool as a great seaport town has been especially prone to receive small-pox and regarding the action of the health committee in combating the disease and in promoting vaccination and revaccination he speaks in terms of praise. Want of practical experience of the sanitary administration of cities, Dr. Hope says, has led Dr. Reece to make observations which convey a wrong impression. His complaint on p. 4 of his report that no list had been kept of "contacts" placed under observation suggests a laxity which did not occur. The addresses not only of "contacts" but of all out-workers, with all the names necessary, were carefully kept and each officer engaged in visiting them had been duly recorded, together with his visit in his work books. Dr. Hope gives a facsimile of the record sheets in Appendix B of his observations. These sheets were at Dr. Reece's disposal. On p. 7 of his report Dr. Reece complains that the names of patients are not recorded in a particular book, a book, it may be observed, which was not intended for their record. But there were placed in his hands volumes in which the name, age, address, and date of every patient are recorded, one of them being a volume especially kept for that purpose and the other being a book recording the admission of patients to hospital. It is not apparent therefore why a complaint of this character is made. Dr. Reece complains on p. 10 of his report that spot maps of disease were not made systematically in the health department. It is not quite clear in Dr. Hope's mind what he means by this, whether or not it is inferred that spot maps of disease are made in other places but not in Liverpool. His remark appears to Dr. Hope to arise from a misapprehension of the objects aimed at by medical officers of health in preparing spot maps. They are only prepared when some useful purpose would be served by their preparation and when such maps are necessary to explain or to simplify reports which might otherwise be obscure. Dr. Reece criticises the methods in which the hospital registers and books were kept and suggests that they may be due to the want of previous experience and the short stay of the resident medical officers at the hospitals. Dr. Reece says: "In this report the city hospitals receiving small-pox cases are alone dealt with, but it is manifest that the scheme of supervision of the whole of the city hospitals merits the attention of the hospitals committee of the corporation." This observation, suggesting negligence on the part of the hospitals committee, Dr. Hope says is too general to admit of comment. Dr. Reece, he says, does not appear to have visited these institutions or to have taken steps to acquaint himself with the method of their supervision. Dr. Reece also observes on p. 6 of his report that the medical officer of health has no direct administrative control over the various city hospitals, to which Dr. Hope replies that no one with practical knowledge of the sanitary administration of large cities like Liverpool would suggest that the medical officer could possibly exercise direct administrative control over the city hospitals. In smaller districts it can take place with advantage but in the large cities it would be impracticable. Dr. Hope devotes a large part of his "observations" in questioning Dr. Reece's remarks on the alleged influence of the small-pox hospitals in disseminating the disease, otherwise known as the theory of aerial convection, and says that if Dr. Reece's assertions are well founded the hospital for small-pox erected upon a site carefully selected for the purpose and approved by the Local Government Board, after full and complete inquiries by the Board's experienced inspectors, must be closed as a public danger Dr. Hope challenges Dr. Reece's findings and questions the statements and diagrams by which the theory of aerial convection was supported with reference to the small-pox hospitals of the city. One of Dr. Hope's strongest arguments against this theory lies in the fact that the invasion by small-pox of houses near to the Fazakerley hospital was least when the hospital had most patients. Dr. Hope also emphasises the fact that no hospital had so many surrounding cases of small-pox as one which itself never received a small-pox patient. In reference to Dr. Reece's remarks on p. 9 of his report, stating that "the generally accepted and, so far as I am aware, the only completely satisfactory explanation of the peculiarities of small-pox incidence around hospitals receiving acute cases of the disease is dissemination of infection by aerial convection," Dr. Hope replies that "it must at once be pointed out that the statement that the theory is generally accepted is without justification. The theory is not generally accepted by experts; it is not generally accepted by medical officers of health, and it has been rejected by the High Courts of Justice both in Ireland and England when the theory had been put forward to restrain the use of certain sites for small-pox hospitals." Dr. Hope concludes his "observations" by saying that "neither the Local Government Board nor the port sanitary and hospitals committee could assent to the continued use of the Fazakerley hospital if the allegations contained in Dr. Reece's table are to be regarded seriously." "The committee will, of course, appreciate that Dr. Reece's report derives its importance from the official position which he holds, and although it does not appear that the Local Government Board have adopted the report, or have given official acceptance to it, yet no doubt must be allowed to remain as to the views of the Board and the views of the committee in the matter."

August 15th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

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Mr. John Carswell, who is certifying medical officer in lunacy cases for the Glasgow parish council, has been pointing out that with respect to applications made to the inspector of poor on behalf of persons supposed to be insane a sorting-out process is necessary in the interests both of the public and of the patients. This can only be done by two methods: first, by a careful medical examination of each case; and, secondly, by provision of a special hospital for the care of the early and transient mental cases. There must necessarily be a considerable proportion of cases presenting mental symptoms which do not require asylum care. He strongly objects to the term "observation wards" as applied to mental hospitals. It leads to the idea that patients are sent there for the purpose of diagnosis, which is not the case. The diagnosis has to be made, if possible, before the patient arrives there. In the Glasgow Hospital the period of residence is limited to six weeks, at the end of which time the patient must be discharged or be certified for the asylum, boarded out, or otherwise disposed of under the lunacy statutes. The patient has perfect freedom of action and there is no power of detention. The hospital is in the midst of a busy district but that causes no difficulty as regards the efficient care and medical treatment of the patients and a certain amount of open-air exercise can be secured. Moreover, the wards are well ventilated and have abundance of light. The average period of residence is about four weeks. Out of 1027 cases reported to the inspector of poor as lunatics 449 were certified insane and were removed directly to the asylum. Of those treated in the mental hospital there were afterwards certified insane and removed to an asylum 134. There were treated in the hospital in addition to those enumerated as having been transferred to the asylum 338. Of these, 213 were discharged recovered, 95 were discharged relieved—i.e., sufficiently well to be sent home or so far recovered from the mental condition as to be cared for in the ordinary wards of a hospital—and 30 had died. There were otherwise disposed of as not certifiable, treated at home, &c., 76. The general result is that of 1027 cases 583 were removed to asylums and 414 were disposed of without recourse to asylum care. The figures seem to justify the general proposition that in a population such as that of Glasgow there is a considerable number of patients who are suitable for treatment in a mental hospital and who could therefore be spared the stigma of being sent to an asylum.

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In an educational way a great work was being done by lectures. Then the dissemination of literature was giving people information. With regard to preventive measures, a by-law had been recently passed in Ottawa making it an act for which an individual would be punished—in fact he might be put in prison—if found expectorating in the streets, or on the railways, or in the churches. As regarded curative measures, he said if there was any subject that concerned the welfare of the community it was this matter of the treatment of tuberculosis. They knew perfectly well that sanatoriums were being discussed and erected almost all over the world at the present time. He did not approve of large sanatoriums. Was it to be supposed for one moment that a large number of people huddled together had the same prospect of recovery as by the modern treatment which was going on to-day in the tent and the home? If anyone in the country developed this disease all he had to do was to put up a small tent, fit it up with a bed, a stove, and culinary apparatus, and get the fresh air and modern attention. The house where a consumptive case had been ought to be purified thoroughly and when there was a consumptive patient in the house the health authorities should be notified. He thought a proprietor should be fined if he allowed a second inmate into a house where a consumptive had resided until it was purified thoroughly. The reason why so many took the disease was that their vitality was lowered. If the simpler life was not followed there was danger of a lowered vitality and there would be promoted very readily that condition of the system which would enable the bacillus to settle down and generate tuberculosis. He believed that all schools should be examined by medical experts. The whole question of the treatment of this disease required to be taken into serious consideration by the authorities. Dealing with the question of food and alcohol, he said as regarded food that there was no substance in the whole list of articles of diet that could surpass oatmeal. With reference to the drink problem he was pleased to know that at the present time a marvellous change had been coming over the minds of the people of the world in regard to this extremely important subject. The subject had been carefully, solidly, and substantially investigated. Every day it was growing more popular not to use alcoholic liquors. The lecturer then referred to an interesting visit which he paid to Balmoral and said that he had been thoroughly impressed with the remarkable evidence in all the surroundings of Balmoral of a simple life that contributed in no small degree to lengthen the years which enabled Her Majesty the late Queen Victoria, as woman and sovereign, to influence for good all movements of her time, as if by a unique magnetic power, transmitted to all parts of her empire, throughout which "she made herself understood, beloved, and revered." Dr. Ogilvie Will moved a vote of thanks to Sir James Grant for his excellent address. The subject was one of extreme interest to everyone, to the highest as well as to the lowest in the land. King Edward himself had initiated a home for the treatment of consumption. A great deal had been said as to the establishment of homes for the treatment of tuberculosis amongst the working people. He had always had his doubts as to the expediency of this being carried out on account of the great expense and the impossibility of treating any large number. He did not think that it had been yet proved that sanatorium treatment was the best possible method and he was not sure that Sir James Grant was not advocating the right thing when he suggested treatment of a simple character. He had had reason to raise his voice against that disgusting habit of spitting which went on so largely in Aberdeen. One point was known as the "spitting corner"—beside the Queen's statue—where the loafers seemed to have nothing else to do but to amuse themselves by expectorating. He was glad to see that in the tramway cars there were notices requesting people not to indulge in this filthy habit. He was sorry to say, however, that the rule was not always observed and when on several occasions he found fault with people they seemed to think that he was taking a great liberty indeed.

August 15th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Death of Mr. John Auterson, L.R.C.P. Edin.

AT an inquest held on August 8th in Cookstown in reference to the sad death by accident of Mr. John Auterson, who had for many years been a practitioner in that town, evidence was given as to the unprotected condition of the road over which he with his vehicle and horse were projected 15 feet. One witness said that the road was unprotected for a long distance in both county Tyrone and in county Derry and was very dangerous. Several accidents have occurred in a similar way on the road, some of them, as a witness testified, resulting fatally. Mr. R. Burgess, J.P., who attended the deceased, said that the road was a disgrace to modern civilisation. The jury returned a verdict in accordance with the medical evidence (shock to the sympathetic system followed by peritonitis), adding a rider in which they drew attention to the dangerous state of this road which is the leading highway from Coagh to Cookstown and on which there is great traffic. The coroner is sending copies of the verdict and rider to the county officials of Derry and Tyrone and to the rural and county councillors concerned. The coroner, the medical witness, and the jury having expressed their sincere sympathy with the friends of the late Mr. Auterson, a brother-in-law of the deceased feelingly replied.

Typhus Fever in Donegal.

An alarming outbreak of typhus fever has occurred in Innishowen, a district of co. Donegal. It is believed that the contagion was brought into the country in second-hand clothes, packed in Glasgow and sold at local fairs. Nine families in Effeshmore, a mountainous district in Clonmany parish, have been attacked and already there has been one death. Dr. B. MacCarthy (medical inspector of the Local Government Board) and the district medical officers are making every effort to stamp out the epidemic. The "contacts" have all been isolated.

A Medical Officer's Holiday.

A curious situation has arisen in Lurgan. It appears that Mr. Hugh Reid, dispensary medical officer of Lurgan No. 2 district, had been granted by the guardians a month's leave of absence on the condition that his substitute would accept 3 guineas weekly, but as he has been unable to find any local locum-tenent who will act at this figure, the chairman announced that if Mr. Reid could find no medical man to act for him at 3 guineas per week he must do without his holiday.

Smiley Cottage Hospital, Larne.

At the second annual meeting of the trustees and consultative committee of this hospital held in Larne on August 11th it was reported that 54 in-patients (and a few out-patients) had been treated. Of the interne cases 30 were medical and 24 were surgical; there were 15 operations. Admirable work is being done in this most useful institution for which the people of Larne and neighbourhood have to thank Sir Hugh Smiley and his generous wife.

Royal Victoria Hospital, Belfast.

Through the kindness of the board of management of the Royal Victoria Hospital the superintendents of the Hospital Saturday collection were entertained on August 12th and were given an opportunity of inspecting the hospital and its working which was much appreciated by the numerous guests who were very hospitably treated.

Belfast District Lunatic Asylum.

At a meeting of the asylum committee held on August 14th it was reported that there were at present on the asylum register a total of 1108 inmates—504 males and 604 females. During the five years ending December, 1904, there were 509 cases received into the asylum from the workhouse and so far this year there had been 53 admissions. Some improved provision will have to be made for the idiots and imbeciles, as neither the workhouse nor the asylum is the proper place for such cases.

August 15th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Relations between Albuminuria and Diabetes.

AT a meeting of the Academy of Medicine held on July 25th M. Lancereaux said that in his opinion it was an error to suppose that the passage of sugar through the kidney was the cause of the albuminuria which was found in diabetes, because albuminuria was unusual in pancreatic diabetes in which the amount of sugar varied between 500 and 1100 grammes in 24 hours, whereas it was relatively frequent in fatty or arthritic diabetes in which the amount of sugar seldom exceeded 100 grammes. There were three pathogenic conditions which might give rise to albuminuria in diabetes. One was an intercurrent disease, especially tuberculosis. The urine was in that case high-coloured, turbid, and scanty; its specific gravity was increased and it was loaded with flocculent albumin and tube casts; the kidney lesion was epithelial nephritis, quite independent of the diabetes and connected with the general disease. The second of the three conditions above mentioned was arterio-sclerosis with consecutive atrophy of the kidneys. The urine was of low specific gravity, transparent, pale, and abundant; the albuminous precipitate was small in quantity; the kidney lesion was arterial nephritis, which, as well as the diabetes, was of arthritic origin; uræmia was of frequent occurrence. In the last of the three conditions there was neither any intercurrent disease nor arterio-sclerosis. The urine was almost normal in quantity, specific gravity, and colour, and it contained neither tube casts nor leucocytes; the albuminuria was generally abundant and was increased by mental excitement and overwork, but the patient's general health was fairly good and anæmia was rare. This third form deserved to be called albuminous diabetes on account of its constant association with glycosuria, and in accordance with the celebrated experiment of Claude Bernard it ought to be attributed to a disorder of the bulbar innervation.

Præcordial Massage in Heart Disease.

At the same meeting of the Academy of Medicine M. Cautru read an interesting paper on the Utility of Massage of the Cardiac Region in Heart Disease. Such massage had a decided effect on the arterial tension, on the pulse, and on the cardiac dulness. In exaggerated tension he used massage to reduce it and in low tension he used massage to increase it; massage was, in fact. capable of regulating arterial tension. The desired result was generally obtained in from five to ten minutes and at first it lasted for several hours but after successive applications of the treatment, varying from ten to 20 repetitions, the effect became permanent. The particular kind of massage to be used was determined by the blood pressure. In patients with diminished blood pressure and quick pulse massage reduced the frequency of the pulse and increased its amplitude, as was shown by sphygmograph tracings. Furthermore, under the influence of massage the area of cardiac dulness was notably diminished—both the absolute dulness corresponding to the portion of the heart which was in contact with the thoracic wall and the relative dulness due to the interposition of the margin of the lungs. When, however, the pericardium was adherent the absolute dulness remained invariable, a sign which might be useful in the diagnosis of such cases.

Operations for Cancer of the Stomach.

At the same meeting of the Academy of Medicine

M. Poncet read a paper on the Treatment of Cancer of the Stomach by pylorectomy combined with more or less extensive gastrectomy. He said that of 12 such operations six had been successful and he concluded that this operation was in every way preferable to gastro-enterostomy, the latter being at the most only palliative. In conclusion, M. Poncet remarked on the necessity for operating at an early stage of the disease and on the advantages of exploratory laparotomy in doubtful cases.

The Treatment of Phlebitis.

At a meeting of the Société de l'Internat des Hôpitaux de Paris, held on July 27th, M. Vaquez expressed disapproval of the old-fashioned views which encouraged prolonged immobilisation of limbs affected with phlebitis. He recommended movement of such limbs at a period which varied according as the phlebitis belonged to one or the other of its two varieties. In phlegmasia alba dolens and phlebitis obliterans of the large veins he deprecated the use of splints (*gouttières*) which increased the pain and he recommended immobilisation in cotton-wool (*pansement ouaté*), the leg being held in position by tapes fixed to the mattress; he further recommended the use of a bedstead with adjustable fittings and acknowledged that no precise time could be assigned for the duration of the immobilisation, although in the absence of fever about three weeks might be sufficient for the establishment of œdema and pain in the course of the vein, symptoms which were indispensable preliminaries to mobilisation. The second variety of phlebitis, or subacute venous septicæmia, arose in ordinary varicose veins as a result either of a blow or of local infection from an abrasion of the skin. M. Vaquez said that the infection did not always remain localised and might spread extensively along the veins. The preventive treatment consisted in massage, gymnastic exercises, support by means of stockings, and avoidance of mechanical injuries such as blows or wounds of the skin. If subacute septicæmia declared itself complete immobility ought to be maintained for about three weeks, followed by massage not of the phlebitis but of the immobilised joints and of the muscles which were atrophied by disuse. M. Vaquez said that septic phlebitis even when occurring at a low level always required high removal of the veins. He also recommended hydrotherapeutic measures.

Anæsthesia produced by the Combined Use of Scopolamine-Morphine and Chloroform.

M. Walther has recently advocated the production of anæsthesia by the combined action of scopolamine-morphine and chloroform and M. Monod has employed the method in five cases. In four of these the result was quite satisfactory but not so with the fifth patient who was a female. The injection of scopolamine-morphine having been given, chloroform was administered two hours afterwards and M. Monod performed cholecystostomy; 20 minutes after the chloroform was discontinued she was seized with syncope and artificial respiration had to be maintained for more than half an hour. Injections of ether and caffeine were also given. After 20 minutes of apparent death the pulse reappeared and she soon regained consciousness. M. Monod did not think that the mishap could be attributed to the morphine because the patient had already received injections of morphine without any abnormal manifestation. He described the case at a meeting of the Surgical Society held on July 26th.

Surgical Treatment of Facial Neuralgia.

At a meeting of the Surgical Society held on July 27th M. Delbet described three cases in which operations had been performed for the relief of facial neuralgia. In one of the patients he first resected the supra-orbital and infra-orbital nerves but as the neuralgia continued he removed the Gasserian ganglion and the patient remained well for eight months, after which the pain returned. In August, 1902, M. Delbet resected the superior cervical ganglion of the sympathetic. For the first 12 days there was no definite result but afterwards there was an improvement, although not such as to render further treatment unnecessary and the patient was at the present time receiving radiotherapy from M. Béclère. In the two other cases also treated by the same method there was a similar improvement but not complete recovery. Considering that resection of the supra-orbital and infra-orbital nerves was ineffectual while the removal of the Gasserian ganglion was a serious operation and often untrustworthy, M. Delbet concluded that excision of the sympathetic ganglion was preferable because it sometimes yielded successful results.

Paris Milk-supply.

A paper on the Paris milk-supply read by Dr. Henri de Rothschild at a recent meeting of the Société Scientifique d'Hygiène Alimentaire ought to attract the attention of the public authorities. From his observations and analyses of the milk sold in the 20 districts (*arrondissements*) into which the city is divided it appeared that only 22 per cent. of the samples contained a normal amount of fat, the remainder being impoverished. The proportion of inferior quality was 91 per cent. for the milk retailed at 20 centimes per litre (2½d. a quart) and 75 per cent. for the milk retailed at 26 or 30 centimes per litre (3½d. a quart).

Chloride-free Diet in Heart Disease.

At a meeting of the Société Médicale des Hôpitaux held on July 28th M. Vaquez and M. Digne described observations which they had made on the effects of limiting as much as possible the chlorides in the diet of patients suffering from heart disease. They have obtained proofs, on the one hand, that there was a constant retention of chlorides during the continuance of well-marked cardiac symptoms; and, on the other hand, that the minor phenomena, such as nocturnal dyspnœa, transient œdema, and œdematous bronchitis, which preceded urgent cardiac symptoms have a similar origin. Conversely, these cardiac symptoms, whether slight or severe, did not pass off without copious excretion of urinary chlorides (*polyurie chlorurique*). Mere rest in bed with the use of a chloride-free diet would sometimes be sufficient to bring about recovery. A chloride-free diet also assisted the action of diuretics in such cases. In mitral and aortic disease with low arterial tension a chloride-free diet and preparations of digitalis were essential, followed by a prolonged use of theobromine. In mitral and aortic disease with hypertension, conditions which were usually accompanied by renal sclerosis, the most trustworthy treatment consisted in the use of theobromine together with the administration of small doses of digitalis at definite intervals. The "dechloruration" necessary during treatment by digitalis must sometimes be replaced by "hypochloruration" (*régime hypochloruré*). In heart disease a dietary containing very little chloride was in every way desirable, even when the patient felt comparatively well. On the slightest appearance of cardiac symptoms it was necessary as a precaution to prescribe digitalis combined with "dechloruration" lasting for three four days, followed for a week by the administration of one and a half or two grammes of theobromine and a dietary containing very little chloride. When the symptoms were urgent the use of chlorides ought to be regulated in accordance with the results of investigations as to the capacity of the organism for chlorides. Systematic experiments and analyses, combined with a dietary of uniform hydrating and calorific power (*alimentation isohydrique et isothermique*) as described by M. Widal and daily weighing of the patient, would show how much chloride could be taken without danger.

Involuntary Movements of the Fingers in Tabes Dorsalis.

At the fifteenth congress of French-speaking alienists and neurologists held at Rennes from August 1st to 7th M. Sabrazès said that in tabes dorsalis it was not unusual for the fingers to make involuntary movements of adduction, abduction, opposition, and rubbing against one another. This often happened with the forefinger and thumb, which might work like a pair of forceps, especially when the person was speaking. Investigation of the early history of this condition showed that it was preceded by an affection of the hands characterised by awkwardness and loss of sensibility; there was also in the fingers a feeling of numbness which caused the patient to rub them against one another for the purpose of restoring sensibility, thereby manifesting a sort of motor reaction against the feeling of numbness. In other cases these movements corresponded to those executed by the patients in the course of their occupation, such as the manipulation of cloth by a tailoress or the winding of tow on a reel. These involuntary movements were annoying to the patients who endeavoured to disguise them in various ways. Since the attention of M. Sabrazès had been directed to the subject he had observed five cases and had compared the movements with those occurring in tic. Their frequency in tabes dorsalis was of some importance as a symptom.

The Treatment of Incontinence of Urine.

At the Congress of the French Association for the

Advancement of Science, which was held from August 3rd to 10th, M. Ardouin said that he had used Sicard's method of epidural injections in the treatment of 22 cases of incontinence of urine arising from various causes. He adopted Cathelin's procedure of injecting artificial physiological serum in doses varying from 10 to 30 cubic centimetres. He has never observed untoward results, even of a trivial kind. During the injection some patients experienced sensations of pain or weakness in the legs, the back, or even the nape of the neck. The results were very encouraging, as 16 patients recovered and four were improved, while the remaining two showed no change.

August 14th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Heart Disease and Cycling.

As already reported in these columns,[1] the military authorities have found that there is a considerable increase of cardiac diseases in the army as well as among the conscripts. A special commission appointed to inquire into the matter came to the conclusion that various excesses in which young men indulge, together with the prevalence of influenza, may have contributed to the spread of cardiac troubles. Dr Beyer, a military surgeon, writing to the *Münchener Medicinische Wochenschrift*, has expressed the opinion that a connexion exists between heart disease and cycling. He has examined the conscripts of two army corps, of whom 233 and 293 proved to be suffering from heart diseases. 41 and 110, being respectively 17·6 and 37·5 per cent., of the sufferers were stated to be cyclists and it is remarkable that the cardiac troubles which are most commonly found in cyclists—namely, dilatation and cardiac irritability—were especially frequent among the conscripts. It seemed to be proved that cyclists, especially those following sedentary occupations, such as clerks, school teachers, shopmen, &c., were liable to heart disease, because they cycled long distances on Sundays without having sufficient practice during the rest of the week. Another class consisted of working men who in the evening cycled home from their employment after a day spent in fatiguing exertion. All these people overstrained their hearts by cycling. Cases where soldiers contracted heart disease by cycling in the service were rather rare, because the men selected for that duty were all of strong constitution, were previously examined by an army medical officer, and were kept in regular practice.

The German National Beverage.

Temperance principles are obviously making substantial progress even in quarters where it might be least expected. According to recently published statistics the consumption of beer is steadily decreasing in the city of Munich so justly famous throughout the world for the produce of its breweries. The natives of Munich not long ago neither liked nor recognised any other drink than beer and even children became accustomed to the national beverage at an early age. The result was that fatty heart, arterio-sclerosis, cardiac dilatation, and other diseases of the circulation were "endemic" there, so that the late Professor Oertel of Munich had ample material for his well-known studies on cardiac debility and its treatment. In 1884 the average consumption of beer in Munich was not less than 500 litres per head per annum, but this estimate has decreased to 339 litres in 1903 and 315 litres in 1904 In 1904 the output of the Munich breweries was 3,185,800 hectolitres, of which 1,648,510 were consumed in Munich; in 1903 the output was 3,290,900 hectolitres, of which 1,745,495 were consumed in Munich. The water supplied to the town is of good quality but the average citizen would be astonished at the suggestion that people might drink it habitually. This marvel may, however, come to pass if the consumption of beer continues to fall off at the present rate.

Arhovin.

Arhovin, which is a combination of diphenylamin with thymolic-benzoic acid, has been recently recommended as a specific remedy against gonorrhœa, and Dr. Piorkowski has published in the *Deutsche Medicinische Wochenschrift* the results of researches on the bacteriological relations of the new substance. He states that it has an aromatic smell and an agreeable taste. It is not soluble in water but is soluble in alcohol, ether, and chloroform. It is absorbed by the stomach in from 15 to 20 minutes. Its strong bactericidal action is proved by the destruction of cultures of bacteria. Cultures of staphylococcus and bacterium coli are destroyed within 60 minutes. The destruction of cultures of the gonococcus was even more prompt, these micro-organisms ceasing to grow after a contact of 15 minutes' duration with arhovin. Dr. Piorkowski concludes from his experiments that the substance is likely to be useful both by local administration in gonorrhœa, urethritis, endometritis, and otitis, and also by internal administration in diseases of the urogenital organs, especially in cystitis and pyelitis.

Operative Treatment of Puerperal Septicæmia.

Professor Bumm recently read a paper before the Berlin Medical Society on the Operative Treatment of Puerperal Septicæmia. He said that the results of surgical interference were far from being satisfactory. Neither the use of the curette nor the removal of the uterus was trustworthy, the latter procedure leading to profuse hæmorrhage and moreover leaving the infected stump behind. The same danger was connected with the removal of the ovaries and the tubes. Professor Bumm recommended ligaturing the thrombosed veins, especially in the more chronic cases. He had ligatured the ovarian and hypogastric veins in cases of pyæmia of which only two ended fatally. He usually made a transperitoneal incision as in that way the veins could be reached more easily than by an extraperitoneal method.

August 14th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Federative International Congress of Anatomy.

FRANCE has been known to claim chemistry as "a French science" and Italy, with perhaps equal justice, to claim anatomy as an Italian one, but (scientific *chauvinisme* aside) Italian interest in anatomical study rests on a historic basis so solid as amply to account for the strength of her representation at the great congress which begins its session to-day at Geneva. This meeting is the first of its kind and it is to be hoped of a long series, its distinctive feature consisting in its not being an international congress on the traditional lines, assembling in one or other national centre, but the collective gathering together of "anatomical societies" which, after preliminary arrangements inspired by a fraternal spirit truly cosmopolitan, have agreed to hold a *réunion* in common and on neutral ground—and all this with no sacrifice of individuality but with each society under its own president working in harmony with the sister societies in the carrying out of one and the same programme. This coöperation, thanks to its collective or "federative" *motif*, will have an advantage unknown to its merely national predecessors—a larger, more varied, in all respects more comprehensive, representation of the "armamentarium anatomicum," an exposition of all the technical resources of research and instruction, including preparations macro- and micro-scopic, illustrating the whole field of anatomy, human and comparative, in embryology, histology, histo-chemistry, &c., the whole resulting in a maximum of demonstration and a minimum of discursive talk. That this programme is not more ambitious than the powers directing it can justify will at once appear in the enumeration of the promoting societies—the Anatomische Gesellschaft of Germany, founded in 1887; the Anatomical Society of Great Britain and Ireland, dating from the same year; the Association of American Anatomists, now in its eighteenth session; L'Association des Anatomistes, founded in 1899; and the Unione Zoologica Italiana, which originated at Pavia in 1900. Italy, I may add, is fortunate in her representative, Professor Romiti of Pisa, a veteran anatomist and zoologist, who can claim the scholastic paternity of a greater number of pupils holding anatomical chairs and lectureships in Italian seats of learning than any living compatriot. He happens to be president for the year of the Unione Zoologica Italiana and certainly no other Italian could have added to the right due by rotation a stronger claim on scientific and professional grounds to represent her at this first meeting of the Federative International Congress of Anatomy.

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[1] THE LANCET, August 29th, 1903, p. 637.

The Istituto Antirabbico of Milan.

The Pasteur treatment of hydrophobia can point to few more effective "centres of practice" than the Milanese Antirabic Institute, the report of which for the biennium 1902-03, just out, is as interesting, scientifically and clinically, as any of its predecessors. In 1902 there were 209 persons subjected to the treatment and in the year following 283. Of these, six died at the close of the treatment, two while it was still in progress, and one five days after its termination. The "animali morsicatori" (biting animals) were 492, of which 480 were dogs, eight cats, three oxen, and one man. The institute put in practice three "types of cure," to wit, the normal of 20 days' duration, applied to 437 persons; the "short cure," lasting 15 days and applied to 22 persons; and the "cura intensiva," of 23 days' duration, to which 33 were subjected. (The report incidentally calls attention to the fact that in consequence of experiments made in the institute it was decided, beginning from November, 1903, to modify the traditional method of the Pasteur Institute in Paris—a modification yielding this result: that from that date to April 30th, 1905, no case under treatment at the institute terminated fatally.) As to the sex of the patients 402 were males and 90 females. As regards their age there were 60 cases from one to five years, 105 from six to ten, 79 from 11 to 15, 79 from 16 to 25, 125 from 26 to 50, and 44 from 51 to 80. The "ubicazione" (seat) of the bites was classified as follows: on the face 44 cases with five deaths; at the extremities and exposed parts, 263 with three deaths; and on the non-exposed parts, 183, resulting fatally in one case only. The animals examined at the institute for purposes of experiment and observation were 325. The report proceeds to examine the more "impressionanti" of the fatal cases, well-nigh all them of persons bitten on the face with very extensive lacerations, and records that out of seven the Pasteur treatment proved insufficient in the four gravest cases, but adds that in two of these the "cure," owing to the rapidity with which death supervened, could not develop its action. As to the others, it states that the treatment is efficacious only (1) when the inoculation is not near the nerve centres (which happens when the bites subjected to it are on the face); and (2) when the inoculation of the malady is such as to leave time for the "cure" itself to develop its prophylactic action. A highly interesting section of the report is that with which it concludes, presenting a detailed description of the "protozoa" discovered by Dr. Negri in the nerve centres of hydrophobic animals. This discovery, it claims, admits of a rapid diagnosis being formed, with consequent gain of time and successful results in those cases in which the "Pasteur cure" proved inefficacious because applied too late.

August 6th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Unusual Prolongation of Tabes Dorsalis.

AT a recent meeting of the Society of Practitioners in Vienna Dr. Fuchs showed two patients presenting an unusually long duration of tabes dorsalis. The first was a man, 75 years of age, who, when 16 years old, acquired syphilis. Four years later—namely, 55 years ago, he complained of shooting pain in the legs, *crises gastriques*, and slight disturbance of coördination. 31 years later he sought advice at a hospital on account of atrophy of the optic nerve; he refused to have his pains treated having had them for 30 years. Since then he has remained under medical observation and thus supplies an instance of tabes dorsalis of 55 years' duration. The disease was practically stationary, "prehistoric," as someone said. The other patient, who was a man 60 years of age, began to complain of typical shooting pains 30 years ago without knowing of any specific infection. For the last 22 years he has been under treatment at the hospital, all the symptoms of tabes dorsalis have been present throughout that period, and except variations in the intensity of the pain there is nothing to indicate that the disease is making any progress. These facts seem to show that tabes dorsalis may at least be practically arrested.

Spontaneous Recovery from Progressive Paralysis.

At the same meeting of the above-mentioned society a woman was shown who had a remarkable history. In 1890 she was found to be suffering from typical tabes dorsalis and was treated by massage, hydrotherapy, and iodine. Four years later symptoms of classical progressive paralysis in the expansive form suddenly appeared. Whilst in an asylum a whitlow developed on her right thumb and a deep-seated phlegmon caused sepsis. At the time of operation the phenomena of Argyll-Robertson, Westphal, and Romberg were all present and she had various delusions. When she recovered from the sepsis all the symptoms of paralysis were gone and since that time, 11 years ago, she has remained of sound mind but there is a slow increase in the tabetic symptoms which consist of loss of sensibility of the skin and loss of the tendon reflex in the tendo Achillis. The patient has meanwhile undergone operations for cystitis and pyelonephritis, her left kidney having been extirpated. Septic changes of the blood, perhaps assisted by chronic purulent processes, have therefore been the means of bringing about recovery from paralysis. The different course of psychical and bodily diseases of syphilitic origin is very interesting.

Avulsion of the Deep Flexor Tendon of the Middle Finger.

At a recent monthly meeting of the medical officers of the Vienna garrison Dr. A. Popper showed a man whose hand had been caught in the toothed wheels of an engine. The third phalanx of the right middle finger was torn off and with it there came away the whole tendon of the deep flexor longus for a length of 31 centimetres (12 inches) reckoned from its place of insertion to the seat of injury. The remarkable features of this accident were: (1) the absence of bleeding, which was to be explained by the retraction of the blood-vessels; and (2) the complete restoration of the function of the other fingers although the wound healed by granulation. The time required for healing was five weeks and the only existing sign of the injury was the loss of the phalanx. The treatment consisted in the application of antiseptic dressings and active movements by means of the short flexor, combined with passive movements.

A Nothnagel Scholarship.

The Senate of the University of Vienna has decided to devote £1000 to the purpose of establishing a scholarship in memory of the late Professor Nothnagel. The prize will be awarded to the essay which gives the best answers to medical problems proposed yearly by the Senate. In the case of no essay being deemed worthy of the prize the money will be laid out with a view to encourage original research on diseases of the intestines.

School Hygiene.

The director of the statistical bureau for school affairs has published some very instructive facts concerning the morbidity and mortality of school children. The age period of from 6 to 14 years shows the lowest percentage generally, the susceptibility to pulmonary tuberculosis being also least marked during this period. Tuberculosis was naturally more prevalent among the teaching staff than among the pupils, as the age and occupation of the former gave them an increased susceptibility. The inequality of morbidity and mortality among the children in different districts was due to local variations in connexion with diet, parental care, and promptness of recourse to medical aid. The report therefore recommends systematic medical inspection of schools and an increase in the number of medical officers who ought to be empowered to send children to hospitals if the parents neglect them. In doubtful cases of infectious diseases the child is to be kept away from school. In 1903 there were 97,105 boys and 93,302 girls in the public schools. Of these there was a daily morbidity rate of 3 per cent. for boys and 4½ per cent. for girls. Special classes for feeble-minded and mentally deficient children have been opened in five districts and the German method of teaching deaf-mutes has been universally adopted throughout the Austrian empire.

A Memorial to Professor Finsen.

Funds for the erection of a Finsen memorial have been collected by a committee and a surplus of about £50 remains. It has been decided to use this money to enlarge the laboratory and to increase the surgical appliances in the hospital for lupus.

The Production of Surgical Anæsthesia by Intraspinal Injections.

The intra-dural injection of anæsthetics in the lumbar region for surgical purposes has been carefully studied by Dr. Preindlsberger who described his results at a recent meeting of the Vienna Medical Society. He injected tropacocaine, which is less toxic than beta eucaine or cocaine. The dose was 0·07 gramme, equal to one and a sixth of a grain, in sterilised water, and with the exception of some degree of headache there were no unpleasant after effects. Nausea or collapse was not observed amongst 345 cases operated upon under this form of anæsthesia. The cases included a great variety of laparotomies, amputations, herniotomies, and other surgical operations on the regions below the level of the umbilicus. The analgesia was complete in more than 70 per cent. of the cases, fairly complete in 15 per cent., and inadequate in 15 per cent. In the last category the operations had to be finished under ether or chloroform, of which, however, only a very small quantity (from 20 to 30 drops) was required to control pain. Some of the patients showed a rise of temperature up to 100° or 102° F. for a day or two, after which it soon fell to normal. The injections are made where lumbar puncture is best effected—namely, between the first and second lumbar vertebræ.

August 14th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Railroad Accidents in the United States.

THE latest accident bulletin issued by the Inter-State Commerce Commission giving the statistics of the railroad accidents which occurred in the United States during the first three months of 1905 shows that during that period 1651 passengers and 2062 employees were injured and 28 passengers and 204 employees were killed as the direct result of railway disasters. Including other causes of injury not immediately due to derailments or collisions the total number of deaths was 909 and of non-fatal casualties 14,937. The total number of accidents was 3108, of which 1787 were collisions. The loss of property to the railway companies alone is estimated at $2,449,248. It is not only the stupendous loss of life and property that gives one pause in considering these figures but also the fact that the number of disasters appears to be increasing from year to year instead of diminishing. This is accounted for by the fact that while the volume of traffic is rapidly growing on all the roads the smaller ones are attempting to carry on their business without double-tracking their lines and installing the expensive signal systems that are essential to the safe operation of the busy modern railroad.

The Warfare against Mosquitoes.

The anti-mosquito propaganda has been carried on with great vigour this year and apparently with effect enough to satisfy the most sceptical. The inhabitants of the New Jersey and Long Island coast towns are reporting an unwonted scarcity of the insects this summer, whereas in previous years the pests have been so troublesome as to render life in these otherwise most attractive summer resorts very uncomfortable. This happy consummation has been effected by diligent destruction of the mosquito larvæ by petroleum, by draining swamps and marshy ground, by thinning the shrubbery in damp localities, by keeping all cisterns, rain-water barrels, &c., screened, and by filling in stagnant pools. During the spring many small streams and creeks were cleaned out and huge quantities of petroleum have been sprayed over the mud-flats at low water. The rural population who at first looked on askance at these measures which seemed to be founded on mere theory have become convinced of their wisdom and are willing to second the efforts of the sanitarians. The insects are unusually scarce, however, even in localities that have not been active in attempts at their extermination and it is supposed that the dryness of the summer so far has rendered conditions less favourable than usual for the development of the larvæ.

A New Hospital Boat for New York.

A craft designed to serve mainly as a hospital transport but in addition equipped for purposes of all-round utility is being built for the city of New York and will soon be completed. Most of the city's contagious disease and detention hospitals are on various neighbouring islands given up to these purposes and the new boat will have eight small wards intended to receive such patients during transit. Each of these is directly accessible from without and they are all constructed of sheet steel so that they may be hermetically closed and fumigated. There will also be a morgue on board and large tanks so that in case of accident to the pipe lines in ordinary use a water-supply may be carried to any of the city's island institutions. The boat will also serve in a less strictly medical capacity, for it is to be provided with powerful pumps intended to be used for fighting fires along the water front and there will be a space left clear on the main deck sufficiently large to accommodate a city fire-engine so that in case of emergency one can be transported to any part of the harbour where it may be needed.

Filtration for New York's Water-supply.

In a recent report just submitted to the mayor the health commissioner of the city of New York urgently recommends the installation of a suitable water filtration plant for the purification of the city's water-supply. Until now the effort has been made to secure safety through the purchase by the municipality of as much territory as possible round about the Croton watershed, which is the source of supply, but it is now recognised that this means of protection is entirely inadequate. It is estimated that a sand filtration plant sufficient for the city's daily consumption of 500,000,000 gallons could be completed within two years at a cost of about $17,000,000.

Typhoid Fever in Chicago.

The customary summer increase in this disease has been more than usually severe and the hospitals contain over a third more cases than a month ago. The data collected show that the proportion of infections contracted outside of the city is steadily rising. Previously to 1900 the proportion of outside cases averaged 20 per cent. but since then it has gradually increased until now it is thought that at least a fourth of the patients acquired the disease in other localities.

To Reform Drunkards.

The grand jury of New Brunswick, New Jersey, has been petitioned to take measures providing that habitual inebriates shall be sent to the State prison for long periods instead of to the county jail. The idea is that in this way they will be given an opportunity to reform and to learn a trade.

Medical Men in Contempt of Court.

The presiding justice of a Washington, District of Columbia, court recently, in addition to a severe rebuke, imposed fines for contempt of court on two physicians who were late in appearing in response to subpœnas. No account was taken of the fact that both were able to show that they could not have presented themselves sooner without neglecting their professional obligations.

A Mother of 25 Children.

A woman who died recently in a Pennsylvania village at the age of 47 years is said to have given birth to 25 children. She was married at 14 and there were only two sets of twins in the 25. 18 children survived and 12 grandchildren are living.

The New United States Pharmacopœia.

The eighth decennial revision of the United States Pharmacopœia has been completed and comes into effect on Sept. 1st, 1905. Among the more notable innovations are several changes in the strengths of tinctures intended to make them conform to the standards recommended at the International Congress on Potent Remedies held at Brussels in 1902. The strength of tincture of aconite has been reduced from 35 per cent. to 10 per cent., and that of tincture of veratrum from 40 per cent. to 10 per cent., while that of tincture of strophanthus has been increased from 5 per cent. to 10 per cent. Several of the more widely used synthetic remedies of definite composition have been admitted and for the first time statements of the average dose of each drug or preparation are appended to the respective descriptions. Numerous changes in terminology have also been made, such, for example, as the coining of the term fluidextractum to replace the older extractum fluidum. In spite of active attempts made by certain spelling "reformers" to curtail such terms, the final *e* is retained in the names of the alkaloids, the halogen compounds and such words as oxide. The number of articles added to the Pharmacopœia is quite large but fortunately it is exceeded by that of the omissions.

The Yellow Fever Situation.

The yellow fever epidemic in New Orleans has not yet been got under control though the morbidity has been greatly restricted by the active efforts of the sanitarians. On August 8th there had been 565 cases of the disease, with

113 deaths, and new cases are being reported at the rate of from 30 to 50 a day. This is a very encouraging showing, as previous epidemics have spread much more rapidly and it is also gratifying to note that very few cases have been discovered outside the city itself. The fact that some of the health boards of the surrounding states were unwilling to trust entirely to the mosquito theory of transmission of the disease in many cases led to the enforcement of the fear-inspired quarantines of the shot-gun type that worked so much injustice in former years. In consequence there were numerous clashes between the health officers of different regions, but at the petition of the citizens of New Orleans the Federal Government has stepped in and the entire situation is now under the direction of the United States marine hospital service, so that uniformity in quarantine regulations is assured. The efforts of the sanitarians in the infected city are based entirely on the assumption that by screening all patients and destroying all breeding places for the mosquitoes communication of the disease is impossible, so that the epidemic may be regarded as a crucial test of the mosquito theory.

August 10th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Bubonic Plague.

BUBONIC plague is still prevalent at Maryborough, Queensland, and there have been seven deaths, the last being that of a nurse at the General Hospital. An influential deputation, representing merchants, shipping companies, and others, waited on the Premier of Queensland to ask that effective measures should be taken to counteract the effect of the plague restrictions imposed by the New South Wales authorities, which were a serious check on Queensland trade, and urged, if other means failed, that an embargo should be placed on all goods from New South Wales. The Premier, in reply, regretted that the deputation had not waited till Dr. J. Ashburton Thompson, the President of the Board of Health of New South Wales, had reported on the subject. He had made representations to the New South Wales Government and also to the Commonwealth Prime Minister, who considered that the matter was one for the Federal Parliament to deal with in a Federal Quarantine Act. The Premier of Queensland declined to put an embargo on merchandise from New South Wales, saying that to protect the trade of one State against that of another by quarantine was improper. During a recent conference between the Prime Minister of the Commonwealth and the Premier of New South Wales the former raised the question of the restrictions imposed by the New South Wales Board of Health against fodder and other produce from Queensland. He regarded the restrictions as an infringement of the Commonwealth Constitution Act. The Premier of New South Wales denied this view and maintained that a State was free to impose restrictions of the most stringent kind to protect the health of a large city, and observed that the restrictions applied equally to New South Wales ports on the north coast. He believed that an amicable settlement would follow the visit of Dr. Thompson to Brisbane.

The Health of Melbourne.

The officer of health of the city of Melbourne, Dr. J. Jamieson, has furnished his annual report to the city council. It showed that during the year reviewed the total deaths in the city numbered 869, being a considerable reduction on the figures for the previous year, which was a period of exceptionally low mortality. For the three years 1901, 1902, and 1903 the deaths numbered respectively 1075, 1012, and 931. For 1904 the mortality was in the proportion of 12·82 per 1000 of the estimated population, which is considered an exceptionally low rate, the proportion in 1903 having been 13·8. The mortality from epidemic diseases during 1904 was slightly higher than in 1903. The number of births registered in the year, exclusive of those in the Women's Hospital, was 1175, considerably below the average of the last few years. Deducting from the total number of deaths under one year those occurring in the same hospital, the number 98 is obtained, giving the remarkably low death-rate of 83·4 per 1000 births. Last year the rate—105 per 1000—was regarded as unprecedentedly low. The infant mortality rate during each of the four periods of five years each, from 1885 to 1904 inclusive, averaged 194, 152, 156, and 110 respectively. The figures show that there has been through the last five years a steady, if not quite uniform, gain in the saving of infant life and thus some compensation has been obtained for the fall in the birth-rate.

The Adulteration of Food in Melbourne.

Appended to the report of the health officer was a return of analyses made by the city analyst. Of 83 samples of milk subjected to analysis, 13 passed the standard of purity, 47 passed the "limit" allowed and 14 were below the limit in percentage of non-fatty solids, one contained fatty solids equal to only 0·32 per cent., and one was deficient by at least 12 and probably 34 per cent. of its fatty solids. Nine samples were found to contain added water in quantities ranging from 3 to 15 per cent.; 23 were artificially coloured, and two contained boric acid. Of 20 samples of eucalyptus oil submitted three only passed the tests of the British Pharmacopœia. Five samples of lime-juice were examined, of which only one was the genuine article. Of the others one was slightly below the limit and another passed it but contained 42 grains of salicylic acid and 8 grains of sulphurous acid to the imperial gallon.

Pulmonary Tuberculosis in Victoria.

At the last meeting of the Board of Public Health of Victoria the chairman (Dr. Norris) drew attention to the death-rate from pulmonary tuberculosis in the State and its variations in different centres. In the Melbourne metropolitan area, where pulmonary tuberculosis was a notifiable disease, the proportion of deaths had fallen between 1889 and 1904 from 20 to a little over 13 per 10,000. In Bendigo it was still over 22 per 10,000 and in Ballarat over 16 per 10,000, the same as in 1899, and the highest in the State except Bendigo. He moved that the section of the Health Act stipulating that cases of pulmonary tuberculosis must be notified should be enforced at Ballarat and Bendigo to enable the local councils to take more preventive measures, especially by disinfecting infected centres. The motion was carried with the addition that the provision of the Act should also apply to Geelong. It may be explained that Bendigo has the reputation of being a suitable climate for consumption and consequently attracts sufferers from the disease who die there. The authorities are taking action to compel medical practitioners to notify pulmonary tuberculosis. At Prahran recently a medical man was fined for not doing so and the Hawthorn council has resolved "that local medical practitioners be informed that unless cases of pulmonary tuberculosis are in future reported in accordance with the provisions of the Health Act prosecution would ensue."

The Asylums for the Insane in Victoria.

The recently appointed inspector-general of the insane for Victoria, Dr. W. E. Jones, has furnished a report on the condition of the asylums in that State. He says that all the institutions are considerably overcrowded and that much of the existing accommodation is of an extremely unsatisfactory character. Dealing with the cost of administration he says that the weekly cost of the patients has only been 11*s.* 7*d.*, nearly half of which is paid in salaries and wages, leaving the very moderate amount of 6*s.* 2*d.* per week to be spent on the patient's food, clothing, medical comforts and necessaries. It appeared that things were being worked in possibly too economical a manner. He recommended that the Ararat gaol ward should be given up, that Yarra Bend, broadly speaking, should be rebuilt from end to end, that the Sunbury Asylum should be considerably increased in size, that various improvements should be made at Kew, that the whole of the male side at Ballarat should be remodelled, and that extensive alterations should be made at Ararat and Beechworth. Attached to the report is a table of overcrowding, showing that there are 600 patients too many in the asylums. There is also a table of proposed buildings and alterations, involving an estimated expenditure of £245,800. The principal items are £22,000 for building and refitting the receiving house; £54,000 on alterations to Yarra Bend; £21,500 for Kew; £10,400 for a new idiot asylum; £53,000 for Sunbury, including £24,000 for two new infirmary wards and two new epileptic and suicidal wards to accommodate 180 patients; £32,000 for Ballarat, including £10,000 for a new administrative block; £13,000 for Beechworth; and £16,400 for Ararat. Another table shows that Dr. Jones recommends additional appointments involving £4705 in salaries. The Cabinet has considered the report but has not decided what action will be taken. It proposes to set aside £50,000 for asylum needs this year.

A New Wing at the Wentworth Sanatorium.

On June 3rd a new wing was formally opened by the Premier of New South Wales at the Queen Victoria Sanatorium for the treatment of early cases of consumption at Wentworth Falls, New South Wales. The original building, which was opened in 1903, had 20 beds; the additions will give a total of 44 beds, besides eight shelters, and it is estimated that the institution will be capable of treating about 200 patients annually. The cost has been about £22 per annum per bed.

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Measles is epidemic in Melbourne and suburbs but the infectious diseases hospital will not take in cases of this disease as it provides only for scarlet fever and diphtheria. The Melbourne and other metropolitan hospitals also refuse admission to such cases.—The medical students at the University of Melbourne have written to the committee of the infectious diseases hospital asking for permission to attend the practice of the hospital in their fifth year to observe cases not seen at the other hospitals. The request was referred to the superintendent to make arrangements to meet the desire of the students.

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On June 8th Dr. F. W. Marshall was for the third time tried at the Central Criminal Court, Sydney, on a charge of manslaughter and this time the jury returned a verdict of not guilty. On the two previous occasions the jury could not agree. The medical evidence was the same as at the previous trials.

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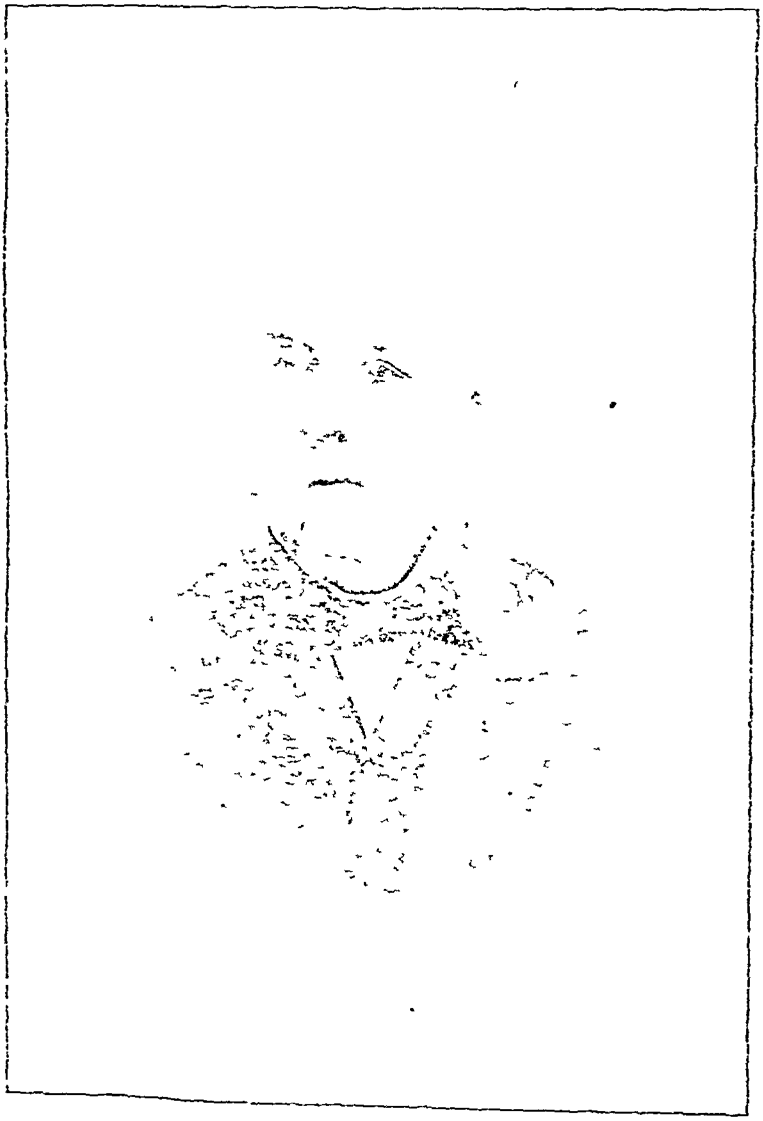

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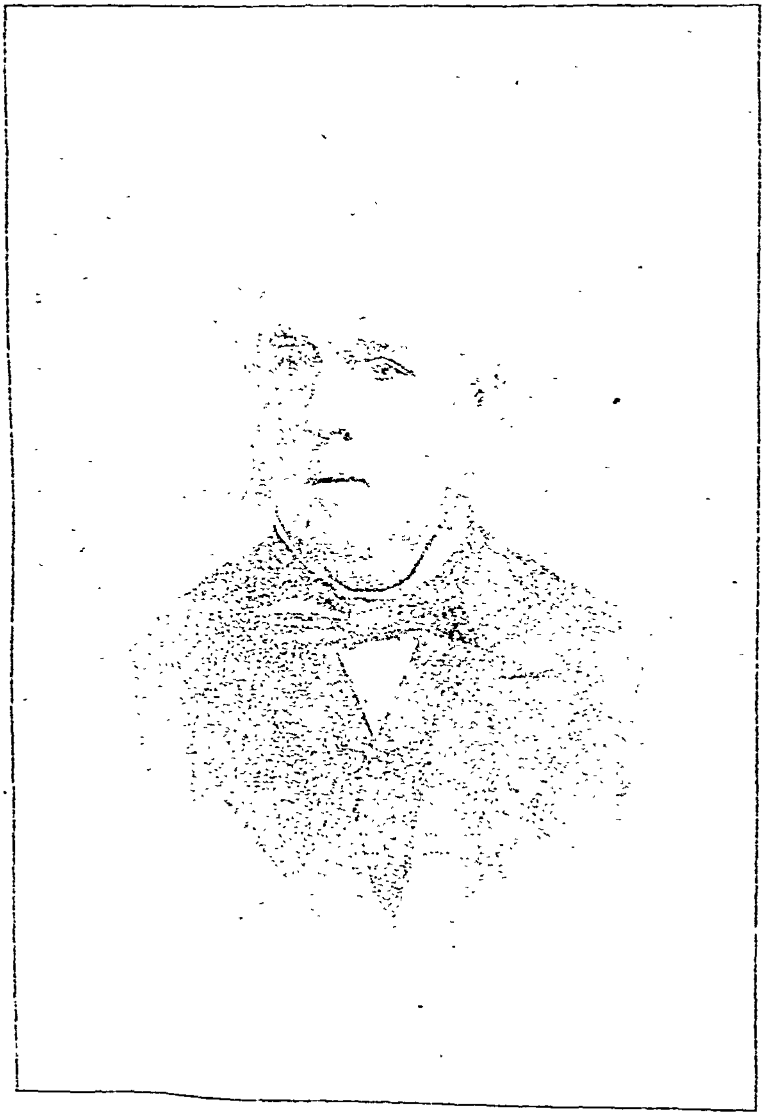

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Dore Blake. He was educated at the Independent College, Taunton, and pursued his medical studies at University College, London, becoming a Member of the Royal College of Surgeons of England in 1863 and graduating M.D. at the University of Aberdeen in 1872. He first practised at Wolverhampton and subsequently at Reigate. In 1880 he came to London where he practised largely as a gynæcologist until within a few weeks of his death. Dr. Blake was the author of numerous medical writings and was one of the first in this country to recognise the important part played by sepsis in disease processes; and it was probably because he was somewhat heterodox, especially in the earlier part of his medical career, that he did not receive the ready recognition which the quality of his work and his undoubted talents deserved. His strong point as a physician was treatment and it would be difficult to find anyone more thorough and painstaking in this respect than he was. He was a man of pronounced individuality and of remarkable energy and enthusiasm. His information was encyclopædic and he was a master of detail, which very circumstance perhaps prevented him always from distinguishing the essential from the non-essential. His wide culture, quickness, and versatility made him a brilliant conversationalist, and nothing delighted him more than a long day in the country with a kindred spirit, when he could fully indulge his passion for natural history and folk-lore. He leaves a widow and one son who has already achieved distinction in the world of art.

Medical News.

UNIVERSITY OF LONDON.—At the intermediate examination in medicine held in July the following candidates were successful:—

Alicia Pears Aldous, London (Royal Free Hospital) School of Medicine for Women, Leonard Tilsley Baker, Guy's Hospital, Henry Lewis Barker, St. Mary's Hospital, *Frederick James F. Barrington (scholarship in physiology), University College, Kathleen Baylis, University College, Cardiff; Alfred Bernstein, Victoria University, Lilias Margaret Blackett, London (Royal Free Hospital) School of Medicine for Women, Trevor Laurence Bomford, St. Bartholomew's Hospital, William Francis Bowen, University College, Edward Wrigley Braithwaite, University of Leeds, John Webster Bride, Victoria University, Kate Brown, London (Royal Free Hospital) School of Medicine for Women, Arthur Burrows, London Hospital; Rhoda Hicks Butler, London (Royal Free Hospital) School of Medicine for Women, George Spence Candy, London Hospital, Howard Bernard Carter, Guy's Hospital, Samuel Earle Cathcart, Middlesex Hospital, Walter Chesters, St Mary's Hospital and University College, Cardiff; James Aitken Clark, St. Thomas's Hospital, Cecil Clarke, University College, Bristol; [illegible] ersity College; Stanley [illegible] Ernest Marshall [illegible] spital, London (Royal Fr[illegible] Cox, Westray Cropper, [illegible] John Davis Woodcock Daniels, St. Ma[illegible] William Denning, Guy's Hospital, [illegible] Mary's Hospital, Donald Frederic[illegible] Gladys Margaret C. Dunbar, Londo[illegible] of Medicine for Women, Raymond Charles Viner Edsall, Guy's Hospital, Douglas Gordon Evans, London Hospital, Vera Foley, London (Royal Free Hospital) School of Medicine for Women, Harold Sydney Furness, University College, Eric Leigh Fyffe, St Thomas's Hospital, †Eric Gerald Gauntlett, King's College, *William Gilliatt, Middlesex Hospital, Alexander Edward Gow, St Bartholomew's Hospital, Thomas John Hallinan, Charing Cross Hospital, John Maximilian Hammond St. Bartholomew's Hospital and University College, Bristol, ‡Clement Hoyle Heppenstall, University of Leeds, Susie Eleanor Hill, London (Royal Free Hospital) School of Medicine for Women; Frederick George Hitch, London Hospital, Maurice James Holgate, St. Bartholomew's Hospital, Henry Holroyd, Middlesex Hospital, Charles Reginald Hoskyn, St. Bartholomew's Hospital; Matilda Hunt, London (Royal Free Hospital) School of Medicine for Women, William Johnson, Guy's Hospital, John Edward Lionel Johnston, St Mary's Hospital, Robert Henry Hatten Jolly, Charing Cross Hospital, Arthur Rocyn Jones, University College, Cardiff, Rose Fanny Jordan, London (Royal Free Hospital) School of Medicine for Women, Harold Holmes King, St Bartholomew's Hospital, Elsie Marian Layman, London (Royal Free Hospital) School of Medicine for Women, John Lewis, University College, Cardiff, Edward Leslie Martyn Lobb Guy's Hospital; Dermot Loughlin, London Hospital, Oswald William McSheehy, St. Thomas's Hospital, Robert Vernon G Monckton, St. Bartholomew's Hospital, Emily Helen Morris and Florence Muriel Morris, London (Royal Free Hospital) School of Medicine for Women, Austin Threlfall Nankivell, St. Bartholomew's Hospital; Ernest Edwin T Nuthall, St Thomas's Hospital; Geoffrey Eugene Oates, St Mary's Hospital, John George Owen, University College, Walter Henry Palmer and ‡John Parkinson, London Hospital; Herbert Edward Perkins, Guy's Hospital, William Joseph Petty, University College, Cardiff; Hilda Margaret Pollard, London (Royal Free Hospital) School of Medicine for Women; Dan Arthur Powell and Laura Gertrude Powell, University College, Cardiff, Robert Bernard Price, St. Bartholomew's Hospital; Joseph Francis E. Prideaux, University College, Simon Isaac Rabbinowitz, London Hospital, Jeffrey Ramsay, St. Bartholomew's Hospital; Edgar Nelson Ramsbottom, Victoria University, ‡Alfred Richardson, University of Leeds; Arthur M. Marsh Roberts, University of Liverpool; Kenneth Robinson, Victoria University; Hubert Alan Hirst Robson, St. Thomas's Hospital; Alice E. Sanderson, B.Sc, London (Royal Free Hospital School of Medicine for Women), Harry Archibald Sanford, Guy's Hospital, Charles Fox Octavius Sankey, St. Thomas's Hospital, William Scarisbrick, B.Sc., University of Liverpool; Francis Charles Searle, St. Bartholomew's Hospital; Frederick George Sergeant, University College; Shantaram R. Shirgaokar, King's College and Grant Medical College, Bombay, ‡Latimer James Short (scholarship in pharmacology), University College, Bristol; James Thornton Smalley, Guy's Hospital; George Francis Rawdon Smith, University of Liverpool; St. John Alexander M. Tolhurst and Vincent Townrow, Guy's Hospital; Norman Hamilton Walker, St. Bartholomew's Hospital; Enid Margaret Walters, London (Royal Free Hospital) School of Medicine for Women; †Albert James Walton (scholarship in anatomy), London Hospital; †Charles Henry Shorney Webb, Middlesex Hospital; *Henry Whitehead, Victoria University; Margaret Hannah Wild, B.A., London (Royal Free Hospital) School of Medicine for Women; Herbert George Willis, St. Mary's Hospital; Sophia Margaret V. Witts, London (Royal Free Hospital) School of Medicine for Women; William Wallace Wood, London Hospital; and Arthur Lowndes Yates, St Bartholomew's Hospital.

*Distinguished in Physiology †Distinguished in Anatomy.
‡Distinguished in Pharmacology.

This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in August the following candidates passed in the subjects indicated:—

Surgery.—H. J. Aldous (Section II.), King's College Hospital; C. W. S. Boggs (Section II), Leeds; H. A. Browning (Sections I. and II), Cambridge and St. George's Hospital, and G. M. Seagrove (Section II), St. Bartholomew's Hospital.

Medicine—P. D. Addis, University College Hospital; C. W. S. Boggs (Section II), Leeds, J H. Harrison (Section II.), Sheffield; F. J. F. Jones (Section I), Guy's Hospital; E. B. Miles and W. G. O'Malley (Sections I. and II), London Hospital; W. V. Pegler (Section II), Leeds; N. A. Stutterheim (Sections I. and II), Utrecht, and A. Whitby, Dublin.

Forensic Medicine.—E. Moir, Manchester; and N. A. Stutterheim, Utrecht.

Midwifery—E. Moir, Manchester, A. F. Palmer, Middlesex Hospital; and F. C. H Powell, King's College Hospital.

The diploma of the Society was granted to the following candidates entitling them to practise medicine, surgery, and midwifery: H. J. Aldous, C. W. S. Boggs, H. A. Browning, E. B. Miles, and N. A. Stutterheim

DONATIONS AND BEQUESTS.—Mr. John Rotherham has by will bequeathed £1000 to the Coventry and Warwickshire Hospital.—Sir Massey Lopes has given £500 Consols to the funded property of the Royal Eye Infirmary, Plymouth.

MEDICAL MAGISTRATES.—Mr. Bernard Roth, F.R.C.S. Eng., has been appointed a justice of the peace for the county of Middlesex.—Mr. A. Wood, M.B., C M. Edin., has been added to the roll of magistrates for the borough of Southport.

THE interesting series of engraved mezzotint portraits of famous physicians, surgeons, and medical writers formed early in the last century by the well-known antiquarian, T. J. Pettigrew, formerly librarian to the Duke of Sussex, will be sold by Messrs. Knight, Frank, and Rutley at their rooms in Conduit-street, London, W., on August 23rd.

VACANCIES IN RUSSIAN HOSPITALS.—The St. Petersburg authorities are exercised about the shortage of medical men for the town hospitals owing to the requirements for the army. The only capable men for the vacancies are Jews, against whom there are obstacles caused by the regulations. As it is now a purely legal question the town authorities have decided to consult counsel as to whether Jews may be invited to fill the vacancies.

LITERARY INTELLIGENCE.—Messrs. Oliver and Boyd of Edinburgh have in preparation a small volume on "Scottish Sanitary Laws and Principles of Public Health" by Dr. W. J. Brock, medical officer of health of Midlothian. This book is intended for the use of county and borough councillors, medical officers of health, and sanitary inspectors. It will be published next month.—Dr. C. J. Lewis and Mr. J. N. Lewis, Fellow of the Institute of Actuaries, have in the press a work analysing the Scottish births registered in the first year of registration. These are the only birth statistics existing in this country which contain full details as to the duration and fecundity of marriage. M. Kiaer made special reference to the existence of these Scottish statistics in his recent address on the Fecundity of Marriage to the International Statistical Institute. In this work these statistics will be comprehensively dealt with and interesting deductions will be drawn from the results. The book will be published during the autumn by the same publishers.

ROYAL CORNWALL INFIRMARY, TRURO.—The recently issued annual report of this institution states that 476 in-patients were admitted during 1904, against 392 in 1903. The out-patients numbered 1003, compared with 876 in the previous year. The cost per bed was £54 3*s.* 5*d.*, compared with £58 16*s.* in 1903. The report adds that Sir R. Harvey gave £1000 for the endowment of a bed in the women's ward in memory of Lady Harvey. The financial statement showed that the income amounted to £2113 and a favourable balance of £3 remained.

INFECTIOUS DISEASE AND ELEMENTARY SCHOOLS.—On the suggestion of Dr. E. M. Smith, medical officer of health, the York corporation health committee passed the following resolution on July 31st:—

> That this committee having been informed of the discretionary powers now granted to educational authorities by the new Code just issued, with regard to the admission to school of children under the age of five years, hereby express the hope that, in view of the extensive prevalence of infectious diseases in infants' schools in this city during the last few years and on the grounds of the general health of children of tender age, the Education Committee will in future do their utmost to discourage the attendance of children under the age of five years in all the elementary schools in the city.

ATTACK ON A RUSSIAN MEDICAL STAFF.—The *Government Gazette* of Saratov contains an account from the governor of the province of the circumstances of an attack on medical men at Balaschoff on August 3rd, where 2000 people, incensed against the medical staff on account of their having declined to serve in the province, gathered round the hotel in which the medical men were holding a conference. They sang songs and threatened them with lynch law. On the governor's interference the crowd dispersed but when he was about to convoy the medical men, who had taken refuge in the bedrooms and even attics of the hotel, under the protection of Cossacks to the railway station some of the crowd stoned them, the governor himself being wounded on the hand. With great trouble he got his *protégés* clear. After damaging some property the crowd fell upon and beat Dr. Schmeleff and Dr. Nevsoroff whom they found in the street. The report states that the proceedings were unlawful and that the guilty parties will be proceeded against and if the disturbances are repeated they will be repressed with the aid of the soldiers.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—At St. Germans (Cornwall) on August 4th Mr. J. Bedford Kerswill, M.R.C.P. Edin., M.R.C.S. Eng., who is leaving the town after practising in the district for the past 40 years, was presented with a silver two-handled tea tray, Queen Anne pattern, weighing over 130 ounces, and a silver urn to match. The tray was suitably inscribed and the arms of Mr. Kerswill were also engraved. He was also the recipient of an illuminated album containing the names of 500 subscribers. The Earl of St. Germans made the presentation on behalf of the subscribers at a public meeting and amongst others present were the Countess of St. Germans, the Countess of Dartrey, Lady Mary Dawson, the Hon. John Eliot, and Canon Westmacott. —At the Hambrook (Gloucestershire) mission room on August 5th the vicar (the Rev. W. Brooke), on behalf of the members of the Hambrook Women's Sick Club, presented Mr. W. F. B. Eadon, L.R.C.P., L.R.C.S. Edin., with a mahogany revolving book stand having a silver plate suitably inscribed in recognition of his services as lodge surgeon.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, AUGUST 9TH.

Royal Commission on Tuberculosis.

Mr. REGINALD LUCAS asked the President of the Local Government Board when it was probable that the work of the Royal Commission on Tuberculosis would be completed and a final report presented.—Mr. GERALD BALFOUR replied: It is not possible to say at present when the final report of the Royal Commission will be issued but I understand that the Commission hopes to make an interim report towards the end of the present year.

Arsenical Poisoning.

Sir CUTHBERT QUILTER asked the President of the Local Gov ment Board whether, with a view to giving effect to the recomme tions of the Royal Commission on Arsenical Poisoning, the arra ments foreshadowed in his predecessor's statement had now effected; whether the special inspector and assistant inspector, whose expenses provision was made in the estimates this year, been appointed; and, if so, what was the precise nature of the d allotted to them?—Mr. GERALD BALFOUR answered: An inspecto been appointed and arrangements are being proceeded with as t assistant inspector. It is the duty of the inspector to advise Local Government Board as to the administration of the Sale of and Drugs Acts and similar Acts, to deal with matters relating t purity and adulteration of food which are brought to the Bo notice by public analysts, medical officers of health and other obtain information upon special questions relating to the purity adulteration of food and the use of deleterious substances the and to make suitable inquiries and investigations for this pur The inspector will make a report, which will be included in the an report of the Board's medical officer, under whose direction he will

THURSDAY, AUGUST 10TH.

Sterilised Fluids.

Sir HENRY KIMBER asked the Secretary of State for War whethe accordance with the recommendation of the Advisory Medical B that all fluids employed as drinks at manœuvres, on service abroad, on active service should be sterilised by heat, suitable apparatus equipment for this purpose had been issued to the whole of the Bri troops in India and South Africa for service in the field an manœuvres; whether the service of such sterilised fluids had intrusted to specially trained men, having no other duties, each unit, as recommended by the Commission on Dysen and Enteric Fever appointed by the Secretary of State War, August, 1900; whether such specially trained men placed under the direct supervision and responsibility of offi of each unit; and whether the regulations revised in the direc of devolving responsibility upon non-medical officers in the su vision of sanitary services in barracks and camps had been issue Mr. ARNOLD-FORSTER answered: My honourable friend is mistake supposing that the Advisory Board made such a sweeping rec mendation as that stated in the question. Trials were recommen and these have been made, both on service and at manœuvres; fur investigations are still in progress. Heat sterilisation is being lar carried out at various places abroad, including India and South Afr The supervision of water-supplies and methods of water sterilisat where required, are in the hands of the local authorities and sanit officers have been appointed at home and abroad, among whose spe duties are the periodical examination of the drinking water-supp and the diffusion of knowledge of practical sanitary procedure am officers and men. The regulations referred to are contained in provisional issue of Combined Training, Part VII., Section promulgated with Army Orders of March, 1903.

Vaccination Defaulters at Derby.

Sir THOMAS ROE asked the Secretary of State for the Home Dep ment whether his attention had been drawn to the fact that distra warrants were about to be enforced against some 50 vaccinat defaulters at Derby, out of more than 20,000 who were liable to penalty for non-vaccination; and whether he would explain w Derby had been selected for the enforcement of penalties un the Vaccination Acts whilst in other large towns, where the vacci tion default was much greater, such measures were not resorted to Mr. AKERS-DOUGLAS replied: My attention was called by the Lo Government Board to the fact that no attempt was being made by t Derby police to enforce the orders of the magistrates in vaccinat cases and I have been for some time in communication with the Der watch committee on the subject. I am glad to learn that an effort now to be made to carry out the law. I have no information as to t number of defaulters in Derby who have not been prosecuted but if t number suggested by the honourable Member is even approximat accurate it points strongly to the evil which results from the failure enforce the law. I am in communication with the watch committ of another town on the same subject but I know of no other lar towns where the police have so entirely failed to enforce the orders the justices as they have at Derby.

Dogs for Vivisection.

Mr. ELLIS GRIFFITH asked the Secretary of State for the Hon Department whether his attention had been called to the fact that do were bred specially for the purpose of vivisection at the Brockwell H and other farm laboratories; and whether he would cause a return be made of the places at which dogs were being specially bred for th purpose, the laboratories at which experiments were performed them, and the nature and purposes of such experiments.—Mr. AKER DOUGLAS answered: I have made inquiries and I understand that do have been bred at Brockwell Hall and that some of the dogs so bre have been used for experiments in the laboratories. I do not think is of material importance whether dogs which are used for purposes experiment are bred on the premises or imported from elsewhere an as it is not a matter over which I have any control I fear I cann undertake to furnish the return suggested by the honourable Member.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, 19, Rue Hautefeuille, Paris.

[illegible] Moustiques et Fièvre Jaune. Par A L[illegible] à la Faculté de Médecine d [illegible] -vices Sanitaires, et Frédéri [illegible] teur de la 2· Circonscriptio [illegible]

BLACK, ADAM AND CHARLES, Soho-square, W.

The English Lakes. Painted by A. Heaton Cooper. Described by Wm. T. Palmer. Price 20*s.* net.

F. A. DAVIS COMPANY, Philadelphia.

Color-Vision and Color-Blindness. A Practical Manual for Railroad Surgeons. By J. Ellis Jennings, M.D. (Univ. Penna.), formerly Clinical Assistant, Royal London Ophthalmic Hospital, Professor of Diseases of the Eye, Medical Department, Barnes University, St. Louis. Second edition, thoroughly revised. Price, extra cloth, $1.00 net.

FISCHER, GUSTAV, Jena.

Die Bakteriologie des Blutes bei Infektionskrankheiten. Von Dr. med. Canon, Berlin. Price M.5, geb., M.6.

HARRISON AND SONS, St. Martin's lane, W.C.

Reports of the Commission appointed by the Admiralty, the War Office, and the Civil Government of Malta, for the Investigation of Mediterranean Fever, under the Supervision of an Advisory Committee of the Royal Society. Part III. Price 2s. 6d.

KARGER, S., Karlstrasse, 15, Berlin.

Grundriss der Semiotik des Harns. Fur praktische Aerzte. Von Dr. St. Serkowski, Vorsteher des stadtischen, chemisch bakteriologischen Labatoriums in Lodz. Price M.1.50.

Zur Kroenleinschen Operation. Von Dr. Josef Helbron, Privat dozent an der Universitat und I. Assistent der Universitats Augenklinik in Berlin. Aus der Universitats Augenklinik in Berlin (Direktor Geheimrat Prof. Dr. v. Michel). Price M.3.50.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ACTON, H. W., M.R.C.S., L.R.C.P., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

BARCLAY, WILLIAM BOWIE, L.R.C.P., L.R.C.S., L.M. Edin., D.P.H. Vict., has been appointed Medical Officer of Health of Weymouth.

BOND, FRANK FOURACRE, L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Medical Officer to the Trowbridge (Wilts) and District Isolation Hospital.

CUNLIFFE, THOMAS VARLEY, M.D., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Surgeon to the Oldham Infirmary.

GRANDIN, LILIAN, L.R.C.P. & S. Edin., has been appointed Medical Missionary in connexion with the new hospital at Chao Tong, China.

KELLEHER, T. A., M.B., B.S. R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Waterford District of the county of Waterford.

KELLY, W., M.B., C.M. Aberd., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

MASON, A., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Deal District of the county of Kent.

REES, W. H., M.B., F.R.C.S., has been appointed Registrar to the Bolingbroke Hospital, Wandsworth Common, S.W.

ROLSTON, JOHN R., M.R.C.S. Eng., has been appointed Honorary Consulting Ophthalmic Surgeon to the Cottage Hospital, Liskeard, and also to the Royal Dockyard Female Orphanage Asylum, Devonport.

WARD, BERNARD J., F.R.C.S. Eng., has been appointed House Surgeon to St. Peter's Hospital for Stone and Urinary Diseases, Covent Garden, London, W.C.

WILSON, A. R., M.D. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Wallasey District of the county of Cheshire.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BATH, ROYAL UNITED HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

BEDFORD, BOROUGH OF.—Medical Officer of Health. Salary £[illegible]0 per annum.

BEVERLEY, EAST RIDING LUNATIC ASYLUM.—Second Assistant Medical Officer. Salary £150 per annum, with board, apartments, and washing.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's road.—Non resident House Surgeon for six months, renewable. Salary at rate of £75 per annum.

CAIRO, KASR EL AINI HOSPITAL.—Resident Medical Officer. Salary £[illegible]0 (Egyptian) with light and quarters.

CARDIFF INFIRMARY.—Assistant House Surgeon for six months, renewable. Salary at rate of £[illegible]0 per annum, with board, washing, and apartments.

CHEETHAM, MANCHESTER VICTORIA MEMORIAL JEWISH HOSPITAL.—Resident Medical Officer. Salary £[illegible]0 per annum, with board, apartments, attendance, &c.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £[illegible] a year, with board, apartments, and laundry.

COLCHESTER, ESSEX AND COLCHESTER GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and residence.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon for six months, renewable. Salary £60 per annum, with rooms, board, washing, and attendance.

DARENTH, NEAR DARTFORD, METROPOLITAN ASYLUMS BOARD ASYLUM.—Second and Third Assistant Medical Officers, unmarried. Salaries respectively £180 and £150 per annum, with rations, lodging, attendance, and washing.

DUDLEY, THE GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, attendance, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £25 per annum, with board and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon for six months. Honorarium of £25, with board, residence, &c.

GLASGOW, ROYAL HOSPITAL FOR SICK CHILDREN.—Resident House Surgeon. Salary at rate of £50 per annum, with board and laundry. Also Assistant at Dispensary for six months. Salary at rate of £100 per annum.

HOSPITAL FOR EPILEPSY AND PARALYSIS, Maida Vale.—Resident Medical Officer for six months. Salary at rate of £50 a year, with board and washing.

ISLE OF MAN, NOBLE'S HOSPITAL AND DISPENSARY, Douglas.—Resident House Surgeon, unmarried. Salary £90 a year, with board and washing.

LEITH HOSPITAL.—House Surgeon, Assistant House Surgeon, Assistant House Physician, and Physician in the Out door Department, all for six months.

LIVERPOOL, CITY OF, INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, washing, and lodging.

LIVERPOOL EYE AND EAR INFIRMARY, Myrtle-street.—House Surgeon. Salary £80 per annum, with board and residence.

MAIDSTONE, KENT COUNTY OPHTHALMIC HOSPITAL.—House Surgeon. Salary £100, with board and residence.

OXFORD RADCLIFFE INFIRMARY.—House Physician, also Junior House Surgeon, both for six months and unmarried. Salary of former at rate of £80 and of latter at rate of £40 per annum. Also Honorary Assistant Physician and Medical Registrar.

PARISH OF ST. MARYLEBONE.—District Medical Officer. Salary £90 per annum.

PECKHAM HOUSE ASYLUM, London, S.E.—Senior Assistant Medical Officer. Salary £200 per annum.

PENDLEBURY, MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer, unmarried, for six months, eligible for election as Senior Medical Officer for another six months. Salary at rate of £[illegible]0 a year when Junior, and £100 a year as Senior, with board and lodging.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta street, Covent Garden, London, W.C.—Junior House Surgeon for six months. Salary at rate of £50 a year, with board, lodging, and washing.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at rate of £40 per annum, with board, washing, and residence.

STRAITS SETTLEMENTS, MUNICIPALITY OF THE TOWN OF SINGAPORE.—Assistant Municipal Health Officer. Salary £400 per annum, rising to £450.

TYNEMOUTH, COUNTY BOROUGH OF.—Medical Officer of Health. Salary £300 per annum, increasing to £400.

UNIVERSITY COLLEGE, London.—Special Officer in charge of the Ear and Throat Department.

WALLINGFORD, BERKSHIRE ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £140, with board, apartments, attendance, &c.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for six months. Salary at rate of £75 per annum, with board, residence, &c.

WEST LONDON HOSPITAL, Hammersmith road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry provided.

YORK CITY LUNATIC ASYLUM.—Resident Medical Officer. Salary £400 per annum, with house, coal, laundry, &c.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Stirling, in the county of Stirling, and at Aldershot, in the county of Hants.

Births, Marriages, and Deaths.

BIRTHS.

BOWER.—On August 13th, at Elton House, Gloucester, the wife of E. Dykes Bower, M.D., of a son.

FENWICK.—On August 10th, at Harley street, W., the wife of W. Soltau Fenwick, M.D., of a son.

TYRRELL.—On August 9th, at Whitehall-court, S.W., the wife of Lieutenant Colonel C. R. Tyrrell, R.A.M.C., of a son.

WILLIAMS.—On August 10th, at Abbotsfield, Slough, Bucks, the wife of Ralph Paul Williams, M.D. Lond., of a son.

DEATH.

KILROY.—On August 13th, at Paramé, France, Philip le Feuvre Kilroy, Lieut.-Col. R.A.M.C., of Eastfield, Ryde, I.W., aged 61 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

CHAULMOOGRA OIL AND SYPHILIS

To the Editors of THE LANCET

SIRS,—With reference to the query in THE LANCET of August 12th by Dr Jos Fr von Crippa, regarding the therapeutic properties, &c, of chaulmoogra oil I may say that throughout a protracted residence in India, during which much attention was devoted by me to indigenous drugs, I never heard of this oil being used by European or native practitioners in the treatment of syphilis, but it had considerable repute as an internal or external remedy in leprosy and skin diseases In the year 1856 there appeared in the *Indian Annals of Medical Science* an article regarding its use in the treatment of secondary syphilis but this notice does not appear to have led to any practical results Further remarks regarding the medicinal effects of chaulmoogra, as used in the East, &c, will be found in an article by Dr F Mouat in the *Indian Annals of Medical Science* for 1854 and in a paper by Dr Hobson in the *Edinburgh Medical Journal* for 1855 "The Pharmacopœia of India' (1868), p 440, "Bengal Dispensatory' (1842), p 206, and "Pharmacographia Indica" (1890), vol i, p 142, may also be consulted

I am, Sirs, *yours faithfully,*

GEORGE BIDIE, C I E,

August 12th, 1905 Surgeon General.

To the Editors of THE LANCET

SIRS,—In reply to the inquiry in THE LANCET of August 12th, 1905, p. 498, as to the therapeutic action, active principle, and general characters of oleum gynocardiæ (chaulmoogra oil) especially in the treatment of syphilis, I should like to say that I have searched in vain for details of the use of chaulmoogra oil in syphilis Martindale's "Extra Pharmacopœia" mentions secondary syphilis among other diseases for the treatment of which it is useful and gives several references to medical literature one of which may relate to its use in syphilis There are one or two points about chaulmoogra oil which are worthy of notice The oil has been described in text-books as the product of the seeds of *Gynocardia odorata*, but as a matter of fact its origin is doubtful According to Mr E M Holmes curator of the Museum of the Pharmaceutical Society (*Pharmaceutical Journal*, [4], x, p 522), three varieties of seeds pass under the name chaulmoogra These are *Gynocardia odorata*, R Br, genuine chaulmoogra seeds growing in Eastern India, *Hydnocarpus anthelmintica*, Pierre, a Siamese product, and *H wightiana*, Blume, a native of Western India, the oil of which is employed on the Malabar coast in cutaneous diseases and ophthalmia and for ulcers on the feet It has been taken internally for leprosy, syphilis, and rheumatism, but, like chaulmoogra oil, acts occasionally as a gastro intestinal irritant (Watt, Dictionary of Economic Products of India, vol iv, p 309) The drug finds a place in the Pharmacopœia of India and much of the published literature refers to its value in the treatment of cutaneous diseases, particularly leprosy The ointment appears to be the most valued preparation of chaulmoogra oil, but it is given internally in the form of capsules or a milk emulsion in doses of from 2 to 15 grains Saline aperients should be given at the same time The therapeutic value of the plants which yield the oil would appear to be similar, but more definite information is required on this point The most recent work on chaulmoogra oil is that of Dr F B Power and Mr F H Gornall (Proceedings of the Chemical Society, 20, 135) who differ from other authorities in almost all essential points Thus they state that the plant which yields the chaulmoogra oil of commerce is *Taraktogenos Kurzii* (King), a native of Burma, and not *Gynocardia odorata*, R Br The seeds of *Taraktogenos Kurzii* contain a hydrolytic enzyme and an unstable cyanogen compound which react to form hydrogen cyanide All previous workers have ascribed the therapeutic activity of the drug to "gynocardic acid, but Dr Power and Mr Gornall consider this substance to be a mixture of several fatty acids one of which they have isolated and named chaulmoogric acid It would appear therefore, that the text books are uniformly wrong in describing the source and active principle of chaulmoogra oil The drug has so great a reputation in India that a comparative pharmacological investigation of the products of the various plants yielding commercial chaulmoogra oil seems to be desirable The results of Dr Power and Mr Gornall require to be supplemented by a comparative pharmacological investigation of the so called active principle "gynocardic acid' and chaulmoogric acid —I am, Sirs, yours faithfully,

SEARCHLIGHT

A PROBLEM IN ACOUSTICS

To the Editors of THE LANCET

SIRS,—I shall be much gratified if any of your readers can explain the *cause* of the following phenomenon I have asked several aurists but not one of them could give me a definite reply The majority confessed their ignorance One said that my auditory canal must be abnormally sensitive Another said it might be a "muscle tone' but as he had forgotten what exactly was a muscle tone we "got no forrader" If I advance my jaw to its fullest extent and bite upon the upper lip I get a tinnitus in both ears The sound is like the cry of a bat, an extremely high note, which I have copied exactly on a Galton's whistle If I keep the jaw *fixed in the* above position the sound gradually lessens and dies away in 20 seconds The same thing obtains, but to a less extent, if I open widely my mouth when eating These motions, doubtless, put pressure upon the Eustachian tubes and I can conceive that an impulse may be imparted to the contained air, but although I know little about the ear I do know something of acoustics and I *cannot see how* such an impulse can give rise to a musical note lasting 20 seconds —I am, Sirs, yours faithfully,

August 14th, 1905 A P S

*** A muscle tone is the tone produced by the contraction of a muscle and is, we believe one of 16 vibrations a second But the note of a bat is almost the highest audible sound Possibly the sound heard by our correspondent is caused by the air passing through a small perforation in the membrana tympani Perhaps some of our readers can suggest another explanation.—ED L.

THE TREATMENT OF MEDICAL MEN AT HARROGATE BATHS

To the Editors of THE LANCET

SIRS,—Some days ago on arrival here I went to the manager's office at the Royal Baths to ask for the usual pass to get the waters and book of six free tickets for baths, producing the cover of my last year's pass I was curtly informed by the present manager that as I was not in active private practice and that expenses were being curtailed I could not be granted them, I suppose on the principle that new brooms sweep clean I pointed out that his predecessor last year had given them without any demur and that no objection had ever been made to my getting free passes at any of the other English or continental spas that I had been to, however, he was obdurate I think such action commercially impolitic and ungrateful to our profession and one cannot wonder at the resort of so many members to foreign spas where they are treated with every consideration I presume also that the fact of my having served my country for over 27 years abroad with some distinction would in these days militate against any such trifling concession I merely draw attention to it to save any others of my *confrères* exposing themselves to a similar rebuff

I am, Sirs, yours faithfully,

M A, M D, M R C S Eng

August 7th, 1905 (Lieut Col (Retired), I M Service)

A SCREW CORKED STOPPER AND BOTTLE

APART from the use of antimony sulphide in the red rubber ring, rubber itself is likely to impart a disagreeable taste to liquids with which it comes into contact This may be avoided, of course, by substituting a cork ring but the material must be of a selected kind in order that it may form an air tight joint when the stopper is screwed down We were at first sceptical that cork could be successfully employed in this way owing to the irregularities in its structure By submitting, however, the cork to a series of pressure trials in the first instance, and by adopting a properly constructed neck on the bottle, we find that Messrs Margett and Mitchell of 47, Tooley street, London, S E, have produced a satisfactory screw stopper with a cork ring We tested it by placing in the bottle some water under slight pressure of carbonic acid gas After the lapse of several weeks the water was perfectly brisk and sparkling, so that there could not have been any serious leakage Nor had the taste of the water deteriorated For preserving aerated beverages we may conclude that cork is superior to rubber owing to the fact that the latter material, though probably forming a more secure joint, has a tendency to taint the liquid

PREMATURE BALDNESS

To the Editors of THE LANCET

SIRS,—Could any of your readers tell me whether they have known any internal treatment of any avail for premature loss of hair? I know that in text books on the subject our dermatologists can recommend nothing except the giving of a drug to improve the tone of the system, if such need exists, or to alter any constitutional tendency that a patient might show In the case of an individual who seems in perfect health is there anything else one can do besides applying stimulating liniments? I have no faith in any internal treatment, but thought that some other medical man might be able to give me a wrinkle on the subject

I am Sirs, yours faithfully,

Halton Chambers, King street, W C C STANFORD READ

"INFAMOUS CONDUCT'

To the Editors of THE LANCET

SIRS —As considerable haziness exists amongst junior practitioners as to what constitutes "infamous conduct" in a professional sense, it would be very acceptable to many if the registrar of the General Medical Council or some *other* expert would define and tabulate, especially noting what constitutes sufficient grounds for removal from the Register

I am, Sirs, yours faithfully,

INQUIRER

August 15th, 1905

◆

Mr L E Laurie —Our correspondent's idea is not a bad one, but there are already many bottles for poisons either made of a particular shape or with some particular kind of stopper which should prevent mistakes Perhaps the commonest cause of poisoning is when careless people put poison, as carbolic acid, into gingerbeer bottles or some other kind of bottle which has held a harmless material previously.

Holiday.—In the absence of any provision with regard to holidays in the usual agreement with an assistant it is customary for the principal to allow his assistant a holiday of about two weeks and if any help is required during his absence it should be paid for by the principal. The salary would, of course, be paid to the assistant just the same during absence.

Mr L. Broughton.—Clearly there will be variation.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.) Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physician, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.).

TUESDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.) Metropolitan (2.30 P.M.) London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.)

WEDNESDAY (23rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.) Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M. National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.) London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.)

THURSDAY (24th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.) Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.)

FRIDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.)

SATURDAY (26th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.)

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (21st).—POST GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.)—3 P.M. Mr Paget: Surgical Cases in the Wards.

TUESDAY (22nd).—POST GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.) 5 P.M. Dr Robinson On Gynæcology.

WEDNESDAY (23rd).—POST GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.)—4.15 P.M. Dr Russell Medical Cases.

THURSDAY (24th).—POST GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.)—5 P.M. Dr Davis Tonsillitis and its Treatment.

FRIDAY (25th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.)—5 P.M. Lecture:—Mr Paget Surgical Cases.

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1905, which was completed with the issue of June 24th, and the Title-page to the Volume, were given in THE LANCET of July 1st.

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METEOROLOGICAL READINGS.

(Taken daily at noon by Steward's Instruments.)

THE LANCET Office, August 17th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Aug 11	30 01	N.W	0·24	123	69	54	56	60	Cloudy
" 12	30 25	S W	...	115	73	53	58	60	Fine
" 13	30·29	S W.	...	113	70	57	59	63	Cloudy
" 14	30 13	S.E.	...	120	73	55	59	65	Fine
" 15	30 07	E.	...	115	75	57	60	65	Cloudy
" 16	30 00	E	...	107	71	60	60	64	Cloudy
" 17	30 11	E.	...	125	70	55	57	61	Fine

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An Address
ON
EVOLUTION.

Delivered before the British Association for the Advancement of Science, Part I. at Cape Town on August 15th, and Part II. at Johannesburg on August 30th, 1905,

BY PROFESSOR G. H. DARWIN, M.A., LL.D., PH.D., F.R.S.,
THE PRESIDENT.

PART I.

GENTLEMEN,—Bartholomeu Diaz, the discoverer of the Cape of Storms, spent 16 months on his voyage, and the little flotilla of Vasco da Gama, sailing from Lisbon on July 8th, 1497, only reached the Cape in the middle of November. These bold men, sailing in their puny fishing smacks to unknown lands, met the perils of the sea and the attacks of savages with equal courage. How great was the danger of such a voyage may be gathered from the fact that less than half the men who sailed with da Gama lived to return to Lisbon. 408 years have passed since that voyage, and a ship of 13,000 tons has just brought us here, in safety and luxury, in but little more than a fortnight. How striking are the contrasts presented by these events! On the one hand compare the courage, the endurance, and the persistence of the early navigators with the little that has been demanded of us; on the other hand, consider how much man's power over the forces of Nature has been augmented during the past four centuries. The capacity for heroism is probably undiminished, but certainly the occasions are now rarer when it is demanded of us. If we are heroes, at least but few of us ever find it out, and when we read stories of ancient feats of courage it is hard to prevent an uneasy thought that, notwithstanding our boasted mechanical inventions, we are perhaps degenerate descendants of our great predecessors. Yet the thought that to-day is less romantic and less heroic than yesterday has its consolation, for it means that the lot of man is easier than it was. Mankind, indeed, may be justly proud that this improvement has been due to the successive efforts of each generation to add to the heritage of knowledge handed down to it by its predecessors, whereby we have been born to the accumulated endowment of centuries of genius and labour.

I am told that in the United States the phrase "I want to know" has lost the simple meaning implied by the words and has become a mere exclamation of surprise. Such a conventional expression could hardly have gained currency except amongst a people who aspire to knowledge. The dominance of the European race in America, Australasia, and South Africa has no doubt arisen from many causes, but amongst these perhaps the chief one is that not only do "we want to know," but also that we are determined to find out. And now within the last quarter of a century we have welcomed into the ranks of those who "want to know" an Oriental race, which has already proved itself strong in the peaceful arts of knowledge. I take it, then, that you have invited us because you want to know what is worth knowing; and we are here because we want to know you, to learn what you have to tell us, and to see that South Africa of which we have heard so much. The hospitality which you are offering us is so lavish, and the journeys which you have organised are so extensive, that the cynical observer might be tempted to describe our meeting as the largest picnic on record. Although we intend to enjoy our picnic with all our hearts, yet I should like to tell the cynic, if he is here, that perhaps the most important object of these conferences is the opportunity which they afford for personal intercourse between men of like minds who live at the remotest corners of the earth. We shall pass through your land with the speed and the voracity of a flight of locusts; but, unlike the locust, we shall, I hope, leave behind us permanent fertilisation in the form of stimulated scientific and educational activity. And this result will ensue whether or not we who have come from Europe are able worthily to sustain the lofty part of prophets of science. We shall try our best to play to your satisfaction on the great stage upon which you call on us to act, and if when we are gone you shall, amongst yourselves, pronounce the performance a poor one, yet the fact will remain that the meeting has embodied in a material form the desire that the progress of this great continent shall not be merely material; and such an aspiration secures its own fulfilment. However small may be the tangible results of our meeting, we shall always be proud to have been associated with you in your efforts for the advancement of science.

We do not know whether the last hundred years will be regarded for ever as the *sæculum mirabile* of discovery, or whether it is but the prelude to yet more marvellous centuries. To us living men, who scarcely pass a year of our lives without witnessing some new marvel of discovery or invention, the rate at which the development of knowledge proceeds is truly astonishing; but from a wider point of view the scale of time is relatively unimportant, for the universe is leisurely in its procedure. Whether the changes which we witness be *fast* or *slow* they form a part of a long sequence of events which begin in some past of immeasurable remoteness and tend to some end which we cannot foresee. It must always be profoundly interesting to the mind of man to trace successive cause and effect in the chain of events which make up the history of the earth and all that lives on it, and to speculate on the origin and future fate of animals and of planets, suns, and stars. I shall try, then, to set forth in my address some of the attempts which have been made to formulate evolutionary speculation. This choice of a subject has, moreover, been almost forced on me by the scope of my own scientific work and it is, I think, justified by the name which I bear. It will be my fault and your misfortune if I fail to convey to you some part of the interest which is naturally inherent in such researches.

The man who propounds a theory of evolution is attempting to reconstruct the history of the past by means of the circumstantial evidence afforded by the present. The historian of man, on the other hand, has the advantage over the evolutionist in that he *has* the written records of the past on which to rely. The discrimination of the truth from amongst discordant records is frequently a work demanding the highest qualities of judgment; yet when this end is attained it remains for the historian to convert the arid skeleton of facts into a living whole by clothing it with the flesh of human motives and impulses. For this part of his task he needs much of that power of entering into the spirit of other men's lives which goes to the making of a poet. Thus the historian should possess not only the patience of the man of science in the analysis of facts, but also the imagination of the poet to grasp what the facts have meant. Such a combination is rarely to be found in equal perfection on both sides and it would not be hard to analyse the works of great historians so as to see which quality was predominant in each of them. The evolutionist is spared the surpassing difficulty of the human element, yet he also needs imagination, although of a different character from that of the historian. In its lowest form his imagination is that of the detective who reconstructs the story of a crime: in its highest it demands the power of breaking loose from all the trammels of convention and education and of imagining something which has never occurred to the mind of man before. In every case the evolutionist must form a theory for the facts before him, and the great theorist is only to be distinguished from the fantastic fool by the sobriety of his judgment—a distinction, however, sufficient to make one rare and the other only too common.

The test of a scientific theory lies in the number of facts which it groups into a connected whole; it ought besides to be fruitful in pointing the way to the discovery and coördination of new and previously unsuspected facts. Thus a good theory is in effect a cyclopædia of knowledge, susceptible of indefinite extension by the addition of supplementary volumes. Hardly any theory is all true and many are not all false. A theory may be essentially at fault and yet point the way to truth and so justify its temporary existence. We should not, therefore, totally reject one or other of two rival theories on the ground that they seem, with our present knowledge, mutually inconsistent, for it is likely that both may contain important elements of truth. The theories of which I shall have to speak hereafter may often appear discordant with one another according to our present lights. Yet we must not scruple to pursue the several divergent lines of thought to their logical conclusions, relying on future discovery to eliminate the false and to reconcile together the truths which form part of each of them. In the mouths of the unscientific evolution is often spoken of as almost synonymous with the evolution of the various species of animals on the earth and this again is sometimes thought to be practically the same thing as the theory of natural selection. Of course, those who are conversant with the history of scientific ideas are aware that a belief in the gradual and orderly transformation of Nature, both animate and inanimate, is of great antiquity. We may liken the facts on which theories of evolution are based to a confused heap of beads, from which a keen-sighted searcher after truth picks out and strings together a few which happen to catch his eye as possessing certain resemblances. Until recently theories of evolution in both realms of Nature were partial and discontinuous and the chains of facts were correspondingly short and disconnected. At length the theory of natural selection, by formulating the cause of the divergence of forms in the organic world from the parental stock, furnished the naturalist with a clue by which he examined the disordered mass of facts before him, and he was thus enabled to go far in deducing order where chaos had ruled before, but the problem of reducing the heap to perfect order will probably baffle the ingenuity of the investigator for ever. So illuminating has been this new idea that, as the whole of nature has gradually been re-examined by its aid, thousands of new facts have been brought to light and have been strung in due order on the necklace of knowledge. Indeed, the transformation resulting from the new point of view has been so far-reaching as almost to justify the misapprehension of the unscientific as to the date when the doctrines of evolution first originated in the mind of man.

It is not my object, nor indeed am I competent, to examine the extent to which the theory of natural selection has needed modification since it was first formulated by my father and Wallace. But I am surely justified in maintaining that the general principle holds its place firmly as a permanent acquisition to modes of thought. Evolutionary doctrines concerning inanimate nature, although of much older date than those which concern life, have been profoundly affected by the great impulse of which I have spoken. It has thus come about that the origin and history of the chemical elements and of stellar systems now occupy a far larger space in the scientific mind than was formerly the case. The subject which I shall discuss to-night is the extent to which ideas, parallel to those which have done so much towards elucidating the problems of life, hold good also in the world of matter; and I believe that it will be possible to show that in this respect there exists a resemblance between the two realms of Nature, which is not merely fanciful. It is proper to add that as long ago as 1873 Baron Karl du Prel discussed the same subject from a similar point of view in a book entitled "The Struggle for Life in the Heavens."[1] Although inanimate matter moves under the action of forces which are incomparably simpler than those governing living beings, yet the problems of the physicist and the astronomer are scarcely less complex than those which present themselves to the biologist. The mystery of life remains as impenetrable as ever and in his evolutionary speculations the biologist does not attempt to explain life itself, but, adopting as his unit the animal as a whole, discusses its relationships to other animals and to the surrounding conditions. The physicist, on the other hand, is irresistibly impelled to form theories as to the intimate constitution of the ultimate parts of matter and he desires further to piece together the past histories and the future fates of planets, stars, and nebulæ. If, then, the speculations of the physicist seem in some respects less advanced than those of the biologist, it is chiefly because he is more ambitious in his aims. Physicists and astronomers have not yet found their Johannesburg or Kimberley; but, although we are still mere prospectors, I am proposing to show you some of the dust and diamonds which we have already extracted from our surface mines. The fundamental idea in the theory of natural selection is the persistence of those types of life which are adapted to their surrounding conditions, and the elimination by extermination of ill-adapted types. The struggle for life amongst forms possessing a greater or less degree of adaptation to slowly varying conditions is held to explain the gradual transmutation of species. Although a different phraseology is used when we speak of the physical world, yet the idea is essentially the same.

The point of view from which I wish you to consider the phenomena of the world of matter may be best explained if, in the first instance, I refer to political institutions, because we all understand, or fancy we understand, something of politics, whilst the problems of physics are commonly far less familiar to us. This illustration will have a further advantage in that it will not be a mere parable, but will involve the fundamental conception of the nature of evolution. The complex interactions of man with man in a community are usually described by such comprehensive terms as the State, the Commonwealth, or the Government. Various States differ widely in their constitution and in the degree of the complexity of their organisation, and we classify them by various general terms, such as autocracy, aristocracy, or democracy, which express somewhat loosely their leading characteristics. But for the purpose of showing the analogy with physics, we need terms of wider import than those habitually used in politics. All forms of the State imply inter-relationship in the actions of men, and action implies movement. Thus the State may be described as a configuration or arrangement o a community of men; or we may say that it implies definite mode of motion of man—that is to say, an organise scheme of action of man on man. Political history gives a account of the gradual changes in such configurations o modes of motion of men as have possessed the quality o persistence or of stability to resist the disintegrating in fluence of surrounding circumstances. In the world of li the naturalist describes those forms which persist as species similarly the physicist speaks of stable configurations o modes of motion of matter; and the politician speaks o States. The idea at the base of all these conceptions is tha of stability, or the power of resisting disintegration. I other words, the degree of persistence or permanence of species, of a configuration of matter, or of a State depend on the perfection of its adaptation to its surroundin conditions.

If we trace the history of a State we find the degree o its stability gradually changing, slowly rising to a maximum and then slowly declining. When it falls to nothing revolution ensues and a new form of government is estab lished. The new mode of motion or government has at firs but slight stability, but it gradually acquires strength an permanence, until in its turn the slow decay of stability lead on to a new revolution. Such crises in political history ma give rise to a condition in which the State is incapable o perpetuation by transformation. This occurs when a savag tribe nearly exterminates another tribe and leads the fev survivors into slavery; the previous form of government the becomes extinct. The physicist, like the biologist and th historian, watches the effect of slowly varying external conditions; he sees the quality of persistence or stabilit gradually decaying until it vanishes, when there ensues wha is called, in politics, a revolution.

These considerations lead me to express a doubt whethe biologists have been correct in looking for continuous transformation of species. Judging by analogy we should rathe expect to find slight continuous changes occurring during a long period of time, followed by a somewhat sudden transformation into a new species or by rapid extinction. However this may be, when the stability of a mode of motio vanishes the physicist either finds that it is replaced by a new persistent type of motion adapted to the changed conditions, or perhaps that no such transformation is possible and that the mode of motion has become extinct. The evanescent type of animal life has often been preserved fo us, fossilised in geological strata; the evanescent form of government is preserved in written records or in the customs of savage tribes; but the physicist has to pursue his investigations without such useful hints as to the past. The time-scale in the transmutation of species of animals is furnished by the geological record, although it is not possible to translate that record into years. As we shall see hereafter, the time needed for a change of type in atoms or molecules may be measured by millionths of a second, while in the history of the stars continuous changes occupy millions of years. Notwithstanding this gigantic contrast in speed, yet the process involved seems to be essentially the same. It is hardly too much to assert that, if the conditions which determine stability of motion could be accurately formulated throughout the universe, the past history of the cosmos and its future fate would be unfolded. How indefinitely far we stand removed from such a state of knowledge will become abundantly clear from the remainder of my address.

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[1] Der Kampf um's Dasein am Himmel (zweite Auflage), Denicke, Berlin, 1876.

The study of stability and instability then furnishes the problems which the physicist and biologist alike attempt to solve. The two classes of problems differ principally in the fact that the conditions of the world of life are so incomparably more intricate than those of the world of matter that the biologist is compelled to abandon the attempt to determine the absolute amount of the influence of the various causes which have affected the existence of species. His conclusions are merely qualitative and general and he is almost universally compelled to refrain from asserting even in general terms what are the reasons which have rendered one form of animal life stable and persistent and another unstable and evanescent. On the other hand, the physicist, as a general rule, does not rest satisfied unless he obtains a quantitative estimate of various causes and effects on the systems of matter which he discusses. Yet there are some problems of physical evolution in which the conditions are so complex that the physicist is driven, as is the biologist, to rest satisfied with qualitative rather than quantitative conclusions. But he is not content with such crude conclusions except in the last resort and he generally prefers to proceed by a different method. The mathematician mentally constructs an ideal mechanical system or model which is intended to represent in its leading features the system he wants to examine. It is often a task of the utmost difficulty to devise such a model and the investigator may perchance unconsciously drop out as unimportant something which is really essential to represent actuality. He next examines the conditions of his ideal system and determines, if he can, all the possible stable and unstable configurations, together with the circumstances which will cause transitions from one to the other. Even when the working model has been successfully imagined, this latter task may often overtax the powers of the mathematician. Finally, it remains for him to apply his results to actual matter and to form a judgment of the extent to which it is justifiable to interpret nature by means of his results.

The remainder of my address will be occupied by an account of various investigations which will illustrate the principles and methods which I have now explained in general terms.

The fascinating idea that matter of all kinds has a common substratum is of remote antiquity. In the middle ages the alchemists, inspired by this idea, conceived the possibility of transforming the baser metals into gold. The sole difficulty seemed to them the discovery of an appropriate series of chemical operations. We now know that they were always indefinitely far from the goal of their search, yet we must accord to them the honour of having been the pioneers of modern chemistry. The object of alchemy, as stated in modern language, was to break up or disassociate the atoms of one chemical element into its component parts and afterwards to reunite them into atoms of gold. Although even the dissociative stage of the alchemistic problem still lies far beyond the power of the chemist, yet modern researches seem to furnish a sufficiently clear idea of the structure of atoms to enable us to see what would have to be done to effect a transformation of elements. Indeed, in the complex changes which are found to occur spontaneously in uranium, radium, and the allied metals we are probably watching a spontaneous dissociation and transmutation of elements. Natural selection may seem at first sight as remote as the poles asunder from the ideas of the alchemist, yet dissociation and transmutation depend on the instability and regained stability of the atom and the survival of the stable atom depends on the principle of natural selection. Until some ten years ago the essential diversity of the chemical elements was accepted by the chemist as an ultimate fact, and indeed the very name of atom, or that which cannot be cut, was given to what was supposed to be the final indivisible portion of matter. The chemist thus proceeded in much the same way as the biologist who, in discussing evolution, accepts the species as his working unit. Accordingly, until recently the chemist discussed working models of matter of atomic structure and the vast edifice of modern chemistry has been built with atomic bricks. But within the last few years the electrical researches of Lenard, Roentgen, Becquerel, the Curies, of my colleagues Larmor and Thomson, and of a host of others, have shown that the atom is not indivisible and a flood of light has been thrown thereby on the ultimate constitution of matter. Amongst all these fertile investigators it seems to me that Thomson stands pre-eminent, because it is principally through him that we are to-day in a better position for picturing the structure of an atom than was ever the case before. Even if I had the knowledge requisite for a complete exposition of these investigations the limits of time would compel me to confine myself to those parts of the subject which bear on the constitution and origin of the elements.

It has been shown, then, that the atom, previously supposed to be indivisible, really consists of a large number of component parts. By various convergent lines of experiment it has been proved that the simplest of all atoms—namely, that of hydrogen—consists of about 800 separate parts; while the number of parts in the atom of the denser metals must be counted by tens of thousands. These separate parts of the atom have been called corpuscles or electrons, and may be described as particles of negative electricity. It is paradoxical, yet true, that the physicist knows more about these ultra-atomic corpuscles and can more easily count them than is the case with the atoms of which they form the parts. The corpuscles, being negatively electrified, repel one another just as the hairs on a person's head mutually repel one another when combed with a vulcanite comb. The mechanism is as yet obscure whereby the mutual repulsion of the negative corpuscles is restrained from breaking up the atom, but a positive electrical charge or something equivalent thereto must exist in the atom so as to prevent disruption. The existence in the atom of this community of negative corpuscles is certain and we know further that they are moving with speeds which may in some cases be comparable to the velocity of light—namely, 200,000 miles a second. But the mechanism whereby they are held together in a group is hypothetical.

It is only just a year ago that Thomson suggested, as representing the atom, a mechanical or electrical model the properties of which could be accurately examined by mathematical methods. He would be the first to admit that his model is at most merely a crude representation of actuality, yet he has been able to show that such an atom must possess mechanical and electrical properties which simulate, with what Whetham describes as "almost Satanic exactness," some of the most obscure and yet most fundamental properties of the chemical elements. "Se non è vero, è ben trovato," and we are surely justified in believing that we have the clue which the alchemists sought in vain. Thomson's atom consists of a globe charged with positive electricity, inside which there are some thousand or thousands of corpuscles of negative electricity revolving in regular orbits with great velocities. Since two electrical charges repel one another if they are of the same kind, and attract one another if they are of opposite kinds, the corpuscles mutually repel one another, but all are attracted by the globe containing them. The forces called into play by these electrical interactions are clearly very complicated and you will not be surprised to learn that Thomson found himself compelled to limit his detailed examination of the model atom to one containing about 70 corpuscles. It is indeed a triumph of mathematical power to have determined the mechanical conditions of such a miniature planetary system as I have described.

It appears that there are definite arrangements of the orbits in which the corpuscles must revolve if they are to be persistent or stable in their motions. For the purpose of general discussion, which is all that I shall attempt, you may take it that the number of corpuscles in such a community is fixed, and we may state that definite numbers of corpuscles are capable of association in stable communities of definite types. An infinite number of communities are possible, possessing greater or lesser degrees of stability. Thus the corpuscles in one such community might make thousands of revolutions in the orbits before instability declared itself; such an atom might perhaps last for a long time as estimated in millionths of seconds, but it must finally break up and the corpuscles must disperse or rearrange themselves after the ejection of some of their number. We are thus led to conjecture that the several chemical elements represent those different kinds of communities of corpuscles which have proved by their stability to be successful in the struggle for life. If this is so, it is almost impossible to believe that the successful species have existed for all time and we must hold that they originated under conditions about which I must forbear to follow Sir Norman Lockyer in speculating. But if the elements were not eternal in the past we must ask whether there is reason to believe that they will be eternal in the future. Now, although the conception of the decay of an element and its spontaneous transmutation into another element would have seemed absolutely repugnant to the chemist until recently; yet analogy with other moving systems seems to suggest that the elements are not eternal. At any rate, it is of interest to pursue to its end the history of the model atom which has proved to be so successful in imitating the properties of matter. The laws which govern electricity in motion indicate that such an atom must be radiating or losing energy, and therefore a time must come when it will run down, as a clock does. When this time comes it will spontaneously transmute itself into an element which needs less energy than was required in the former state. Thomson conceives that an atom might be constructed after his model so that its decay should be very slow. It might, he thinks, be made to run for a million years but it would not be eternal.

Such a conclusion is an absolute contradiction to all that was known of the elements until recently, for no symptoms of decay are perceived and the elements existing in the solar system must already have lasted for millions of years. Nevertheless, there is good reason to believe that in radium and in other elements possessing very complex atoms we do actually observe that break-up and spontaneous re-arrangement which constitute a transmutation of elements. It is impossible as yet to say how science will solve this difficulty, but future discovery in this field must surely prove deeply interesting. It may well be that the train of thought which I have sketched will ultimately profoundly affect the material side of human life, however remote it may now seem from our experiences of daily life.

I have not as yet made any attempt to represent the excessive minuteness of the corpuscles of the existence of which we are now so confident, but as an introduction to what I have to speak of next it is necessary to do so. To obtain any adequate conception of their size we must betake ourselves to a scheme of threefold magnification. Lord Kelvin has shown that if a drop of water were magnified to the size of the earth the molecules of water would be of a size intermediate between that of a cricket-ball and of a marble. Now each molecule contains three atoms, two being of hydrogen and one of oxygen. The molecular system probably presents some sort of analogy with that of a triple star, the three atoms, replacing the stars, revolving about one another in some sort of dance which cannot be exactly described. I doubt whether it is possible to say how large a part of the space occupied by the whole molecule is occupied by the atoms, but perhaps the atoms bear to the molecule some such relationship as the molecule to the drop of water referred to. Finally, the corpuscles may stand to the atom in a similar scale of magnitude. Accordingly a threefold magnification would be needed to bring these ultimate parts of the atom within the range of our ordinary scales of measurement.

I have already considered what would be observed under the triply powerful microscope and must now return to the intermediate stage of magnification, in which we consider those communities of atoms which form molecules. This is the field of research of the chemist. Although prudence would tell me that it would be wiser not to speak of a subject of which I know so little, yet I cannot refrain from saying a few words. The community of atoms in water has been compared with a triple star, but there are others known to the chemist in which the atoms are to be counted by fifties and hundreds, so that they resemble constellations. I conceive that here again we meet with conditions similar to those which we have supposed to exist in the atom. Communities of atoms are called chemical combinations and we know that they possess every degree of stability. The existence of some is so precarious that the chemist in his laboratory can barely retain them for a moment; others are so stubborn that he can barely break them up. In this case dissociation and reunion into new forms of communities are in incessant and spontaneous progress throughout the world. The more persistent or more stable combinations succeed in their struggle for life and are found in vast quantities, as in the cases of common salt and of the combinations of silicon. But no one has ever found a mine of gun-cotton, because it has so slight a power of resistance. If, through some accidental collocation of elements, a single molecule of gun-cotton were formed, it would have but a short life. Stability is, further, a property of relationship to surrounding conditions; it denotes adaptation to environment. Thus salt is adapted to the struggle for existence on the earth, but it cannot withstand the severer conditions which exist in the sun.

PART II.

GENTLEMEN,—At Cape Town I attempted to make a general survey of evolution in its various branches and laid down certain general propositions as to what seems common to all of them. I then went on to consider how these general laws found an application in the most recent speculations as to the constitution of matter. The atoms of the elements and the molecules of chemical combinations are constructed on so minute a scale that it is no easy task to picture them to our minds. On the other hand, we see in the heavens arrangements of matter on a scale so vast that it is equally difficult to grasp. Both the inconceivably small and the inconceivably large should fall under a general law, if it is a true one; and the history of satellites, planets, and stars present at least as great an interest as that of atoms and molecules. Accordingly the transition from the small to the large seemed to afford a convenient halting place in my address, and I propose to-night to resume the discussion by considering various theories of celestial evolution. But I will first try to render the point of view intelligible which I desire to take. A short preliminary explanation for those who were not at Cape Town thus becomes necessary. I desire to present the essential features which are common to evolution in all its branches and this may be done most easily by reference to political institutions, because we all fancy we understand something of politics.

The complex interactions of man with man in a community are usually described by such comprehensive terms as "the State," "the Commonwealth," or "the Government." Various States differ widely in their constitution and in the degree of the complexity of their organisation, and we classify them by various general terms, such as "autocracy," "aristocracy," or "democracy," which express somewhat loosely their leading characteristics. But for the purpose of showing the analogy with physics we need terms of wider import than those habitually used in politics. All forms of the State imply inter-relationship in the actions of men and action implies movement. Thus the State may be described as a configuration or arrangement of a community of men; or we may say that it implies a definite mode of motion of men—that is to say, an organised scheme of action of man on man. Political history gives an account of the gradual changes in such configurations or modes of motion of men as have possessed the quality of persistence or of stability to resist the disintegrating influence of surrounding circumstances. In the history of a State we find this stability or power of persistence continually changing. It slowly rises to a maximum and then declines; when it falls to nothing a revolution ensues and a new form of government is established. This new mode of motion of men or government has at first but little stability, but it gradually acquires strength and permanence until in its turn the slow decay in the power of persistence leads on to a new revolution. Such crises in political history may give rise to a condition in which the State is incapable of perpetuation by transformation. This occurs when a savage tribe nearly exterminates another and leads the few survivors into slavery; the previous form of government then becomes extinct.

Now turn to the evolution of the various forms of life. The fundamental idea in the theory of natural selection is the persistence of those types of life which are adapted to their surrounding conditions and the elimination by extermination of the ill-adapted types. The struggle for life amongst forms possessing various degrees of adaptation to slowly varying conditions is held to explain the transmutation of species. Although a different phraseology is used when we speak of the physical world yet the idea is essentially the same. Theories of physical evolution involve the discovery of modes of motion or configurations of matter which are capable of persistence. The physicist describes such types as stable; the biologist calls them species. The physicist, the biologist, and the historian alike watch the effect of slowly varying external conditions; they all observe the rise and decline of stability, with the consequent change of type of motion, transmutation of species, or revolution.

And now after this preface I turn to astronomical theories of evolution. The German astronomer Bode long ago propounded a simple empirical law concerning the distances at which the several planets move about the sun and his formula embraces so large a number of cases with accuracy that we are compelled to believe that it arises in some manner from the primitive conditions of the planetary system. The explanation of the causes which have led to this simple law as to the planetary distances presents an interesting problem and, although it is still unsolved, we may obtain some insight into its meaning by considering what may be called a working model of ideal simplicity. Imagine, then, a sun round which there moves in a circle a single large planet. I will call this planet Jove, because it may be taken as a representative of our largest planet Jupiter. Suppose next that a meteoric stone or small planet is projected in any perfectly arbitrary manner in the same plane in which Jove is moving; then we ask how this third body will move. It appears that under the combined attractions of the sun and Jove the meteoric stone will in general describe an orbit of extraordinary complexity, at one time moving slowly at a great distance from both the sun and Jove, at other times rushing close past one or other of them. As it grazes past Jove or the sun it may often but just escape a catastrophe, but a time will come at length when it runs its chances too fine and comes into actual collision. The individual career of the stone is then ended by absorption and, of course, by far the greater chance is that it will find its Nirvana by absorption in the sun.

Next, let us suppose that instead of one wandering meteoric stone or minor planet there are hundreds of them moving initially in all conceivable directions. Since they are all supposed to be very small, their mutual attractions will be insignificant and they will each move almost as though they were influenced only by the sun and Jove. Most of these stones will be absorbed by the sun and the minority will collide with Jove. When we inquire how long the career of a stone may be we find that it depends on the direction and speed with which it is started, and that by proper adjustment the delay of the final catastrophe may be made as long as we please. Thus by making the delay indefinitely long we reach the conception of a meteoric stone which moves so as never to come into collision with either body. There are, therefore, certain perpetual orbits in which a meteoric stone or minor planet may move for ever without collision. But when such an immortal career has been discovered for our minor planet it still remains to discover whether the slightest possible departure from the prescribed orbit will become greater and greater and ultimately lead to a collision with the sun or Jove, or whether the body will travel so as to cross and recross the exact perpetual orbit, always remaining close to it. If the slightest departure inevitably increases as time goes on the orbit is unstable; if, on the other hand, it only leads to a slight waviness in the path described it is stable.

We thus arrive at another distinction: there are perpetual orbits, but some, and indeed most, are unstable, and these do not offer an immortal career for a meteoric stone; and there are other perpetual orbits which are stable or persistent. The unstable ones are those which succumb in the struggle for life and the stable ones are the species adapted to their environment. If, then, we are given a system of a sun and large planet, together with a swarm of small bodies moving in all sorts of ways, the sun and planet will grow by accretion, gradually sweeping up the dust and rubbish of the system, and there will survive a number of small planets and satellites moving in certain definite paths. The final outcome will be an orderly planetary system in which the various orbits are arranged according to some definite law. There is hardly room for doubt that if a complete solution for our solar system were attainable, we should find that the orbits of the existing planets and satellites are numbered amongst the stable perpetual orbits and should thus obtain a rigorous mechanical explanation of Bode's law concerning the planetary distances.

In the first portion of my address I described the orbits in which the corpuscles move in the atoms of matter and drew attention to the resemblance to a planetary system. It may not perhaps be fanciful to imagine that some general mathematical method devised for solving a problem of cosmical evolution may find another application to miniature atomic systems and may thus lead onward to vast developments of industrial mechanics. Science, however diverse its aims, is a whole, and men of science do well to impress on the captains of industry that they should not look askance on those branches of investigation which may seem for the moment far beyond any possibility of practical utility. The theory which I have now explained points to the origin of the sun and planets from gradual accretions of meteoric stones and it makes no claim to carry the story back behind the time when there was already a central condensation or sun about which there circled another condensation or planet. But more than a century ago an attempt had already been made to reconstruct the history back to a yet remoter past and, as we shall see, this attempt was based upon quite a different supposition as to the constitution of the primitive solar system. I myself believe that the theory I have just explained, as well as that to which I am coming, contains essential elements of truth and that the apparent discordances will some day be reconciled. The theory of which I speak is the celebrated nebular hypothesis, first suggested by the German philosopher Kant, and later restated independently and in better form by the French mathematician Laplace.

Laplace traced the origin of the solar system to a nebula or cloud of rarefied gas congregated round a central condensation which was ultimately to form the sun. The whole was slowly rotating about an axis through its centre, and, under the combined influences of rotation and of the mutual attraction of the gas, it assumed a globular form, slightly flattened at the poles. The primeval globular nebula is undoubtedly a stable or persistent figure, and thus Laplace's hypothesis conforms to the general laws which I have attempted to lay down. The nebula must have gradually cooled by radiation into space, and as it did so the gas must necessarily have left some of its spring or elasticity, thus permitting a greater degree of condensation of the whole. The contraction led inevitably to two results: first, the central condensation became hotter; and, secondly, the speed of its rotation became faster. The accelerated rotation led to an increase in the amount of polar flattening and the nebula at length assumed the form of a lens, or of a disk thicker in the middle than at the edges. Assuming the existence of the primitive nebula the hypothesis may be accepted thus far as practically certain.

From this point, however, doubt and difficulty enter into the argument. It is supposed that the nebula became so much flattened that it could not subsist as a continuous aggregation of gas, and a ring of matter detached itself from the equatorial regions. The central portions of the nebula, when relieved of the excrescence, resumed the more rounded shape formerly possessed by the whole. As the cooling continued the central portion in its turn became excessively flattened through the influence of its increased rotation; another equatorial ring then detached itself, and the whole process was repeated as before. In this way the whole nebula was fissured into a number of rings surrounding the central condensation, whose temperature must by then have reached incandescence. Each ring then aggregated itself round some nucleus which happened to exist in its circumference and so formed a subordinate nebula. Passing through a series of transformations like its parent, this nebula was finally replaced by a planet with attendant satellites. The whole process forms a majestic picture of the history of our system. But the mechanical conditions of a rotating nebula are too complex to admit as yet of complete mathematical treatment; and thus in discussing this theory the physicist is compelled in great measure to adopt the qualitative methods of the biologist rather than the quantitative ones which he would prefer. Although the telescope seems to confirm the general correctness of Laplace's hypothesis, yet it is hardly too much to say that every stage in the supposed process presents to us some impossibility. Thus, for example, the ring of Saturn seems to have suggested the theory to Laplace, but to take it as a model leads us straight to a quite fundamental difficulty. If a ring of matter ever concentrates under the influence of its mutual attraction it can only do so round the centre of gravity of the whole ring. Therefore the matter forming an approximately uniform ring, if it concentrates at all, can only fall in on the parent planet and be re-absorbed. Some external force other than the mutual attraction of the matter forming the ring, and therefore not provided by the theory, seems necessary to effect the supposed concentration. The only way of avoiding this difficulty is to suppose the ring to be ill-balanced or lop-sided; in this case, provided the want of balance is pronounced enough, concentration will take place round a point inside the ring but outside the planet. However, this is not the time to pursue these considerations further, yet enough has been said to show that the nebular hypothesis cannot be considered as a connected intelligible whole, however much of truth it may contain.

In the first theory which I sketched as to the origin of the sun and planets we supposed them to grow by the accretions of meteoric wanderers in space, and this hypothesis is apparently in fundamental disagreement with the conception of Laplace, who watches the transformations of a continuous gaseous nebula. I must not pause to consider how these seemingly discordant views may be reconciled but will merely say that I conceive both theories contain important elements of truth. We have seen that in order to explain the genesis of planets according to Laplace's theory the rings must be ill-balanced or even broken. If the ring were so far from being complete as only to cover a small segment of the whole circumference, the true features of the occurrences in the births of planets and satellites might be better represented by conceiving the detached portion of matter to have been more or less globular from the first rather than ring-shaped. Now, this idea introduces us to another group of researches whereby mathematicians have sought to explain the birth of planets and satellites. The solution of the problem of evolution involves the search for those persistent or stable forms which biologists would call species. The species of which I am now going to speak may be grouped in a family which comprises all those various forms which a mass of rotating liquid is capable of assuming under the conjoint influences of gravitation and rotation. If the earth were formed throughout of a liquid of the same density it would be one of the species of this family; and, indeed, these researches date back to the time of Newton, who was the first to explain the figures of planets. The ideal liquid planets we are to consider must be regarded as working models of actuality and inasmuch as the liquid is supposed to be incompressible the conditions depart somewhat widely from those of reality. Hence, when the problem has been solved much uncertainty remains as to the extent to which our conclusions will be applicable to actual celestial bodies.

We begin, then, with a rotating liquid planet like the earth, which is the first stable species of our family. We next impart in imagination more rotation to this planet and find by mathematical calculation that its power of resistance to any sort of disturbance is less than it was. In other words, its stability declines with increased rotation and at length we reach a stage at which the stability just vanishes. At this point the shape is a transitional one, for it is the beginning of a new species with different characteristics from the first and with a very feeble degree of stability or power of persistence. As a still further amount of rotation is imparted the stability of the new species increases to a maximum and then declines until a new transitional shape is reached and a new species comes into existence. In this way we pass from species to species with an ever-increasing amount of rotation. The first or planetary species has a circular equator like the earth; the second species has an oval equator, so that it is something like an egg spinning on its side on a table; in the third species we find that one of the two ends of the egg begins to swell and that the swelling gradually becomes a well-marked protrusion or filament. Finally, the filamentous protrusion becomes bulbous at its end and is only joined to the main mass of liquid by a gradually thinning neck. The neck at length breaks and we are left with two separated masses which may be called planet and satellite. In this ideal problem the successive transmutations of species are brought about by gradual additions to the amount of rotation with which the mass of liquid is endowed. It might seem as if this continuous addition to the amount of rotation were purely arbitrary and could have no counterpart in nature. But real bodies cool and contract in cooling and I must ask you to believe that the effects of an apparently arbitrary increase of rotation may be produced by cooling.

The figures which I succeeded in drawing, by means of rigorous calculation, of the later stages of this course of evolution are so curious as to remind one of some such phenomenon as the protrusion of a filament of protoplasm from a mass of living matter, and I suggest that we may see in this almost life-like process the counterpart of at least one form of the birth of double stars, planets, and satellites. My Cambridge colleague Jeans has also made an interesting contribution to the subject by attacking the far more difficult case where the rotating fluid is a compressible gas. In this case also he finds a family of types but the conception of compressibility introduced a new set of considerations in the transitions from species to species. The problem is, however, of such difficulty that he had to rest content with results which were rather qualitative than strictly quantitative. It cannot be doubted that the supposed Laplacian sequence of events possesses a considerable element of truth, yet these latter schemes of transformation can be followed in closer detail. It seems, then, probable that both processes furnish us with crude models of reality and that in some cases the first, and in others the second, is the better representative. The moon's mass is $\frac{1}{80}$th of that of the earth, whereas the mass of Titan, the largest satellite in the solar system, is $\frac{1}{4600}$th of that of Saturn. On the ground of this great difference between the relative magnitudes of all other satellites and of the moon it is not unreasonable to suppose that the mode of separation of the moon from the earth may also have been widely different. The theory of which I shall have next to speak claims to trace the gradual departure of the moon from an original position not far removed from the present surface of the earth. If this view is correct, we may suppose that the detachment of the moon from the earth occurred as a single portion of matter and not as a concentration of a Laplacian ring. If a planet is covered with oceans of water and air or if it is formed of plastic molten rock tidal oscillations must be generated in its mobile parts by the attractions of its satellites and of the sun. Such movements must be subject to frictional resistance and the planet's rotation will be slowly retarded by tidal friction in much the same way that a fly-wheel is gradually stopped by any external cause of friction. Since action and reaction are equal and opposite, the action of the satellites on the planet, which causes the tidal friction of which I speak, must correspond to a reaction of the planet on the motion of the satellites. At any moment of time we may regard the system composed of the rotating planet with its attendant satellite as a stable species of motion, but the friction of the tides introduces forces which produce a continuous, although slow, transformation in the configuration. It is then clearly of interest to trace backwards in time the changes produced by such a continuously acting cause and to dermine the initial condition from which the system of planet and satellite must have been slowly degrading. We might also look forward and discover whither the transformation tends.

Let us consider, then, the motion of the earth and moon revolving in company round the sun, on the supposition that the friction of the tides in the earth is the only effective cause of change. We are, in fact, to discuss a working model of the system analogous to those of which I have so often spoken before and it must suffice to set forth the result in its main outline as referring only to the past. If we take the "day," regarding it as a period of variable length, to mean the time occupied by a single rotation of the earth on its axis, and the "month," likewise variable in absolute length, to mean the time occupied by the moon in a single revolution round the earth, the number of days in the month expresses the speed of the earth's rotation relatively to the speed of the moon's revolution. Now in our retrospect both day and month are found continuously shortening, but as, on the whole, the month shortens much more quickly than the day the number of days in the month also falls. We may, then, ask at once, What is the initial stage to which the gradual transformation points? I say that on following the argument to its end the system may be traced back to a time when the day and month were identical in length and were both only about four or five of our present hours. The identity of day and month means that the moon was always opposite to the same side of the earth; thus, at the beginning the earth always presented the same face to the moon, just as the moon now always shows the same face to us. Moreover, when the month was only some four or five of our present hours in length the moon must have been only a few thousand miles from the earth's surface—a great contrast with the present distance of 240,000 miles. It might well be argued from this conclusion alone that the moon separated from the earth more or less as a single portion of matter at a time immediately antecedent to the initial stage to which she has been traced. But there exists a yet more weighty argument favourable to this view, for it appears that the initial stage is one in which the stability of the species of motion is tottering, so that the system presents the characteristic of a transitional form, which we have seen to denote a change of type or species in a previous case. In discussing the transformations of a liquid planet we saw the tendency of the single mass to divide into two portions and now we seem to reach a similar crisis from the opposite end, when in retrospect we trace back the system to two masses of unequal sizes in close proximity with one another. The argument almost carries conviction with it, but I have necessarily been compelled to pass over various doubtful points.

Time is wanting to consider other subjects worthy of notice which arise out of this problem, yet I wish to point out the fact that tidal friction is competent to explain the eccentricity of an orbit, because this conclusion has been applied in a manner to which I shall have occasion to return hereafter. If, as has been argued, tidal friction has played so important a part in the history of the earth and moon, it might be expected that the like should be true of the other planets and satellites and of the planets themselves in their relationship to the sun. But numerical examination of the several cases proves conclusively that this cannot have been the case. The relationship of the moon to the earth is, in fact, quite exceptional in the solar system and we have still to rely on such theories as that of Laplace for the explanation of the main outlines of the solar system. I have not yet mentioned the time occupied by the sequence of events sketched out in the various schemes of cosmogony and the question of cosmical time is a thorny and controversial one. Our ideas are absolutely blank as to the time requisite for the evolution either according to Laplace's nebular hypothesis or the meteoritic theory. All we can assert is that they demand enormous intervals of time as estimated in years. The theory of tidal friction stands alone amongst these evolutionary speculations in that we can establish an exact but merely relative time-scale for every stage of the process. Although it is true that the value in years of the unit of time remains unknown, yet it is possible to determine a period in years which must be shorter than that in which the whole history is comprised. If at every moment since the birth of the moon tidal friction had always been at work in such a way as to produce the greatest possible effect, then we should find that 60,000,000 years would be consumed in this portion of evolutionary history. The true period must be much greater, and it does not seem unreasonable to suppose that 500,000,000 to 1,000,000,000 years may have elapsed since the birth of the moon. Such an estimate would not seem extravagant to geologists who have, in various ways, made exceedingly rough determinations of geological periods. As far as my knowledge goes I should say that pure geology points to some period intermediate between 500,000,000 and 1,000,000,000 of years, the upper limit being more doubtful than the lower. Thus far we do not find anything which renders the tidal theory of evolution untenable. But the physicists have formed estimates in other ways which, until recently, seemed to demand in the most imperative manner a far lower scale of time. According to all theories of cosmogony, the sun is a star which became heated in the process of its condensation from a condition of wide dispersion. When a meteoric stone falls into the sun the arrest of its previous motion gives rise to heat, just as the blow of a horse's shoe on a stone makes a spark. The fall of countless meteoric stones, or the condensation of a rarefied gas, was supposed to be the sole cause of the sun's high temperature.

Since the mass of the sun is known the total amount of the heat generated in it, in whatever mode it was formed, can be estimated with a considerable amount of precision. The heat received at the earth from the sun can also be measured with some accuracy and hence it is a mere matter of calculation to determine how much heat the sun sends out in a year. The total heat which can have been generated in the sun divided by the annual output gives a quotient of about 20,000,000. Hence it seemed to be imperatively necessary that the whole history of the solar system should be comprised within some 20,000,000 of years. This argument, which is due to Helmholtz, appeared to be absolutely crushing, and for the last 40 years the physicists have been accustomed to tell the geologists that they must moderate their claims. But for myself I have always believed that the geologists were more nearly correct than the physicists, notwithstanding the fact that appearances were so strongly against them. And now, at length, relief has come to the strained relations between the two parties, for the recent marvellous discoveries in physics show that concentration of matter is not the only source from which the sun may draw its heat. Radium is a substance which is perhaps millions of times more powerful than dynamite. Thus it is estimated that an ounce of radium would contain enough power to raise 10,000 tons a mile above the earth's surface. Another way of stating the same estimate is this: the energy needed to tow a ship of 12,000 tons a distance of 6000 sea miles at 15 knots is contained in 22 ounces of radium. The *Saxon* probably burns 5000 or 6000 tons of coal on a voyage of approximately the same length. Other lines of argument tend in the same direction. Now we know that the earth contains radio-active materials and it is safe to assume that it forms in some degree a sample of the materials of the solar system; hence it is almost certain that the sun is radio-active also. This branch of science is as yet but in its infancy, but we already see how unsafe it is to dogmatise on the potentialities of matter. It appears, then, that the physical argument is not susceptible of a greater degree of certainty than that of the geologists, and the scale of geological time remains in great measure unknown. I have now ended my discussion of the solar system, and must pass on to the wider fields of the stellar universe.

Only a few thousand stars are visible with the unaided eye, but photography has revealed an inconceivably vast multitude of stars and nebulæ, and every improvement in that art seems to disclose yet more and more. It seems useless to consider whether the number of stars has any limit, for infinite number, space, and time transcend our powers of comprehension. We must then make a virtue of necessity, and confine our attention to such more limited views as seem within our powers. A celestial photograph looks at first like a dark sheet of paper splashed with whitewash, but further examination shows that there is method in the arrangement of the white spots. Thus there is order of some sort in the heavens, and although no reason can be assigned for the observed arrangement in any particular case, yet it is possible to obtain general ideas as to the succession of events in stellar evolution. Besides the stars there are numerous streaks, wisps, and agglomerations of nebulosity, whose light we know to emanate from gas. Spots of intenser light are observed in less brilliant regions; clusters of stars are sometimes imbedded in nebulosity, while in other cases each individual star of a cluster stands out clear by itself. These and other observations force on us the conviction that the wispy clouds represent the earliest stage of development, the more condensed nebulæ a later stage, and the stars themselves the last stage. This view is in agreement with the nebular hypothesis of Laplace and we may fairly conjecture that chains and lines of stars represent pre-existing streaks of nebulosity. Change is obviously in progress everywhere as well in each individual nebula and star as in the positions of these bodies relatively to one another. But we are unable even to form conjectures as to the tendency of the evolution which is going on. This being so, we cannot expect, by considering the distribution of stars and nebulæ, to find many illustrations of the general laws of evolution which I have attempted to explain: accordingly I must confine myself to the few cases where we at least fancy ourselves able to form ideas as to the stages by which the present conditions have been reached.

Up to a few years ago there was no evidence that the law of gravitation extended to the stars, and even now there is nothing to prove the transmission of gravity from star to star. But in the neighbourhood of many stars the existence of gravity is now as clearly demonstrated as within the solar system itself. The telescope has disclosed the double character of a large number of stars, and the relative motion of the pairs of companions has been observed with the same assiduity as that of the planets. When the relative orbit of a pair of binary or double stars is examined it is found that the motion conforms exactly to those laws of Kepler which prove that the planets circle round the sun under the action of solar gravitation. A leading characteristic of all these double stars is that the two companions do not differ enormously in mass from one another. In this respect these systems present a strongly marked contrast with that of the sun, attended as it is by relatively insignificant planets.

In the earlier part of my address I showed how theory indicates that a rotating fluid body will as it cools separate into two detached masses. Mathematicians have not yet been able to carry their analysis far enough to determine the relative magnitudes of the two parts, but as far as we can see the results point to the birth of a satellite whose mass is a considerable fraction of that of its parent. Accordingly See (who devotes his attention largely to the astronomy of double stars), Alexander Roberts, and others consider that what they have observed in the heavens is in agreement with the indications of theory. It thus appears that there is reason to hold that double stars have been generated by the division of primitive and more diffused single stars. But if this theory is correct we should expect the orbit of a double star to be approximately circular; yet this is so far from being the case that the eccentricity of the orbits of many double stars exceeds by far any of the eccentricities in the solar system. Now See has pointed out that when two bodies of not very unequal masses revolve round one another in close proximity the conditions are such as to make tidal friction as efficient as possible in transforming the orbit. Hence we seem to see in tidal friction the cause which may have sufficed not only to separate the two component stars from one another, but also to render the orbit eccentric. I have thought it best to deal very briefly with stellar astronomy in spite of the importance of the subject because the direction of the changes in progress is in general too vague to admit of the formation of profitable theories.

We have seen that it is possible to trace the solar system back to a primitive nebula with some degree of confidence and that there is reason to believe that the stars in general have originated in the same manner. But such primitive nebulæ stand in as much need of explanation as their stellar offspring. Thus, even if we grant the exact truth of these theories the advance towards an explanation of the universe remains miserably slight. Man is but a microscopic being relatively to astronomical space and he lives on a puny planet circling round a star of inferior rank. Does it not, then, seem as futile to imagine that he can discover the origin and tendency of the universe as to expect a house fly to instruct us as to the theory of the motions of the planets? And yet, so long as he shall last, he will pursue his search, and will no doubt discover many wonderful things which are still hidden. We may, indeed, be amazed at all that man has been able to find out, but the immeasurable magnitude of the undiscovered will throughout all time remain to humble his pride. Our children's children will still be gazing and marvelling at the starry heavens but the riddle will never be read.

REMOVAL OF A LARGE PIN FROM THE LOWER LOBE OF THE LUNG BY TRANSPLEURAL PNEUMOTOMY.

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With Notes on the Radiographic Methods employed, by WILLIAM R. FOX, L.R.C.S., L.R.C.P. Edin., *Honorary Physician to the Melbourne Benevolent Asylum.*

(*With Illustrative Plate.*)

I HAVE been unable to discover the record of any case in which the chest has been opened in the free manner employed in this instance for the purpose of extracting a foreign body from the lung and I conclude, therefore, that the features of interest that are presented by it are unique in kind. I am indebted for the earlier notes to Mr. H. W. Bryant, under whose care the boy came in the first instance.

The patient, aged 12 years, was admitted into the Alfred Hospital, Melbourne, under my care on Sept. 12th, 1903, with the following history. Five weeks previously he was sitting in a rocking chair holding in his mouth a large black-headed shawl pin, three inches in length, when the chair was suddenly tilted, and in the effort to save himself the pin disappeared down his trachea without any cough or spasm of the glottis. No symptoms of any kind appeared to have supervened until a week later, when he began to be troubled with a cough, and a week later still the sputa became blood-stained. Three weeks after the occurrence he was examined radioscopically by Mr. W. R. Fox, and the pin was seen to be in the left bronchus, the head lying two and a half inches below the bifurcation, the point projecting into the trachea. It was suggested by Mr. Fox that an attempt should be made to extract the pin with an electro-magnet which he undertook to devise and construct, and as it was thought likely that tracheotomy might be required the patient was admitted under my care into the Alfred Hospital. Without going into unnecessary detail it was found at a subsequent examination made by Mr. Fox that the pin had travelled down into the lower lobe of the lung and that all idea of extracting it through the trachea would have to be abandoned. The boy's symptoms on admission were exceedingly slight; there was a little irritative cough and occasionally a streak of blood was expectorated; there was also a slight irregularity of temperature, which sometimes rose to between 99° and 100° F. at night; otherwise he appeared to be in excellent health and careful auscultation revealed nothing.

On radioscopic examination the following points were noted. The pin was readily seen lying in the lower part of the left lung, the point being directed obliquely upwards towards the trachea (Fig. 1). At each cardiac pulsation the point of the pin rose and fell as though it were resting upon the base of the heart. The position of the head could be easily indicated on the chest wall by examining in two positions, antero-posteriorly and laterally, and marking the spot coinciding with the head in either position. It was then found that when viewed antero-posteriorly the head was about on a level with the eighth rib; when viewed laterally it lay in a vertical plane corresponding to that of the posterior fold of the axilla. The project of extracting the pin through an opening in the chest wall looked as though it should be an easy matter; nevertheless it was novel work, and I had reason to be very glad that before undertaking it upon the living I sought an opportunity of studying the matter in the dead-house.

The results of my experimental investigations with a similar pin and a lung removed from the body were as follows. In the first place, it was clear that the pin had passed into the main bronchus of the lower lobe of the lung, which corresponded exactly with the position of the pin as shown by the rays. Secondly, I ascertained that by grasping the lobe firmly between the fingers and thumb and making a slight rocking movement I was able with a little practice to detect the rigidity caused by the presence of the pin. The observation which was really the most important of all, however, was concerned with the extreme slipperiness of the foreign body in the bronchus. I found that having once grasped the lung containing the pin it would never do to let go or to relax the grasp until the pin was extracted. Anything in the nature of fumbling caused the pin to slip away with great readiness and as it would then be travelling point first, the point being, moreover, in close proximity to the great vessels at the base of the heart, the dangers that might result from maladroit handling were obvious and very real. Upon these considerations the following operation was planned and carried out.

Operation (Oct. 2nd).—The boy being placed on his right side, a free curved incision with the convexity downwards was made and the flap thus marked out was reflected upwards. A portion of the left eighth rib six inches long was then removed from the postero-lateral part of the chest and air was cautiously permitted to enter the pleura through a small puncture. The resulting collapse of the lung was not attended by untoward symptoms and the pleura was opened up to the full extent of the wound. Ample room was afforded; the fingers of the left hand were passed between the lung and the diaphragm, the lower lobe grasped near its root and gently drawn towards the opening. It was now possible to recognise the rigidity caused by the presence of the pin. Maintaining a firm hold with the left hand the position of the head of the pin was ascertained by gently palpating the surface of the lung with the right fingers. A small incision was made in the lung over the pin's head; a sinus forceps, unopened, was pushed in until the pin was felt and by hitching the instrument under the neck of the pin the head was easily lifted out of the wound and the pin was withdrawn. There was no hæmorrhage but it is a notable circumstance that abscess formation had already begun round the foreign body, for when the head of the pin was reached a small quantity of pus (10 or 20 minims) escaped. No suture was put into the very small wound in the lung. The flap of integument was replaced and sutured with the exception of about two inches in the middle. This was left unclosed by sutures and a piece of oiled silk protective was laid over it before the dressings were applied; by this means free escape of air from the pleura was insured, while the piece of protective by its valvular action would impede the passage of air back into the pleura and thus encourage the expansion of the lung. Immediately after the operation there was great restlessness, which was relieved by a small dose of morphine, and for two or three days there were some dyspnœa and general distress, which, however, steadily diminished. There was also moderate fever, the temperature ranging between 99° and 100°, and examination of the chest revealed very general consolidation of the lobe from which the pin had been extracted. By the fourth day, however, convalescence fairly set in, the temperature became normal, the appetite returned, and all discomfort vanished. The wound in the chest wall did not pursue a strictly aseptic course and there was some suppuration about the stitches. This I attribute to accidental infection from the pus round the pin during the operation. Happily no suppuration of the pleura took place and healing progressed kindly and rapidly under a moist dressing, so that the boy was able to leave the hospital perfectly well 12 days after the operation. The very difficult problem of photographing so slender an object as a pin while it was subject to constant movement produced by both the cardiac and respiratory cycles was solved after one or two attempts by Mr. Fox, but it will be readily understood that the photograph does not depict the foreign body with the striking clearness with which it was viewed by means of the fluorescent screen.

Remarks.—There is obviously a very broad distinction to be drawn between the procedure here described and the exceedingly difficult and unsatisfactory attacks that have been made on the large bronchi through the mediastina. The transpleural method used in this case will certainly be occasionally employed in the future, thanks to the aid the surgeon is now enabled to claim from the skiagraphist, and one can conceive of no more brilliant illustration of the value of radiography in surgery. Other features that appear to me specially noteworthy are: (1) the fact of abscess formation having already commenced; (2) the lobar consolidation subsequent to the operation; and (3) the suppuration of the chest wall without suppuration of the pleura, although the two structures were in widely open communication with one another. Finally, I would venture strongly to urge upon any surgeon who contemplates a procedure of this nature that a little special *tactus eruditus* acquired beforehand in the dead-house will prove invaluable.

Notes by Mr. FOX.—This patient was sent to me for x ray examination by my friend Mr. Bryant on August 27th, 1903. A shawl pin had disappeared in the circumstances detailed in Mr. Russell's account of the case and it was thought that it had been swallowed. Examination by the x rays at once showed this supposition to be incorrect and revealed the shawl pin lying in the left bronchus. It was then over three weeks since its disappearance. As its point was in the trachea near its bifurcation it was thought that it might be possible to remove it through an opening made into the trachea below the isthmus. As the point of such a pin is, however, a very difficult object to be grasped by, and extracted in, the jaws of a pair of forceps I formed the opinion that it might be practicable to use a powerful electro-magnet in the event of forceps failing to extract it. Experimental investigation, however, showed that an electro-magnet of diameter sufficiently small not to occlude seriously under an anæsthetic the small trachea of a boy 12 years old possessed an inadequate magnetic pull unless exerted over a sufficiently large surface of the object to be removed. Now the position of the pin was such that it practically presented its point to the electro-magnet, and the fact that the magnetic lines of force had thus to act upon a point, combined with the limited size of the magnet itself, rendered it impracticable to remove the pin in this way. Experiments carried out with a very large Haab magnet and iron extension pieces suitable for pushing down the trachea to reach the pin proved this to possess no greater power. The idea of utilising an electro-magnet had thus to be abandoned.

It was then determined to endeavour to extract it by the tracheal route by means of ordinary forceps and as Mr. Bryant was leaving Melbourne for a week or two the case was kindly taken in hand by Mr. Russell and admitted to the Alfred Hospital, with the excellent and highly gratifying result recorded. Another x ray examination was then made with this view, when it was found that meantime the pin had found its way so much farther down the bronchus that it had become impracticable to reach and to extract it through a tracheal opening. The pleural route was then determined upon and I was asked to locate exactly the round glass head of the pin. To do this I adopted a method the principle of which is precisely similar to that I advocated in a former issue of THE LANCET[1] and which I have employed on numerous occasions since. It consists of ascertaining the exact position of two straight lines in the same plane intersecting one another at right angles, the point of intersection being occupied by the object to be located. The most suitable plane for these lines to be in is one at right angles to the axial line of the body. This affords the easiest and most useful measurements. This plane is represented in the diagram (Fig. 2), in which A B and C D are the two lines at right angles to each other. The line A B is found by taking two small circular discs of lead and attaching them to the skin by means of fish-glue or some similar material. By means of the x rays and a fluorescent screen these two metal discs are moved about, sliding them on the surface of the skin until the disc at A, the head of the pin at E, and the other disc at B are all in one straight line (A B). Such a line to be in the above-mentioned plane should be, with the patient standing, as nearly as possible a horizontal one. The discs A and B are so placed that A B is a true antero-posterior line. In an exactly similar manner the line C D is mapped out, this being also a horizontal line at right angles to A B and extending from side to side instead of antero-posteriorly. Now F G is a line drawn parallel to A B and passing through C, while G B and F A are each parallel to C E. Now F A = G B = C E, which is the depth the head of the pin E is in the cavity of the thorax from the position of the disc at C. From this it should be quite clear that C (which in this particular case is the nearest point to the object sought) gives the position where the opening into the pleura should be made and the requisite amount of rib in that location excised, while C E (or what is the same thing, G B or F A) gives the depth the operator must go in the direction of D to reach the head of the pin. The collapse of the lung on opening the pleura in this case of course alters the position of the pin in the thorax, but that can scarcely be held to vitiate the method of location.

An attempt to photograph the pin in position was at first a complete failure, no pin showing in the photograph, although it was very plainly visible on the screen. The fault lay in the free movement of the pin with the lung during respiration and by controlling diaphragmatic action and stopping this up-and-down movement a good photograph was at once obtained.

A curious point about this case that should be noted is that the pin fell into the left bronchus and not into the right. It is a well known fact that when a foreign body enters the trachea and falls below its bifurcation it nearly always enters the right bronchus, rarely the left. In the event of no signs or symptoms being present (as in this case) to indicate its position and in the absence of an x ray examination one can easily imagine a surgeon who suspected that it had dropped down the trachea diligently but vainly exploring the right bronchus. The case is altogether an excellent illustration of the immense assistance x ray examination affords in suitable cases to the operating surgeon.

Melbourne.

THE PATHOLOGY AND TREATMENT OF ECLAMPSIA.

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THERE is no more interesting subject in the whole range of obstetric medicine than eclampsia, and yet, despite the recent advances in every department of medical science, our knowledge of convulsions occurring in pregnancy, during labour, and after delivery, is still anything but accurate, defined, or scientific.

THE PATHOLOGY OF ECLAMPSIA.

Two views at present hold the field as to the pathology of eclampsia. 1. Our present position, according to one view, corresponds to that of our predecessors in the last century in reference to dropsy. We call convulsions associated with pregnancy, labour, or the lying-in period eclampsia, but just as in the case of dropsy closer observation and more accurate post-mortem evidence showed that there were several morbid conditions underlying that clinical term, so in the case of eclampsia some believe we have included in it a number of disease entities, each due division of primitive and more diffused single stars. But if this theory is correct we should expect the orbit of a double star to be approximately circular; yet this is so far from being the case that the eccentricity of the orbits of many double stars exceeds by far any of the eccentricities in the solar system. Now See has pointed out that when two bodies of not very unequal masses revolve round one another in close proximity the conditions are such as to make tidal friction as efficient as possible in transforming the orbit. Hence we seem to see in tidal friction the cause which may have sufficed not only to separate the two component stars from one another, but also to render the orbit eccentric. I have thought it best to deal very briefly with stellar astronomy in spite of the importance of the subject because the direction of the changes in progress is in general too vague to admit of the formation of profitable theories.

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[1] THE LANCET, Sept. 21st, 1901, p. 784.

We have seen that it is possible to trace the solar system back to a primitive nebula with some degree of confidence and that there is reason to believe that the stars in general have originated in the same manner. But such primitive nebulæ stand in as much need of explanation as their stellar offspring. Thus, even if we grant the exact truth of these theories the advance towards an explanation of the universe remains miserably slight. Man is but a microscopic being relatively to astronomical space and he lives on a puny planet circling round a star of inferior rank. Does it not, then, seem as futile to imagine that he can discover the origin and tendency of the universe as to expect a house fly to instruct us as to the theory of the motions of the planets? And yet, so long as he shall last, he will pursue his search, and will no doubt discover many wonderful things which are still hidden. We may, indeed, be amazed at all that man has been able to find out, but the immeasurable magnitude of the undiscovered will throughout all time remain to humble his pride. Our children's children will still be gazing and marvelling at the starry heavens but the riddle will never be read.

REMOVAL OF A LARGE PIN FROM THE LOWER LOBE OF THE LUNG BY TRANSPLEURAL PNEUMOTOMY.

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With Notes on the Radiographic Methods employed, by WILLIAM R. FOX, L.R.C.S., L.R.C.P. Edin., *Honorary Physician to the Melbourne Benevolent Asylum.*

(*With Illustrative Plate.*)

I HAVE been unable to discover the record of any case in which the chest has been opened in the free manner employed in this instance for the purpose of extracting a foreign body from the lung and I conclude, therefore, that the features of interest that are presented by it are unique in kind. I am indebted for the earlier notes to Mr. H. W. Bryant, under whose care the boy came in the first instance.

The patient, aged 12 years, was admitted into the Alfred Hospital, Melbourne, under my care on Sept. 12th, 1903, with the following history. Five weeks previously he was sitting in a rocking chair holding in his mouth a large black-headed shawl pin, three inches in length, when the chair was suddenly tilted, and in the effort to save himself the pin disappeared down his trachea without any cough or spasm of the glottis. No symptoms of any kind appeared to have supervened until a week later, when he began to be troubled with a cough, and a week later still the sputa became blood-stained. Three weeks after the occurrence he was examined radioscopically by Mr. W. R. Fox, and the pin was seen to be in the left bronchus, the head lying two and a half inches below the bifurcation, the point projecting into the trachea. It was suggested by Mr. Fox that an attempt should be made to extract the pin with an electro-magnet which he undertook to devise and construct, and as it was thought likely that tracheotomy might be required the patient was admitted under my care into the Alfred Hospital. Without going into unnecessary detail it was found at a subsequent examination made by Mr. Fox that the pin had travelled down into the lower lobe of the lung and that all idea of extracting it through the trachea would have to be abandoned. The boy's symptoms on admission were exceedingly slight; there was a little irritative cough and occasionally a streak of blood was expectorated; there was also a slight irregularity of temperature, which sometimes rose to between 99° and 100°F. at night; otherwise he appeared to be in excellent health and careful auscultation revealed nothing.

On radioscopic examination the following points were noted. The pin was readily seen lying in the lower part of the left lung, the point being directed obliquely upwards towards the trachea (Fig. 1). At each cardiac pulsation the point of the pin rose and fell as though it were resting upon the base of the heart. The position of the head could be easily indicated on the chest wall by examining in two positions, antero-posteriorly and laterally, and marking the spot coinciding with the head in either position. It was then found that when viewed antero-posteriorly the head was about on a level with the eighth rib; when viewed laterally it lay in a vertical plane corresponding to that of the posterior fold of the axilla. The project of extracting the pin through an opening in the chest wall looked as though it should be an easy matter; nevertheless it was novel work, and I had reason to be very glad that before undertaking it upon the living I sought an opportunity of studying the matter in the dead-house.

The results of my experimental investigations with a similar pin and a lung removed from the body were as follows. In the first place, it was clear that the pin had passed into the main bronchus of the lower lobe of the lung, which corresponded exactly with the position of the pin as shown by the rays. Secondly, I ascertained that by grasping the lobe firmly between the fingers and thumb and making a slight rocking movement I was able with a little practice to detect the rigidity caused by the presence of th pin. The observation which was really the most importar of all, however, was concerned with the extreme slipperines of the foreign body in the bronchus. I found that havin once grasped the lung containing the pin it would never d to let go or to relax the grasp until the pin was extracted Anything in the nature of fumbling caused the pin to sli away with great readiness and as it would then be travellin point first, the point being, moreover, in close proximit to the great vessels at the base of the heart, the danger that might result from maladroit handling were obvious an very real. Upon these considerations the following operatio was planned and carried out.

Operation (Oct. 2nd).—The boy being placed on his righ side, a free curved incision with the convexity downward was made and the flap thus marked out was reflected upwards. A portion of the left eighth rib six inches long was then removed from the postero-lateral part of the chest and air was cautiously permitted to enter the pleura through a small puncture. The resulting collapse of the lung was not attended by untoward symptoms and the pleura was opened up to the full extent of the wound. Ample room was afforded; the fingers of the left hand were passed between the lung and the diaphragm, the lower lobe grasped near its root and gently drawn towards the opening. It was now possible to recognise the rigidity caused by the presence of the pin. Maintaining a firm hold with the left hand the position of the head of the pin was ascertained by gently palpating the surface of the lung with the right fingers. A small incision was made in the lung over the pin's head; a sinus forceps, unopened, was pushed in until the pin was felt and by hitching the instrument under the neck of the pin the head was easily lifted out of the wound and the pin was withdrawn. There was no hæmorrhage but it is a notable circumstance that abscess formation had already begun round the foreign body, for when the head of the pin was reached a small quantity of pus (10 or 20 minims) escaped. No suture was put into the very small wound in the lung. The flap of integument was replaced and sutured with the exception of about two inches in the middle. This was left unclosed by sutures and a piece of oiled silk protective was laid over it before the dressings were applied; by this means free escape of air from the pleura was insured, while the piece of protective by its valvular action would impede the passage of air back into the pleura and thus encourage the expansion of the lung. Immediately after the operation there was great restlessness, which was relieved by a small dose of morphine, and for two or three days there were some dyspnœa and general distress, which, however, steadily diminished. There was also moderate fever, the temperature ranging between 99° and 100°, and examination of the chest revealed very mixed with butter and placed upon the back of the tongue may be administered. If the patient is unconscious the following is the plan now pursued at the Rotunda Hospital. I quote from the last report of Mr. E. Hastings Tweedy, the master: "We pass a stomach-tube through the mouth in the event of our patient being deeply unconscious and through the nose if she be in a state of semi-consciousness. In the former condition the soft palate fails to respond to the stimulation of the nose tube and the latter is in consequence much more likely to be passed into the trachea than through the œsophagus. By means of this tube the stomach is thoroughly washed out. Into the stomach is then poured, by means of the tube, a quart of slightly saline hot water, together with castor oil, elaterin, croton oil in four or five drop doses, or some saline purgative, according to the predilection of the operator." During the past ten years I have abandoned the use of chloral and chloroform for the convulsions and used instead morphine on the plan suggested originally by G. Veit. I give half a grain of morphine hypodermically when the fits commence followed by one-quarter grain doses as often as is found necessary to control the fits, the idea being simply *to keep the convulsions* in check. I have given two grains in this way in a period of 24 hours. Of course, each case must be watched carefully, and smaller amounts of the morphine will do in some cases than in others, but I feel that, owing to the teaching in reference to the use of morphine in Bright's disease, many medical men are afraid to use morphine so freely as it may be used in eclampsia. Very often a grain is all that is needed in divided doses to stop the fits. The great advantage of morphine over chloroform for the treatment of the fits is that it does not depress the heart. According to some authorities, another benefit of morphine is that while it is being administered it arrests metabolism. At the same time the patient's bowels are also evacuated by frequent enemata of soap and water with *castor oil*. Saline enemata may also be given but I prefer the subcutaneous injection, under the breasts, of saline solution. I have tried bleeding with the subsequent injection of the saline solution directly into the veins but do not think the results better than those following the subcutaneous injection into the areolar tissue. I have entirely abandoned the use of pilocarpin but I have seen benefit follow the use of the hot pack, though the present teaching of the Rotunda is against either it or any diaphoretic.

2. *Methods of eliminating the poison.*—This is best done by free purgation either by the mouth or by enemata, by saline infusion, by the hot pack, and by the non-administration of liquids.

3. *The obstetric management of eclampsia.*—Here we at once find recommended among obstetricians the most opposite lines of practice. The present teaching in the Rotunda is reverting to the view held by the older obstetricians, who advised treating the convulsions and letting the labour alone. In his last report (for 1903-4) the present master of the Rotunda writes: "Labour is never induced, nor is its onset to be desired. Should it unfortunately occur its progress is seldom interfered with. In the one case in which we departed from this rule the convulsions seemed to be rather aggravated than diminished by the complete delivery." On the other hand, Dührssen, and still later Bumm, as well as Leopold, profess by immediate delivery to have obtained good results, the method being mainly forcible dilatation of the cervix by incisions or dilators followed by emptying of the uterus as soon as it can be done after the onset of the fits. What line of practice is to be recommended with such contradictory advice? One thing is clear: no one but an expert obstetric operator who is accustomed to do abdominal and vaginal gynæcological work could attempt to try, as a routine practice in every case, the immediate emptying of the uterus, and even according to statistics the results seem better with the morphine plan. My own method is as follows:—When the convulsions occur in pregnancy, labour not having set in, I give the morphine, with purgation, and saline infusion and let the patient alone obstetrically. If, however, labour has set in I think it should be shortened by forceps under chloroform when the cervix indicates that this can safely be done. Suppose, however, that in spite of the morphine treatment the patient gets steadily worse, then I think we are justified in terminating the labour by emptying the uterus, using Bossi's dilator, followed by forceps or any other method that can be employed, acting as in the case of any patient whose state seems to indicate that the labour should be terminated with as little delay and as little disturbance as possible.

4. *Prophylaxis of eclampsia.*—In a pregnant woman we fear the onset of eclampsia when the principal eliminating organs—the kidneys—are not acting properly, this being evidenced by albuminuria and diminution in the amount of urine and urea excreted. Even before such premonitory symptoms as headache, giddiness, disturbance of vision, or severe epigastric pain have set in, we should endeavour to ward off an attack of convulsions. The patient, clothed in flannel, should be kept in bed, have a warm bath every night, and a free action of the bowels every day (cream of tartar, compound senna mixture, or compound powder of jalap may be given). She should be kept mainly on a milk diet with vegetables, bread-and-butter, and stewed fruit, and have plenty of fluids, plain water and mineral waters, to drink. If this plan is thoroughly carried out most cases will not develop convulsions.

While every case of eclampsia must be treated *per se*, I would recommend the following methods if the attack cannot be warded off:—

1. Treat the convulsions with morphine used subcutaneously. Keep the patient on her side, purge freely in the method recommended, use saline infusion, allow no liquids; in a word, as Gooch advised long ago, "take care of the convulsions, and let the uterus take care of itself."
2. Make an effort to eliminate the poison by purgation, hot packs, and by saline infusion.
3. If labour has not set in treat the convulsions but do not induce premature action of the uterus. If labour has begun and the patient is in the second stage and the os dilated give chloroform and deliver by forceps if possible, or by turning. If, however, morphine and purgation with saline injections have been tried and the patient is not improving, dilate the cervix and deliver.
4. For the convulsions after delivery use morphine, purgatives, and saline infusion.
5. In the prophylaxis of eclampsia rest, milk diet, warm baths, and purgatives are the best methods.

Belfast.

A CASE OF TUMOUR OF THE CAUDA EQUINA REMOVED BY OPERATION, WITH REMARKS ON THE DIAGNOSIS AND NATURE OF LESIONS IN THAT SITUATION.

By W. B. WARRINGTON, M.D. LOND., F.R.C.P. LOND.,
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THE twelfth dorsal spinous process and the space below it are opposite the sacral segments of the spinal cord and thus the origin of important nerves is located within a very small extent of nervous matter. From this fact, and since the central nervous system is incapable of regeneration, injury or disease to this part readily causes a maximum amount of destruction and little can be expected from surgical or, indeed, other forms of treatment. The great leash of nerve roots forming the cauda equina arising from the lumbar and sacral segments of the cord occupies, on the contrary, a long vertical extent and the pathological processes affecting the roots often only cause a partial, and if capable of removal, a recoverable form of injury. Hence surgical interference which is easy may also be attended with very considerable and even complete success. The symptoms are necessarily very similar whether the lesion is in the nerves or in the spinal medulla from which they take their origin.

Injury and disease in these two situations are not infrequent and it is therefore of much practical importance to be able to say whether the site of the morbid condition is in the cord (the conus medullaris) or in the cauda equina. I relate first a case of tumour implicating and limited to the cauda equina and afterwards give some account of the diagnosis and nature of the lesions met with in these situations.

I am much indebted to Dr. John Owen, the medical tutor to a different pathological lesion. The old view—that eclampsia depends on poisoning of the nerve centres by certain by-products which the kidney, owing to its abnormal condition, fails to eliminate—is now practically abandoned; indeed, if one special pathological condition is to be admitted as connected with eclampsia it would not be a lesion of the kidney but rather of the liver. At the Congress of Obstetrics and Gynecology in 1896, at Geneva, I saw for the first time microscopic sections exhibiting changes in the liver cells associated with eclampsia. These were shown by Professor Lindfors of Upsala. Bouffe de Saint Blaise, in his "Thèse de Paris, 1891, 'Lésions anat. que l'on trouve dans l'Éclampsie," tells us he found hepatic lesions in 42 consecutive cases and Schmorl[1] discovered them in 71 out of 73 necropsies. J. Whitridge Williams in his text-book of obstetrics says he has been able to demonstrate similar lesions in all the eclamptic livers examined by him, and he gives a figure showing that these hepatic lesions consist in irregularly-shaped red or white areas of necrosis caused by degenerative changes following thrombosis of the smaller portal vessels. All agree that in eclampsia the main post-mortem lesions are in the kidney, liver, and the brain, and while pathologists at present tell us that of these changes the most characteristic are in the liver, there is a doubt whether such morbid conditions are primary or secondary: the majority of observers hold that nearly all post-mortem changes in eclampsia are secondary. 2. The second view is that eclampsia depends upon a poison, a toxin or series of toxins manufactured by the mother and fœtus, and that the various changes found post mortem are really caused by the over-accumulation and non-elimination of these toxins. Now it must at once be admitted that no one has hitherto been able to isolate any of these toxins which may be said to be the specific cause of eclampsia. For the present the "toxæmia" view is the popular one, and while it may be accepted provisionally as a good working hypothesis and while there is considerable clinical and post-mortem evidence to support this view, it must be candidly admitted that scientific proof of the existence of the specific causation of eclampsia is still wanting. We are making progress by showing that older theories have become untenable, and, perhaps, in the future, as the result of combined clinical, chemical, and laboratory investigation, we may find a solution of a most interesting and engrossing problem. For the present, Zweifel's dictum still holds that eclampsia is "the disease of theories."

Certain points in the etiology of eclampsia must, however, be borne in mind by those who are seeking for an explanation of the condition which will cover all the facts.

1. Why is eclampsia so common in primiparæ and especially among those who are young or old? My own experience bears out Professor Schauta's statistics that there are nearly five times as many cases among primiparæ as among multiparæ. As to age, Dührssen, out of 195 cases of eclampsia, found 40·5 per cent. were either below 20 or over 30 years of age. To say, as an explanation of the fact, that primiparæ are more liable to eclampsia than multiparæ that their nervous system is more impressionable, and that pregnancy brings out any flaw in their constitution, is a mere begging of the question.

2. Why is eclampsia commoner in certain districts than in others? In the recent discussion on Dr. Robert Boxall's paper on the Treatment of Albuminuria and Eclampsia occurring in Pregnancy, which was read at the Leicester meeting of the British Medical Association, Dr. O. E. Purslow of Birmingham said he had only three cases of eclampsia in 6400 labours. As the general death-rate from puerperal convulsions was 0·3 per mille for Birmingham, his own district must be comparatively immune. At the Rotunda Hospital there were 56 cases of eclampsia among 20,000 patients, a proportion of 1 in 357. When collecting statistics for a paper read at the 1896 International Congress of Obstetrics and Gynæcology at Geneva I was much struck with the fact that certain parts of the United Kingdom had in a marked degree more cases of eclampsia than other districts. Does any other complication of pregnancy show such a remarkable variation in its occurence in some parts of the country more than in others?

3. Why is eclampsia commoner in certain years? Is this a mere coincidence and would such observations be different if we made records throughout longer periods, say fifty years instead of five or ten?

4. A most important point in the etiology of eclampsia is the part played by the fœtus. It is surely a very remarkable circumstance, to which attention was first drawn by the late Professor Winckel, that when, during pregnancy, the fœtus dies, even in the case of a woman who has what we term the premonitory symptoms of eclampsia, the danger for her is entirely overcome or very much diminished. Many years ago, before I was aware of Winckel's observation, I was much struck with this fact. I was asked to see a young primipara with the idea of bringing on labour. She was in the eighth month of pregnancy and had for a week been suffering with severe headache and occasional vomiting. The urine had been gradually diminishing and two days before I saw her it was when examined by her medical attendant, almost solid on boiling. There was œdema of the face and limbs. At our consultation the patient said that for the past day and night she had been unable to feel the child's movements and neither her own medical man nor I could hear the fœtal heart, nor could we discover the active movements of the fœtus. We decided to induce labour, but the patient was anxious that her mother should be with her and so we decided not to interfere until the next day when her mother was present. On the next day the patient said she felt better, the œdema was diminished, the urine had increased and was less albuminous, and under these circumstances we decided to wait. The patient steadily improved and a week later, after a natural labour, gave birth to a dead fœtus whose skin was peeling. All albumen had now disappeared. She has since had three living children and no return of any of the symptoms as observed in her first pregnancy. I have seen since several similar cases and I called special attention to this point at the Geneva congress in a paper introducing the question of the treatment of eclampsia. In the discussion which followed Professor Morisani (Naples) and Professor Pasquali (Rome) took part. The former stated that before deciding on obstetrical intervention it was necessary to ascertain whether the child was alive or dead, as he had on several occasions proved that the death of the fœtus put an end to the convulsions and the albuminuria. Professor Pasquali said he had found that the death of the child checked the eclampsia, and he confirmed the view put forward by me by stating that this fact suggested the question whether the fœtus does not play a rôle in the etiology of such a dangerous complication.

As further evidence in support of the view that the fœtus is an important factor in the rôle of the causation of eclampsia I may mention the following two points. In twin pregnancy there is a greater risk of eclampsia; statistics showed that while there is one twin pregnancy to 13 normal pregnancies in eclampsia there was only one twin pregnancy to 80 in pregnant women generally. Two French observers, Baron and Castaigne,[2] have shown that the transmission to the mother of substances injected into the fœtus ceases almost immediately after its death.

THE TREATMENT OF ECLAMPSIA.

For the sake of clearness, and accepting the toxin view as a working hypothesis, we may consider the treatment of eclampsia under the following heads:—1. How can the convulsions be treated? 2. How is the poison which is assumed to cause the fits to be eliminated? 3. What is the best way to manage the patient from an obstetric point of view? 4. When certain symptoms set in which make us fear the occurrence of eclampsia, what is the best treatment to adopt?

1. *Treatment of the convulsions.*—The patient, the subject of eclampsia, should be placed on her side (not on her back) with the head low. In this way fluids from the mouth do not tend to get into the larynx or lungs and so we try to avoid one of the morbid conditions so often seen in fatal cases of eclampsia—œdema of the lungs. The handle of a toothbrush or of a spoon covered with linen should be placed between the teeth at the first indication of an approaching fit to prevent injury to the tongue. A cork is sometimes used but it should never be employed because with the patient's movements small pieces may be bitten off and carried into the air-passages. If the patient is conscious a rapidly acting purgative such as five grains of calomel, a drachm of compound powder of jalap, or a drop of croton oil

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[1] Path. Anat. Untersuchungen uber Puerperal-eklampsie. Leipsic, 1893.

[2] Contribution à l'Etude de la Pathogénie de l'Eclampsie Puerpérale, etc., Archives de Médecine Expérimentale et d'Anatomie Pathologique, 1898.

mixed with butter and placed upon the back of the tongue may be administered. If the patient is unconscious the following is the plan now pursued at the Rotunda Hospital. I quote from the last report of Mr. E. Hastings Tweedy, the master: "We pass a stomach-tube through the mouth in the event of our patient being deeply unconscious and through the nose if she be in a state of semi-consciousness. In the former condition the soft palate fails to respond to the stimulation of the nose tube and the latter is in consequence much more likely to be passed into the trachea than through the œsophagus. By means of this tube the stomach is thoroughly washed out. Into the stomach is then poured, by means of the tube, a quart of slightly saline hot water, together with castor oil, elaterin, croton oil in four or five drop doses, or some saline purgative, according to the predilection of the operator." During the past ten years I have abandoned the use of chloral and chloroform for the convulsions and used instead morphine on the plan suggested originally by G. Veit. I give half a grain of morphine hypodermically when the fits commence followed by one-quarter grain doses as often *as is found necessary to* control the fits, the idea being simply to keep the convulsions in check. I have given two grains in this way in a period of 24 hours. Of course, each case must be watched carefully, and smaller amounts of the morphine will do in some cases than in others, but I feel that, owing to the teaching in reference to the use of morphine in Bright's disease, many medical men are afraid to use morphine so freely as it may be used in eclampsia. Very often a grain is all that is needed in divided doses to stop the fits. The great advantage of morphine over chloroform for the treatment of the fits is that it does not depress the heart. According to some authorities, another benefit of morphine is that while it is being administered it arrests metabolism. At the same time the patient's bowels are also evacuated by frequent enemata of soap and water with castor oil. Saline enemata may also be given but I prefer the subcutaneous injection, under the breasts, of saline solution. I have tried bleeding with the subsequent injection of the saline solution directly into the veins but do not think the results better than those following the subcutaneous injection into the areolar tissue. I have entirely abandoned the use of pilocarpin but I have seen benefit follow the use of the hot pack, though the present teaching of the Rotunda is against either it or any diaphoretic.

2. *Methods of eliminating the poison.*—This is best done by free purgation either by the mouth or by enemata, by saline infusion, by the hot pack, and by the non-administration of liquids.

3. *The obstetric management of eclampsia.*—Here we at once find recommended among obstetricians the most opposite lines of practice. The present teaching in the Rotunda is reverting to the view held by the older obstetricians, who advised treating the convulsions and letting the labour alone. In his last report (for 1903-4) the present master of the Rotunda writes: "Labour is *never* induced, nor is its onset to be desired. Should it unfortunately occur its progress is seldom interfered with. In the one case in which we departed from this rule the convulsions seemed to be rather aggravated than diminished by the complete delivery." On the other hand, Dührssen, and still later Bumm, as well as Leopold, profess by immediate delivery to have obtained good results, the method being mainly forcible dilatation of the cervix by incisions or dilators followed by emptying of the uterus as soon as it can be done after the onset of the fits. What line of practice is to be recommended with such contradictory advice? One thing is clear: no one but an expert obstetric operator who is accustomed to do abdominal and vaginal gynæcological work could attempt to try, as a routine practice in every case, the immediate emptying of the uterus, and even according to statistics the results seem better with the morphine plan. My own method is as follows:—When the convulsions occur in pregnancy, labour not having set in, I give the morphine, with purgation, and saline infusion and let the patient alone obstetrically. If, however, labour has set in I think it should be shortened by forceps under chloroform when the cervix indicates that this can safely be done. Suppose, however, that in spite of the morphine treatment the patient gets steadily worse, then I think we are justified in terminating the labour by emptying the uterus, using Bossi's dilator, followed by forceps or any other method that can be employed, acting as in the case of any patient whose state seems to indicate that the labour should be terminated with as little delay and as little disturbance as possible.

4. *Prophylaxis of eclampsia.*—In a pregnant woman we fear the onset of eclampsia when the principal eliminating organs—the kidneys—are not acting properly, this being evidenced by albuminuria and diminution in the amount of urine and urea excreted. Even before such premonitory symptoms as headache, giddiness, disturbance of vision, or severe epigastric pain have set in, we should endeavour to ward off an attack of convulsions. The patient, clothed in flannel, should be kept in bed, have a warm bath every night, and a free action of the bowels every day (cream of tartar, compound senna mixture, or compound powder of jalap may be given). She should be kept mainly on a milk diet with vegetables, bread-and-butter, and stewed fruit, and have plenty of fluids, plain water and mineral waters, to drink. If this plan is thoroughly carried out most cases will not develop convulsions.

While every case of eclampsia must be treated *per se*, I would recommend the following methods if the attack *cannot be warded off*:—

1. Treat the convulsions with morphine used subcutaneously. Keep the patient on her side, purge freely in the method recommended, use saline infusion, allow no liquids; in a word, as Gooch advised long ago, "take care of the convulsions, and let the uterus take care of itself."

2. Make an effort to eliminate the poison by purgation, hot packs, and by saline infusion.

3. If labour has not set in treat the convulsions but do not induce premature action of the uterus. If labour has begun and the patient is in the second stage and the os dilated give chloroform and deliver by forceps if possible, or by turning. If, however, morphine and purgation with saline injections have been tried and the patient is not improving, dilate the cervix and deliver.

4. For the convulsions after delivery use morphine, purgatives, and saline infusion.

5. In the prophylaxis of eclampsia rest, milk diet, warm baths, and purgatives are the best methods.

Belfast.

A CASE OF TUMOUR OF THE CAUDA EQUINA REMOVED BY OPERATION, WITH REMARKS ON THE DIAGNOSIS AND NATURE OF LESIONS IN THAT SITUATION.

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THE twelfth dorsal spinous process and the space below it are opposite the sacral segments of the spinal cord and thus the origin of important nerves is located within a very small extent of nervous matter. From this fact, and since the central nervous system is incapable of regeneration, injury or disease to this part readily causes a maximum amount of destruction and little can be expected from surgical or, indeed, other forms of treatment. The great leash of nerve roots forming the cauda equina arising from the lumbar and sacral segments of the cord occupies, on the contrary, a long vertical extent and the pathological processes affecting the roots often only cause a partial, and if capable of removal, a recoverable form of injury. Hence surgical interference which is easy may also be attended with very considerable and even complete success. The symptoms are necessarily very similar whether the lesion is in the nerves or in the spinal medulla from which they take their origin.

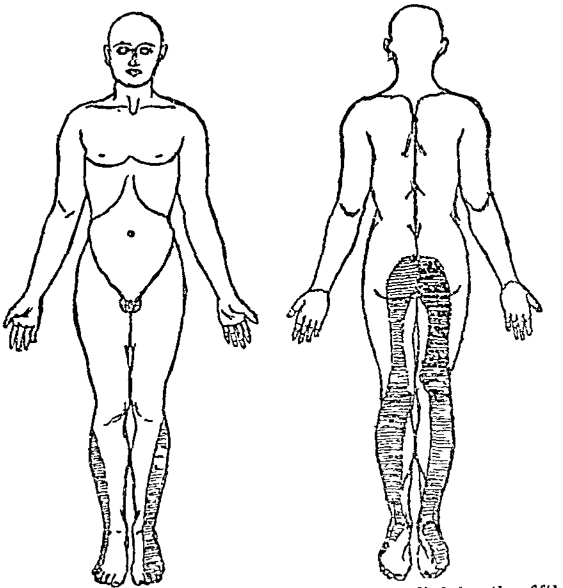
Injury and disease in these two situations are not infrequent and it is therefore of much practical importance to be able to say whether the site of the morbid condition is in the cord (the conus medullaris) or in the cauda equina. I relate first a case of tumour implicating and limited to the cauda equina and afterwards give some account of the diagnosis and nature of the lesions met with in these situations.

I am much indebted to Dr. John Owen, the medical tutor at the hospital, for many careful notes on the condition of the patient.

The patient, a laundryman, aged 36 years, was admitted to hospital on August 4th, 1904, on account of pain in both thighs and weakness of the lower limbs. He had suffered from the pain for about five months; the loss of power had developed later. Four years ago he contracted gonorrhœa followed by stricture of the urethra. On one occasion retention of urine had to be relieved by suprapubic puncture. Beyond this no history of illness could be elicited. Syphilis was denied and there was no evidence of it. The father had died from a "tumour of the brain" at the age of 56 years. The mother, three brothers, and five sisters are living and in good health. The patient looked ill and worn and evidently suffered greatly; he was anæmic and somewhat emaciated. He weighed 9 stones 4 pounds. The heart and lungs were normal. Nothing could be detected on palpation of the abdomen or by digital examination of the rectum. The urine was of specific gravity 1016; it contained no albumin or sugar.

The following is a description of the symptoms present. There was severe, spontaneous, shooting pain, often worse at night. It started about the middle line at the level of the highest part of the sacrum, passed downwards over both buttocks and the posterior surface of the thighs and outside of the legs as far as the ankle, but did not invade the feet. The pain was much worse when he lay on either side or on the face and was then referred especially to the lower part of the sacrum. There was sharp pain on flexing the thigh on the pelvis (sign of Lasègue), but no particular pain on pressing the muscles of the thigh or legs or along the course of the great sciatic nerve or at the points of Valleix.[1] The first, second, and third lumbar spines were somewhat uniformly prominent; no pain was caused by percussing these or by vertical pressure or by lateral pressure through the iliac crests. There was, however, considerable rigidity of the lower part of the spine. In bending backwards, forwards, or laterally, whilst the upper part of the spine moved the lower portion remained immobile and the resulting movement was one of the trunk together with the pelvis on the thighs. There were considerable loss of power in both lower limbs, more markedly so on the left side, inability to raise the left thigh against the least resistance, and weakness in the flexors of the leg and the thigh and in the muscles moving the feet, though none of these movements were absolutely paralysed. Thus there seemed to be weakness in all the muscles supplied by the lumbo-sacral plexus. All the muscles reacted to the faradic current but to a less extent on the left side. The knee-jerks were both brisk but the ankle-jerks were absent. The plantar reflexes were present though difficult to elicit. At times the reflex was a quick extensor reflex and at others the flexor type predominated. Micturition was normal but the patient stated that he had not as good control over the action of the bowels as formerly; he had to go to stool quickly in order to avoid soiling himself. On examining the rectum digitally the sphincter ani contracted fairly forcibly on to the finger and the rectum appeared to be dilated and ballooned. The patient also stated that he did not feel the examination. There was marked loss of sensation to touch and pain in the areas figured on the chart (Fig. 1). Light touches with the blunt head of a pin were not recognised at all and a pin prick was recognised as a dull, just perceptible sensation. This anæsthesia invaded, as figured, the penis, scrotum, and perineum. As regards the sexual organs, testicular sensation was preserved but there had been neither erections nor emissions for six months.

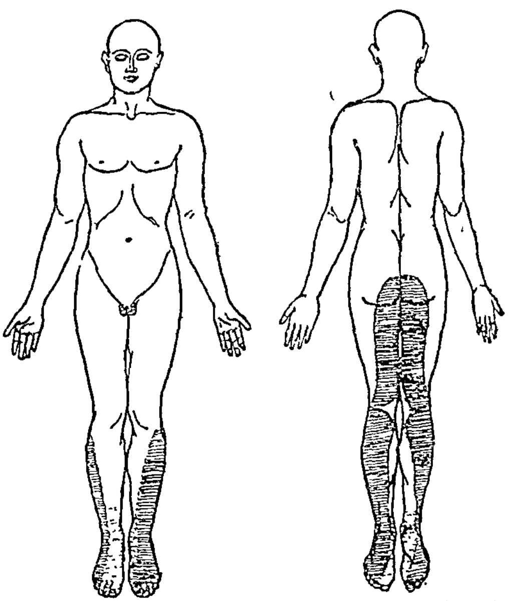
FIG. 1.



August 17th. Loss of sensation in the areas supplied by the fifth lumbar and all the sacral roots.

In the course of a fortnight the symptoms were considerably more defined and permitted an accurate analysis to be made. The motor weakness was bilateral, rather more on the left than on the right side. There was great increase in the weakness of the movement of the feet, which soon became absolutely powerless. On the other hand, the extensors of the legs—the quadriceps group—and the extensors and external rotators of the thighs, though somewhat weaker than natural, acted with moderate force, so that the leg could be raised from the bed. Abduction of the thighs was well performed. The biceps femoris was felt to contract but feebly. The semitendinosus and semimembranosus also contracted and apparently not with greatly diminished force. The muscles of the legs were somewhat but not greatly wasted. There was no reaction of degeneration, though the faradic irritability was diminished in all the leg muscles. The ankle-jerks remained absent; the plantar reflex could not now be obtained. The left jerk had gradually diminished and on August 29th it was absent. The right knee-jerk was brisk and on tapping the quadriceps tendon a lively contraction of the adductors on both sides occurred. The abdominal and cremastic reflexes were brisk. On the 23rd the patient first complained of some *difficulty* in passing urine, stating that he had to strain. Retention set in a few days *later* necessitating the use of a *catheter*, which the patient was unable to feel. Enemata were required; there were also involuntary passage of fæces and *total loss* of sensation of the act. The anus was patulous. The inner sides of the legs were now becoming anæsthetic (see *Fig.* 2), the area of loss of sensation in this zone being fairly well defined and more marked for pain than for touch. *The pain* remained very severe, necessitating the continual administration of morphine.

FIG. 2.



August 29th. The anæsthesia appeared in the fourth lumbar area.

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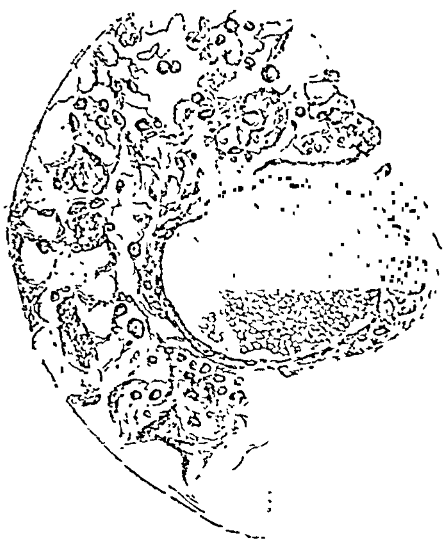
[1] Those places along the course of nerves which in neuralgia are painful on pressure.

The diagnosis of tumour of the cauda equina was made and an operation was performed by my colleague, Mr R. W. Murray, on Sept. 2nd. The spines and laminæ of the second, third, and fourth lumbar vertebræ were removed. On opening the dura mater a red, soft looking mass about an inch long was seen surrounded by the nerve roots. It bled very readily when the attempt to remove it was made but a considerable portion was removed. Subsequent examination showed the tumour to be an endothelioma or hæmorrhagic angiosarcoma (see Fig. 3). Rather unexpectedly the patient improved considerably and regained the power of walking with the aid of sticks, the knee-jerks returned, and the anæsthesia greatly diminished, but the state of the bladder and rectum did not improve. The pain also was very much relieved. Unfortunately at about the end of three months symptoms began to return and pain became again very severe. There could be little doubt from the histological examination that the tumour was malignant and that it had rapidly grown again.

FIG. 3.



Microscopical appearance of section of growth removed.

A second operation was thought to offer some slight chance of further relief, but on exposing the nerves it was found that the tumour had grown enormously and was now from two to three inches long. As the condition was obviously incurable Mr. Murray and I considered it justifiable to divide a number of posterior roots. The patient remained till death completely paralysed in the lower limbs and shortly after the operation pain, which had eased for a time, returned with great severity.

Remarks on the nature and diagnosis of diseases in this situation.—The distribution of the roots, forming respectively the lumbar and sacral plexuses, is now fairly well agreed upon. The lumbar roots form the anterior crural and obturator nerves and supply the quadriceps extensor group and the adductors of the thigh; their sensory distribution is on the front and sides of the thigh and inner side of the leg. It is obvious that in the case of my patient the functions of these nerves were unimpaired and that the lesion was one interfering with the functions of the sacral plexus. Such an extensive bilateral affection, nearly symmetrical, could be explained only by a lesion of these nerves, either where they are situated close together forming the cauda equina, or by implication of their centres of origin in the lowest part of the cord itself—viz., the conus medullaris. This term has been arbitrarily fixed to include that part of the cord which lies between the origin of the second and third sacral nerves to its termination, a definition which is convenient, since injury limited to it implies either a total or partial integrity of the lumbar nerves and, further, since it is a clinical fact that lesions of the cauda equina invade chiefly the sacral roots. Anatomically, indeed, the cauda equina includes the great leash of nerve roots which form both the lumbar and sacral plexuses, but for the reasons just mentioned its use clinically is restricted to the roots forming the sacral plexus.

A table given by Raymond,[2] constructed from clinical data, shows precisely the distribution according to that author of the last lumbar and first five sacral segments of the cord or the corresponding roots (see table). With regard to the sensory areas given in this table, I prefer to accept the scheme given by Seiffer,[3] made from a comparison of the many clinical observations on this subject, and place his statements adjoining Raymond's table. These areas are very much in agreement with those recorded in a valuable paper by Dr. C. R Box,[4] who has described the symptoms produced by a tumour of the cauda equina, in which the fifth lumbar roots were the first affected, producing anæsthesia on the outer side of the leg, the dorsum, and most of the sole of the foot; thence the growth of the lesion produced symptoms indicating invasion of one root after another in both an upward and a downward direction. In the case of my patient the anæsthesia involved all the areas of the sacral and the fifth lumbar roots, whilst the muscles belonging to the upper roots were not much affected. At a later period the appearance first of anæsthesia of the inner side of the leg and then of the loss of knee-jerks showed that the fourth and third lumbar roots were being invaded by the growth.

Raymond's Table.				*Sensory Supply according to Seiffer.*
—	Motor.	Sensory.	Reflexes.	
5th L. (abd.)	Glut. med and min., tens. fasc. femoris, semimemb., semitend., biceps.	Outer side of thigh.	—	Ext. surface of leg, dorsum of foot, sole of foot.
1st S. (ext. rot.)	Pyriformis, obt. internus, gemelli, glut. max.	Posterior surface of thigh and leg.	Plantar.	Ext. surf. of leg, dorsum and sole of foot; outer part of posterior surface of leg.
2nd S.	Tib. ant., peroneal muscles, centre for erection.	External surface of leg and of foot, sensation of bladder and upper part of rectum.	—	Median part of posterior surface of thigh.
3rd S.	Centre of ejaculation, ischio- and bulbo-cavernosi.	Sensation of urethra, penis, and scrotum.	—	Penis, scrotum, vulva, perineum, and region of buttocks.
4th S.	Muscles of bladder.	Perineum, sacral region.	Ankle jerk.	An oval area including the region of sacrum as far as the anus.
5th S.	Levator ani. sphincter ani.	Coccygeal region, anus.	Anal.	—

The diagnostic problems were: 1. Is the lesion in the cord (the conus medullaris) or the cauda equina? 2. What is its nature? The symptoms must necessarily be very similar, since the muscular paralysis, sensory disturbance, and affection of the bladder or rectum may be equally produced by a nuclear (spinal cord) or radicular lesion. It is therefore only by a consideration of the collateral circumstances that a diagnosis can be made. Excluding for the present external injury as a cause, the writings of Raymond[5] and Sippy[6] indicate the following points as being in favour of a lesion of the roots. 1. An insidious onset with general development and progression of symptoms. The conus medullaris gives origin from a very small extent to many nerves and hence a lesion primarily affecting it would rapidly produce its maximum amount of damage. 2. Pain, violent in nature, spontaneous or excited by change of position or by movement, is in favour of a radicular lesion; moderate pain may be present in either condition. 3. Pain over the vertebral column below the level of the second lumbar spine, exaggerated by percussion and radiating towards the lower limbs, is in favour of a lesion of the cauda equina. To this I am inclined to add rigidity of the lower part of the spine due to irritation of the nerves of the dura mater. Pain higher up, increased by pressure and not radiating very clearly over the lower limbs, is in favour of a medullary lesion. The sign of Lasègue (pain on flexing the thigh with the leg extended on to the pelvis), though it may be absent, is a further indication of a radicular lesion. 4. An asymmetrical development is a radicular symptom and is perhaps especially suggestive of an extradural lesion; remission of symptoms, especially amelioration in the condition of the bladder and rectum, and the slow appearance of muscular wasting, of the reaction of degeneration, and of trophic disturbance are also in favour of an affection of the cauda equina.

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[2] Nouvelle Iconographie de la Salpêtrière, vol. xv., p. 471, 1902.

[3] Archiv fur Psychiatrie und Nervenkrankheiten, Band xxxiv. Heft 2, 1901.

[4] THE LANCET, Dec. 5th, 1903, p. 1566.

[5] Loc cit. and Nouvelle Iconographie de la Salpêtrière, p. 65, 1895; Handbuch der Pathologischen Anatomie des Nerven systems, p. 1062, Berlin, 1903.

[6] Journal of Nervous and Mental Diseases, p. 108, 1902.

The symptoms produced by disease or injury in either of these situations on the bladder, rectum, and external organs of generation are important. We know chiefly from the work of Langley and Anderson that these organs receive a double innervation, one from the lower dorsal and upper lumbar roots through their white rami to the sympathetic and the other from the pelvic splanchnic or nervus erigens from the sacral roots. The exact functions of these two sets of fibres is not certainly known, but clinically an affection of the conus medullaris or its roots is attended by both motor and sensory paralysis of the bladder and rectum. This was so in the case recorded by Osler[7] in which a syphilitic gummatous process was limited to the third, fourth, and fifth anterior and second and third posterior sacral roots. Erection of the penis is also usually absent in these lesions. Hence the sacral centre is the more important. Raymond remarks and indicates in his table that the nerves of sensation are given off from a higher part of the cord than those of the muscles of the bladder and rectum; hence the two forms of paralysis are not always associated, as in one of the cases quoted by Raymond where there was incontinence of urine without any anæsthesia. The reverse condition was present in a case recorded by van Gehuchten[8] of damage to the conus in which with complete control over the sphincters and with the urine voided in a nearly natural manner the mucous membrane of the urethra and bladder was absolutely anæsthetic. Van Gehuchten,[9] indeed, draws the inference from this case that the sympathetic ganglia can function quite independently of the central nervous system. But it may be that in such a case the activity of the lumbar centre is sufficient. More difficult to explain is the fact that erections of the penis also occurred, although this organ was absolutely anæsthetic and presumably the sacral centre had been completely destroyed. The acts of ejaculation of semen and forcible expulsion of the last few drops of urine depend on the contraction of the bulbo- and ischio-cavernosi muscles and are always paralysed if the lowest sacral part of the cord or the corresponding roots are damaged; hence van Gehuchten concludes that it is only with unimpaired capacity for these actions and in the persistence of the anal reflex that the diagnosis of integrity of the conus medullaris and the corresponding roots can be made.

Nature of lesions of the cauda equina.—Dufour in his work, "Contribution à l'Étude des Lésions des Nerfs de la Queue du Cheval du Cone Terminal," in 1896 collected and analysed nearly 100 cases of lesions of the cauda equina, the great majority of these being traumatic; next in frequency came tumours, then forms of meningitis with or without hæmorrhage, tubercle, and syphilis.

Trauma.—Injury limited to the cauda equina is rare; usually the terminal part of the cord is also implicated. The site of the lesion is of much importance. Van Gehuchten,[10] who has analysed Dufour's cases, gives the following conclusions: 1. If no injury of the vertebral column is found it is probable that the medulla spinalis will have been injured. 2. In injuries of the first lumbar vertebra or above the conus medullaris is alone affected. 3. Injury to the second lumbar vertebra may cause damage to either the cone or the cauda equina, since the level at which the cord terminates varies; in lesions at this site injury to the cone cannot be excluded. 4. Injury below this level causes damage to the cauda equina.

Tumours.—These may take origin from the bones or meninges, from the cord or nerves, and may be extra- or intra-dural. Sarcoma and carcinoma seem the varieties most frequently met with, but fibrosarcoma, neuromata, glioma, lymphangioma, and myolipoma have been found. Dufour collected 21 cases; in only one had an operation been performed and this was successful (Laquer and Rehn). Since then several cases of very successful removal have been recorded—two cases of extradural sarcoma by Sachs[11] and an extradural endothelioma by A. Starr.[12] A further case operated upon is recorded by Frankel.[13] The patient died two months later after some temporary improvement. The tumour was a red pultaceous mass, microscopically a sarcoma. Putnam and Elliot[14] relate a case of extradural carcinoma which was removed. The patient also died in about five months, probably from a growth in the brain. This tumour, however, attacked the lower part of the cord rather than the cauda and as it could not be completely removed and the pain was agonising two nerve roots on each side were deliberately divided. The authors remark: "It might be justifiable to divide the cord above the new growth, so imperative was the need of relieving the extreme suffering." At a meeting of the Neurological Society on Oct. 27th, 1904, Dr. Ferrier and Sir Victor Horsley showed a patient from whom a fibromyxoma comprising the conus and cauda equina had been removed with marked success.

The diagnosis of tumour can only be made from the history, usually a considerable duration, and the progressive uninterrupted march in the severity of symptoms. At times, as in my case, the progress may be very rapid, a feature, of course, depending on the nature of the growth.

Hydatid cyst.—All the eight cases collected by Dufour occurred in women; in one the tumour presented as a fluctuating mass through the laminæ and another is noticeable on account of a remarkable remission of symptoms. In one many cysts invaded the central nervous system.

Meningitis and neuritis.—Under this head are cases of varying pathology. Only a few have been recorded; undoubted instances of syphilitic gummatous meningitis have been recorded by Osler and Westphal. This part of the nervous system may also be invaded by tubercle. Dr. Ferrier and Mr. Ballance showed a patient in whom this condition had been treated by operation with much success. Pachymeningitis hypertrophica occurred in one case amongst those collected by Dufour. The thickening of the membrane invaded the dura mater over the lumbar enlargement as well as over the cauda equina.

Lastly three recent cases of unilateral lesion of the cauda equina recorded by Raymond[15] may be abstracted.

CASE 1.—A patient, aged 46 years, whose occupation, that of a washerwoman, required her to stand for long periods of time and to be constantly working in cold water, began to suffer from pain in the lumbar region on the left side, which ameliorated somewhat during the next year. One morning on waking she found her left leg paralysed and flaccid. For several days there were also constipation and retention of urine. The bladder symptoms improved a little but four months later, on admission to hospital, she was found to have a bedsore on the left side of the sacrum with the paralysis and a distribution of anæsthesia met with in lesions of the sacral roots. The symptoms were throughout unilateral. Raymond considers the case to be one of a chronic meningitis. He rejects the diagnosis of tumour on account of the history, intermittent progress of symptoms, and the rather sudden onset of paralysis.

CASE 2.—A woman, aged 28 years, by occupation a machinist, was rather suddenly taken with violent pains in the middle of the sacral region radiating along the thighs in the course of the sciatic nerves, more severe in the left than the right side. Later, difficulty in walking developed with the characteristic paralysis of motion and sensation, but much more marked in the left side. There was no pain on pressure over the course of the sciatic nerve or at the points of Valleix. The sign of Lasègue was absent. There was incontinence of urine which later disappeared, and the sensation of the bladder and rectum was not interfered with. A trophic sore developed over the sacrum. The ankle-jerks and anal reflex were absent. The duration was two years. Raymond makes the diagnosis of radicular neuritis, caused by the occupation of the patient, the history and transitory improvement being against a tumour.

CASE 3.—The patient, a man, aged 38 years, a coachman and a hard drinker, suffered from numbness and tingling in the lower limbs, and a week later, after continuous exposure to rain, noticed that he had suddenly lost power in the left foot. The weakness gradually invaded the leg and thigh; there was also considerable pain in those parts; later difficulty in micturition occurred, followed, however, by a return to the normal condition. In this condition, having been ill 15 days, he went to hospital. He was found to have the characteristic motor and sensory paralysis in the left side with the reaction of degeneration in the muscles of the leg. The knee-jerk was present; the ankle-jerk was absent. There was no pain on pressure over the course of the sciatic nerve and the sign of Lasègue was absent. There was no anal reflex and he could not dislodge the last drops of urine from the urethra without much straining. Although he had no incontinence of urine or fæces yet the mucous membranes were insensitive. Raymond again considers this case to be one of radicular neuritis. The sudden onset indicates that it is in part a vascular lesion, an apoplectiform neuritis, but not comparable to those cases in which a hæmorrhage takes place into the sheath of the nerves; in such instances the symptoms attain their maximum extent at once and then gradually diminish or at least remain stationary. Raymond rather considers it is a form of compression, a pachymeningitis hæmorrhagica. The diagnosis of tumour was rejected on account of (1) the unilateral nature of the symptoms; (2) the rapid onset; and (3) the temporary amelioration.

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[7] Referred to in Dufour's Thesis, p. 167.

[8] Le Névraxe, vol. iv., fasc. i., p. 93, 1902.

[9] Loc. cit.

[10] Loc. cit.

[11] Journal of Nervous and Mental Diseases, 1902, p. 108.

[12] Ibid., 1901, p. 157.

[13] *Ibid.*, 1903, p. 101.

[14] Ibid., 1903, p. 665.

[15] Loc. cit.

PS.—The patient in my case died early last May. At the necropsy the original growth was found to be of very large size and multiple growths were present in the pia mater along the whole length of the spinal cord. A similar growth was also present in the angle formed by the cerebellum, pons, and medulla.

Liverpool.

129 CONSECUTIVE AND SUCCESSFUL OPERATIONS FOR APPENDICITIS DURING THE QUIESCENT PERIOD IN 12 YEARS (TREVES'S OPERATION).[1]

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SURGEON TO THE CARDIFF INFIRMARY; CONSULTING SURGEON TO THE HAMADRYAD HOSPITAL, PORTH HOSPITAL, BRIDGEND COTTAGE HOSPITAL, CARDIFF PROVIDENT DISPENSARY, AND BARRY ACCIDENT HOSPITAL.

MY first operation was performed on April 17th, 1893, on a patient of Dr. J. D. Williams. It was done in so small a room that the anæsthetist had to take his position on the bed which occupied most of the available space. The appendix was retrocæcal in position and about two inches of the right ureter and the common iliac blood-vessels were exposed before it was successfully removed. It was an ordeal for a beginner. My first seven patients belonged to seven different nationalities, an extraordinary illustration of the universality of the disease.

Up to the year 1898 operations were performed under the wet antiseptic system; since then they have been performed under dry aseptic methods, the operator and the assistants wearing thread gloves regularly. Sponges were discarded with the antiseptic method and gauze was substituted. The change from the antiseptic to the aseptic method has left two lasting impressions upon my mind: the first is that shock or reaction after operation is very much less under aseptic methods, due in some degree to the fact that the patient's system is not poisoned by the absorption of carbolic acid or perchloride of mercury: and the second is the disappearance of suppuration and stitch abscess. When these complications occur the surgeon or his assistants are usually at fault, but occasionally one finds a patient who has coarse and rough skin, or is liable to eczema or other forms of dermatitis from trivial causes: but even in such patients suppuration can be prevented by taking the sutures out within 24 hours and by paying special care to the skin. When pus appears in a clean wound the surgeon's technique is at fault. The abdominal wound was closed by *en masse* sutures during the antiseptic system and in tiers since it was discarded. The number of layers of buried sutures varies with the thickness of the abdominal wall. When the stratum of subcutaneous fat exceeds half an inch its surfaces are approximated by buried sutures in order to leave as little tension as possible upon the skin sutures. During the antiseptic period layers of iodoform or cyanide gauze were placed next the skin and then the whole of the abdomen was covered with Gamgee tissue and kept in place by a broad bandage and a spica round the right thigh. At present no bandages or other dressings are used as the wound is simply sealed with gauze and collodion dressing. Formerly patients were kept in bed for from two to four weeks; now they are allowed to get up in from 8 to 13 days after operation. Nevertheless it is necessary to caution patients against doing stupid things when they get away from the surgeon's control. One of my patients took a hot bath and went for a long drive on a cold day on the twelfth day after appendicectomy; he was punished by a severe attack of pneumonia.

I advise removal of the appendix in cases (*a*) of operation for ventral hernia following the opening of a perityphlitic abscess; (*b*) in cases of persistent thickening or induration after a first attack of appendicitis (see Fig. 1). Occasionally I have removed the appendix after the first attack has run a normal course, owing to the patient's dread of having another attack when travelling in places where experienced surgeons would not be available. Lastly, I advise removal of the appendix after two definite inflammatory attacks. It is incumbent on all good surgeons to emphasise the condition *inflammatory*, as quite a host of healthy appendices have been removed for so-called appendicular colic. There can be no doubt but that there are definite attacks of appendicular colic due to circumstances similar to those which give rise to renal and biliary colic; nevertheless I think one should be extremely careful in estimating the value of this particular symptom in forming an opinion as to the advisability of having an operation performed. There is another sign—tenderness over McBurney's point—which often misleads like a will-o'-the-wisp, if the surgeon looks upon it as a valuable symptom. It is present in many other conditions than that of appendicitis. Quite recently I saw two patients who had had appendicectomy performed for the combined symptoms of "apyrexial appendicular colic with well-marked tenderness over McBurney's point" without the slightest benefit to the unfortunate victims. Those who have strong faith in the value of these symptoms would do well to ponder over Dr. Johnson's notion about the wind egg. If the clinician takes the trouble to test for tenderness over McBurney's point in cases where there is no suggestion of appendicitis he will perhaps be surprised to find it "well marked" in a certain number of apparently healthy

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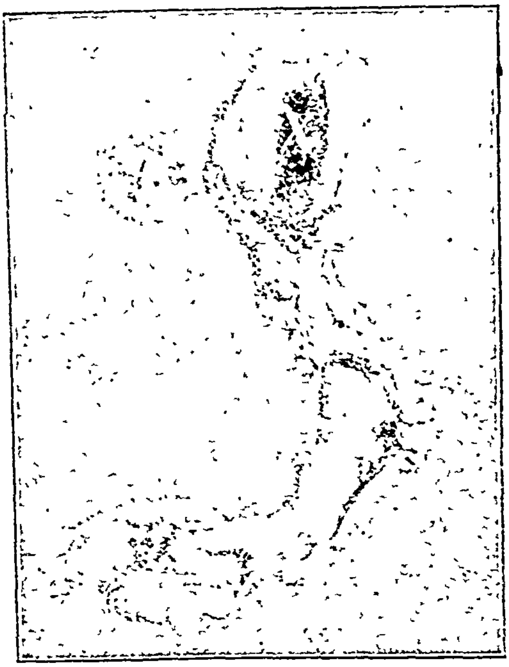

Appendix removed for a first attack. The concretion marked 1, removed from X, must have existed many months before the symptoms of peritonitis set in.

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[1] A paper read before the Medical Society, Newport (Mon.), on April 18th, 1905.

individuals; also in cases of right renal colic, early caries of the spine, Glénard's disease, colitis, and dilated stomach, &c.

In connexion with the difficulties of forming a correct diagnosis I would like to refer to a remarkable case that I saw in 1899 with Dr. C. C. Shepherd. A man, aged about 30 years, had had between 60 and 70 definite attacks of appendicular colic, accompanied by vomiting and well-marked tenderness over McBurney's point lasting from a few hours to two or three days. There was no hæmaturia or albuminuria. We deferred interfering with the appendix until we observed a complete attack. The next one was of exceptional severity and came on whilst the patient was walking. He was found insensible and collapsed and his life was despaired of for a time but he gradually recovered with his "usual symptoms of appendicitis," but a swelling was noticed behind the cæcum which extended to the right loin, suggesting nephritic or perinephritic trouble. I operated and removed a large clot of blood from around a small cystic kidney with a short impermeable ureter which terminated in a cord. The condition of the kidney was evidently congenital and the probable explanation of the repeated attacks of simulated appendicitis was due to small recurrent hæmorrhage round the cystic kidney, but until the last attack they were not of sufficient volume to give rise to a detectable swelling. The patient has enjoyed excellent health since the operation (1904).

I may further illustrate the difficulties and pitfalls which diagnosticians have to face in cases of simulation of appendicitis by recording the following examples:—

CASE 1. *Salpingitis simulating enteric fever.*—A woman, who was on a visit to Cardiff, was treated as a case of typhoid fever and was sent to the sanatorium, where for a time the disease seemed to run the course of ordinary enteric fever until a swelling appeared in the right iliac fossa. Dr. D. R. Paterson saw her in consultation with Dr. E. Walford. The symptoms now pointed to the development of a perityphlitic abscess. I was asked to see her and concurred with the diagnosis. At the operation it turned out to be a case of right salpingitis due to acute infection by the gonococcus. Some months afterwards when applying to the London Truss Society the patient reported herself as a case of operation for perforation during an attack of enteric fever!

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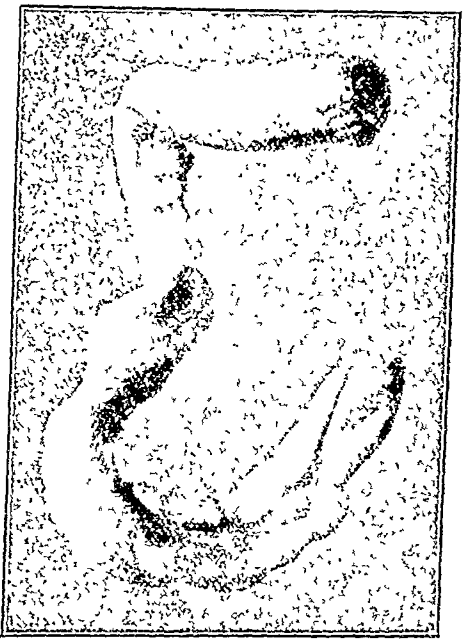

Appendix which gave rise to colic simulating passage of gall-stones owing to undescended cæcum.

When the cæcum in its developmental evolution does not descend to its normal anatomical position appendicitis in these circumstances simulates diseases of viscera in that particular region. In one case I operated for perforation of a supposed duodenal ulcer but was surprised to find that it was a case of gangrenous appendicitis with perforation near its attachment to the cæcum which lay in contact with the under surface of the liver.

In women it is frequently difficult to make a correct diagnosis between inflammation of the right ovary and right Fallopian tube and that of the vermiform appendix. Sometimes they are all simultaneously involved in the process. In perforative appendicitis the symptoms are in the early stages not uncommonly identical with rupture of a right tubal pregnancy, but fortunately in these conditions proper treatment does not depend upon correct pre-operative differential diagnosis but upon the adoption of means to meet the conditions found after the abdomen is opened in cases where perforation is diagnosed.

When a case presents a definite swelling near or in the pelvis and there is a doubt as to its being due to blood, serum, or pus, an examination of the blood for leucocytosis is of considerable importance, but in deciding upon the urgency of operating it is necessary to bear in mind that big collections of pus in an appendix or a Fallopian tube are capable of being removed by non-operative natural processes. *Ubi pus ibi incisio* is an excellent law for observation in practice but it is not to be taken as that of the Medes and Persians "which altereth not." I saw a female patient with Mr. J. P. T. Burke at Llanbradach during the third week of an attack of suppurative appendicitis. She stated that she had had a similar attack some years ago and that she got well by the "discharge of much matter" through the vagina. She had a globular swelling occupying the right half of the pelvis and extending upwards as high as the right anterior superior iliac spine. Her temperature was 103° F. and her pulse was 102. She had had rigors and sweatings; per vaginam the swelling was fluctuating. An operation was advised and on the next day she was driven to Cardiff Infirmary, but owing to a sudden fall in her pulse-rate and temperature I kept her under observation for nearly a month and the swelling gradually got smaller until it reached to less than a quarter of its size on admission. At the operation I removed the appendix and the whole track of the abscess cavity; the appendix had ulcerated through its coats near its base into the meso-appendix and formed an abscess cavity which became attached to, and perforated, the anterior abdominal wall; its contents had become dried up into firm putty-like material.

In my list of cases I only operated once during pregnancy for relapsing appendicitis during the sixth to seventh month at the infirmary. The appendix was carried upwards by the uterus and the operation was easy and done quickly and the patient had a normal recovery and went to term.

Amongst the unusual complications of relapsing appendicitis was one of glycosuria. A female patient of Dr. R. H. S. Torney, Cowbridge, was kept under observation for about a month before I operated. The glycosuria was intermittent and large quantities of sugar were sometimes passed. After I removed a tensely distended appendix there was no recurrence of glycosuria. The appendix was filled with bluish-white pus having a foul, nauseating smell. Unfortunately it was put at once into formalin. The pus in all probability contained poison with properties similar to those possessed by phloridzin, which under the varying tension that it was subjected to in the appendix periodically became absorbed and gave rise to glycosuria.

Mr. Llewellyn C. P. Phillips of Cairo, in an interesting paper upon Some of the Surgical Aspects of Glycosuria and Diabetes,[2] has collected four cases of appendicitis associated with glycosuria. The treatment in three of his cases was expectant and in the fourth an abscess was opened. In my case removal of the appendix with its offensive contents cured the glycosuria promptly.

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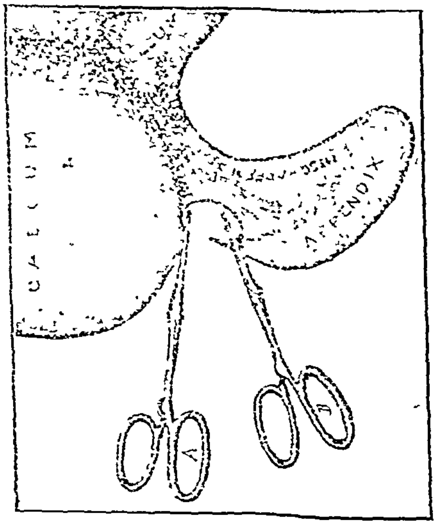
In three cases I did not remove the whole of the appendix owing to the risk involved; in two the tip of the appendix was incorporated with the rectum wall and I left the end implanted in the rectum; in one convalescence was protracted but eventually the patient became free from pelvic pain and has remained so for more than two years. In three cases I did not attempt to remove the appendix as it was surrounded by coils of small intestine so densely bound together that successful removal would have involved resection of intestine and a perilous dissection of the mass in order to liberate it from the sacrum and brim of the pelvis. In one of these patients an abscess subsequently formed which discharged into the rectum and was cured; the other two patients enjoy good health but for an occasional "bout of indigestion." I think it is better to let nature deal with such conditions than to perform dangerous and hazardous operations for which patients are not prepared. Patients prefer to put up with life in discomfort than to die victims to ultra-radical operations.

There is no royal road either as to the method of opening the abdomen or of removing the appendix, but in a large number of cases one can amputate the appendix through a two-inch skin incision and forcible entry by blunt dissection through the muscular planes but it often becomes necessary to enlarge the opening considerably in order to deal with unforeseen complications. Sometimes the complete operation can be performed with ease in ten minutes but usually it takes more than double that time and the last one I did (April 13th, 1905) took one and a half hours. The Trendelenburg position is of great value in cases where the appendix is situated in the pelvis; in these cases it is usually easier to remove the appendix by starting from above by severing it from the cæcum and then continue the dissection downwards towards the tip. I adopt the same course in cases where there is no meso-appendix and where the end of the appendix is tied down. This method is also preferable in cases where the base of the appendix is healthy and its end has a pear-shaped enlargement (see Fig. 3). In all other conditions of the appendix it is easier to start at the free end and work towards its attachment to the cæcum. On occasions where the diseased appendix resembles an icicle in relation to its attachment to the cæcum it is occasionally necessary to remove a small piece of the cæcal wall in order to get a suitable stump. It has not been my fortune in most of the cases to be able to perform an ideally simple method of dealing with the stump of the appendix—i.e., crush it at its cæcal attachment and apply two pairs of narrow-bladed forceps to the crushed part and either burn off or cut off along the forceps attached to the cæcum, then tie and invaginate by either a purse-string or interrupted suture. I find a serrated crushing forceps far superior to a smooth one owing to its obliterating effect upon the blood-vessels.

FIG. 3.



To show that when the appendix is in the pelvis, or has no meso-appendix, the first step is to crush its attachment to the cæcum and to apply two pairs of forceps to the crushed part which is then cauterised or cut flush along forceps A.

No matter what method is used in treating the stump it is not only desirable but always necessary to bring the peritoneum over raw surfaces whenever possible, as post-operative complications in after years can only be avoided by careful attention to these details. A patient who was operated upon by a well known surgeon in 1890 and to whom I administered the anæsthetic died last year from acute strangulation due to a coil of intestine being incarcerated under a band extending from the end of the cæcum to the abdominal wall. The base of the appendix was simply tied and cut off after the early fashion of dealing with an ovarian pedicle. When the stump cannot be covered with the peritoneum the end of the cæcum can usually be fixed to the abdominal wall by points of sutures or omental flaps applied to it.

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Cardiff.

FAMILY TABES DORSALIS: TABES IN HUSBAND, WIFE, AND DAUGHTER.[1]

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F.R.C.P. LOND.,
PHYSICIAN (WITH CHARGE OF OUT-PATIENTS) TO THE LEEDS GENERAL INFIRMARY.

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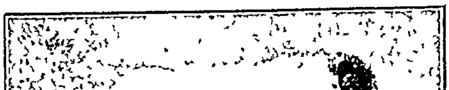

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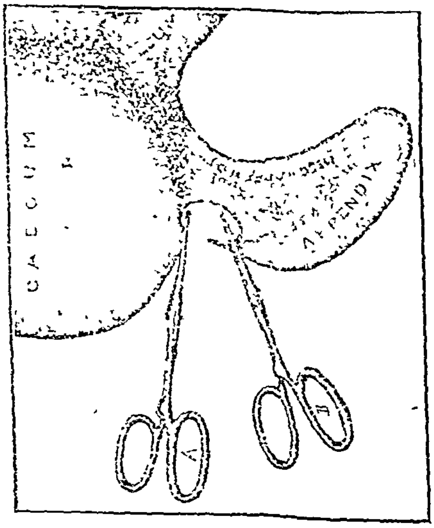

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[1] A paper read before the Neurological Society on May 18th, 1905.

[2] Trevelyan: Brit. Med. Jour., vol. ii., 1898.

couple developed tabes in her thirty-seventh year—a late date for tabes to develop on a congenital syphilitic basis. It is also true that we found no marks of congenital syphilis upon her and there is only the evidence provided by her family in favour of congenital syphilis.

It is not, however, absolutely necessary for the purpose in question that the patient should bear the usual stigmata of congenital syphilis—indeed, some go so far as to look upon the tabes itself as a stigma of late hereditary syphilis—and on the other hand, I think we have fairly excluded acquired syphilis. It is interesting to note that in the case of a tabetic woman, aged 22 years, bearing the stigmata of congenital syphilis, Barthelemy[30] deliberately assigns the tabes to congenital syphilis although the patient had been abundantly exposed to the infection of acquired syphilis but had not had any of its usual manifestations. Quite apart from the subject of tabetic couples and their offspring, a fair number of cases are on record in which adult tabes has been attributed to congenital syphilis. Usually the disease has commenced before 20 years of age but in some cases considerably later. Thus Max Nonne[31] quotes a case of tabes in a man aged 32 years, who had suffered from severe lightning pains for two years and who had never been infected with syphilis or addicted to drink. The patient had previously been treated for congenital syphilis and Nonne looks upon the latter as the cause of the tabes in this case. Sabrazes[32] has also reported a most interesting case n a man, aged 42 years, in whom the tabes appeared two years previously. In the absence of a history of acquired syphilis and in the presence of marked stigmata of congenital syphilis the author assigns the latter as the cause of the tabes. Pourreyon[33] in his interesting thesis concludes that when tabes or general paralysis is of congenital syphilitic origin it begins at an age between five and 40 years and he adds that these cases are interesting for the study of precocious or late congenital syphilis. Dydynski[34] even goes so far as to say that if observers do not lose sight of congenital syphilis fewer cases of tabes will be recorded where syphilis has been excluded.

The question, it seems to me, may be put in this form in my cases. Did the tabetic couple merely hand down to their daughter a general vulnerability of nervous tissue to certain noxæ (whether in the form of the syphilitic virus or of stress, strain, &c.), or did they transmit to her the actual virus which would bring about with little or no further provocation the eventual degeneration of the afferent sensory neuron?—and I should answer it in the latter sense. Kahlischer[35] has related an instance of tabes in mother and son, the tabes appearing at the age of 26 years in the latter He excludes to his satisfaction both congenital and acquired syphilis and he attributes the tabes almost solely to congenital hereditary influences. This question of neuropathic heredity in tabes (and general paralysis), at one time much emphasised by the French school, is no longer looked upon as of any very great importance. Yet there have been series of cases recorded where the neuropathic heredity has been marked. Thus Berbez[36] as long ago as 1887 mentioned that among 150 cases of tabes there was a neuropathic heredity in 63 and tabes or general paralysis in a parent in 15 of these cases. Dydynski[37] in 1890, in speaking of infantile tabes (and at that time he would only allow seven such cases), found besides congenital syphilis a neuropathic heredity in six. Probably this neuropathic heredity can only mean a greater vulnerability of the nervous system to the causes of tabes such as the syphilitic virus. It is well seen in cases where, for instance, brothers infected with syphilis from different sources (Erb, Max Nonne, and others) have developed tabes. Among my cases I have records of two brothers, one of whom was suffering from tabes when the other developed an acute general paralysis with fits and died within the year. Apart from this vulnerability of the nervous system, it should, no doubt, be remembered that the syphilitic virus may sometimes be of great potency so far as the nervous system is concerned. This is well exemplified when two or more individuals contract syphilis from the same source as in the cases of Erb,[38] Max Nonne,[39] and Marie et Bernard,[40] and all, or nearly all, ultimately develop tabes (or general paralysis), or again in the truly appalling instance related by Brosius[41] where out of seven glass-blowers infected with syphilis from the same source one developed tabes, another tabo-paralysis, and two others general paralysis. As far as the neuropathic heredity is concerned it would appear to be correct to look upon it with Fehre[42] as nothing more than a predisposing cause and probably not as a very important one.

I have to thank Dr. P. G. Steele, the resident medical officer at the Leeds General Infirmary, and Dr. B. Suggit of the Leeds Public Dispensary for assistance in getting together notes and histories of my cases.

Leeds.

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[30] Barthelemy: Annales de Dermatologie et de Syphiligraphie, 1897.

[31] Nonne: Syphilis und Nervensystem, 1902.

[32] Sabrazes: Nouvelle Iconographie de la Salpêtrière, 1903.

[33] Pourreyon: Loc. cit.

[34] Dydynski: Loc. cit.

[35] Kahlischer: Loc. cit.

[36] Berbez: Loc. cit.

[37] Dydynski: Loc. cit

[38] Erb: Berliner Klinische Wochenschrift, 1904.

[39] Nonne: Ibid.

[40] Marie et Bernard: Deutsche Zeitschrift für Nervenheilkunde, 1897.

[41] Brosius: Archiv für Psychiatrie, Band xxxvii., 1903.

[42] Fehre: Berliner Klinsche Wochenschrift, 1901.

A SIMPLE TECHNIQUE FOR THE BACTERIOSCOPIC EXAMINATION OF SEWAGE.

BY W. H. C. FORSTER, M.B., C.M. EDIN.,
D.P.H. CANTAB.,
CAPTAIN, I.M.S.

(From the Laboratory of the Pasteur Institute of India, Kasauli.)

FROM the point of view of the laboratory worker in the East the methods at present in vogue for the quantitative estimation of the "organisms of indication" in sewage leave much to be desired. These methods all presuppose the ice packing of samples when necessary and the existence of a laboratory well stocked with the particular apparatus required—preliminary conditions which do not often obtain in India. Thus it has come to pass that although biological methods for the treatment of sewage have been making steady headway in India for some years past, official and public records are silent on the bacteriological side of the question. It will, I think, be readily admitted that, in the interests of the public health, every biological method for the disposal of sewage should be made the subject of systematic bacterioscopic examination. It is unlikely, however, that this will ever be the case whilst our present methods of investigation remain unaltered. A brief survey of some of the methods at present employed in the bacterioscopic examination of sewage will serve to make the point clear. The criteria usually adopted in the examination of sewage are four in number: (1) the total number of organisms per cubic centimetre; (2) the number of bacillus coli per cubic centimetre; (3) the number of streptococci per cubic centimetre; and (4) the number of spores of bacillus enteritidis sporogenes per cubic centimetre. For the purpose of demonstrating the cumbersomeness of the methods of estimation usually employed it will be sufficient if we indicate only those available for the quantitative estimation of bacillus coli and the spores of bacillus enteritidis sporogenes.

The methods of estimating bacillus coli.—1. By the microscopic examination of colonies developing from surface cultivations on phenolated gelatine or agar plates. These cultivations are made either directly from the material to be examined or from preliminary phenol broth cultures. This method is extremely laborious and even in the most practised hands leaves much to be desired in the way of accuracy. 2. By the neutral-red broth method. 3. By MacConkey's method. 4. By Pakes's method. 5. By Houston's method.

Method of estimating the spores of bacillus enteritidis sporogenes.—The only practicable method is by the use of milk cultures heated to 80° C. for 15 minutes and incubated anaerobically at 37° C.

Whichever method of enumerating bacillus coli the routine worker may adopt he has to face the difficulties of ice packing and apparatus. For example, let us suppose that a sewage-disposal system consisting of an open septic tank and a couple of continuous filters is the subject of the presence of pains. Since then I have watched the pupil reflex gradually (but with variations) diminish and disappear, and also the knee-jerks become less and eventually go altogether, the left disappearing first. The following are the clinical details of this case.

The patient, aged 43 years, commenced to have pains and occasional double vision when she was 36 years of age. She also complained of some difficulty in getting up and down stairs. A feeling of constriction round the body was noticed a little later and occasionally she had slight bladder disturbance. Present condition (May, 1905). The patient is distinctly neurotic but otherwise there are no mental symptoms. The pupils are small (one and a half millimetres) and equal but they do not react to light. A perceptible reaction occurs to accommodation. There is no affection of the eye muscles, no optic atrophy, and no choroiditis. There is some incoordination in the legs, especially in the left, and she sways a little when standing with the eyes closed and the feet together, but this incoördination is very slight. There is a zone of hyperæsthesia round the trunk on a level with the eighth and ninth dorsal vertebræ. There is no knee or tendo Achillis jerk. The plantar reflex is flexor in type. There is no bladder disturbance at the present time.

The family history of this tabetic couple is of considerable interest. There have been 12 pregnancies and of nine children born alive only one was a boy. Only three of these children are still living. The following is an account of the results of the 12 pregnancies: 1. A girl, now aged 43 years (tabetic); married (for family see later). 2. A boy, died, aged 15 years, from rheumatic fever and cardiac disease. 3. A girl, now aged 38 years, quite well; married: ten children (nine living, three miscarriages). 4. A girl, died, aged 14 months. 5. A girl, died, aged 23 years, from puerperal fever. She also had rheumatism and heart disease. (The first symptoms of tabes appeared in the wife about this time). 6. A girl, died, aged four and a half years, from inflammation of the brain. 7. A girl, died, aged 15 months. 8. A miscarriage. 9. A miscarriage (probably a macerated fœtus). 10. Born dead at term. 11. A girl, now aged 26 years, unmarried. She has had rheumatism and heart disease. 12. A girl, died, aged 14 months. The last half of that family was strikingly and curiously worse than the first half.

The usual history of the syphilitic family such as that related by Pourreyon[3] in a tabetic couple may be given for contrast. There were five pregnancies: (1) a miscarriage at four and a half months; (2) a miscarriage at six months; (3) a miscarriage at seven months; (4) born at term, died aged four months (tabetic pains appeared in the wife); and (5) living and well.

As has been mentioned, no satisfactory evidence of past syphilis is forthcoming in my tabetic pair except such as is derived from the family history. Before his marriage the man had been a sailor and perhaps for this reason syphilis is not very improbable. It was known that the husband and wife were a hard-working, steady, and industrious couple. The history of the daughter's family is also important. There have been six pregnancies. 1. A boy, died, aged five years, from inflammation of the brain, probably tuberculous. 2. A girl, aged 14 years, alive and well. 3. A miscarriage. 4. A girl, aged 11 years, alive and well. 5. A girl, aged eight years. This child is said to have had snuffles when six months old but there were no other symptoms. This and the next child have been examined and no evidence of congenital syphilis can be made out in them. 6. A girl, aged four years, alive and well. The daughter's husband is a healthy man who denies having had venereal disease and no signs of past syphilis can be found on him. The daughter herself also presents no history or evidence of acquired syphilis. She also shows no signs of congenital syphilis but the upper teeth have decayed away. I conclude that this tabetic couple almost certainly had syphilis and that there is no evidence to show the existence of acquired syphilis in the tabetic daughter and her husband.

I propose to make a few remarks on conjugal tabes, on tabes in both parents and offspring, on tabes in one parent and offspring, and also upon the relationship between congenital syphilis and tabes. While admitting the very strong evidence of the identity of the morbid entity in tabes and general paralysis, I shall only refer incidentally to the latter affection. Little need be said about conjugal tabes, for much has been written about it during the past few years, and series of cases have been collected and added to by various writers. The percentage of syphilis in them is given by Hudovernig[4] as 96 and by Raecke[5] as 90. It may be of interest to refer to an instance of conjugal tabes in pure negroes which was reported by Francine,[6] because syphilis is common and tabes apparently very rare among negroes. Usually the disease begins in the husband first and the wife develops symptoms in the course of from two to five years, or even ten years, and in one case 20 years afterwards. In my couple the disease began first in the wife and the interval before the appearance of the symptoms in the husband was one and a half years. It is also noteworthy that if general paralysis takes the place of tabes in the affected couple it usually attacks the husband, the wife being tabetic.

Tabes in both husband, wife, and offspring.—This combination seems to be very exceptional. I have only been able to find one or two instances of it. Max Nonne[7] records a remarkable instance in which all three were infected extragenitally. The child was infected with syphilis by a boy bedfellow and he in turn infected his parents. All three became tabetic, the boy developing tabes five years after the time when he was infected. The same author[8] also refers very briefly to an instance in which both the syphilitic father and the mother became tabetic and the boy was feeble-minded and tabetic. It may, of course, with Gompertz[9] be objected in such cases that the affection in the boy was more in the nature of a genuine syphilitic lesion rather than tabes. Dr. Dawson F. D. Turner[10] recorded a group of cases in which both husband and wife had tabes and their child presented several symptoms belonging, not to tabes, but to Friedreich's ataxia. This child also had aortic disease.

There are instances in which general paralysis has taken the place of tabes in one or more of the individuals of the group under consideration. Thus in a remarkable instance related by Souques[11] the husband was syphilitic and a general paralytic and the wife and two daughters tabetic. In Kutner's[12] group the father was syphilitic and a general paralytic, the wife tabetic, and the daughter, 13 years of age, also tabetic for the past three years. Or, again, the cases of Moenkmoeller,[13] in which the father had tabes and the mother and daughter general paralysis.

To illustrate the importance of the relationship of syphilis to tabes (and general paralysis) the groups of cases recorded by Erb,[14] Finkelburg,[15] and Wertheimer[16] may be referred to in which tabes or general paralysis was present in two of the individuals and syphilis of the nervous system in the third. Finally, to complete the series, in the instance related by Arning[17] (quoted by Erb[18]) all three individuals—viz., husband, wife, and offspring—developed signs of cerebral syphilis.

Tabes in one parent and offspring.—These cases are fairly numerous. Remak,[19] Berbez,[20] Erb,[21] Goldflam,[22] Kahlischer,[23] Dydynski,[24] Brasch,[25] Babinski,[26] Max Nonne,[27] and others have recorded instances of it. A daughter seems to be more frequently affected than a son. Congenital syphilis is the all-important factor in these cases as far as the offspring is concerned, but acquired syphilis may be the cause, as in Max Nonne's[28] case, and also in Kron's[29] case where a child infected from a nurse developed tabes at the age of 13 years. The disease usually appears at the age of five years or upwards, the cases falling into the group of infantile or juvenile tabes. The daughter of my tabetic couple developed tabes in her thirty-seventh year—a late date for tabes to develop on a congenital syphilitic basis. It is also true that we found no marks of congenital syphilis upon her and there is only the evidence provided by her family in favour of congenital syphilis.

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[3] Pourreyon: Thèse de Paris, 1903.

[4] Hudovernig: Neurologisches Centralblatt, 1903.

[5] Raecke, quoted by Erb: Berliner Klinische Wochenschrift, 1904.

[6] Francine: American Journal of the Medical Sciences, 1900.

[7] Nonne: Fortschritt der Medicin, 1904.

[8] Nonne: Berliner Klinische Wochenschrift, 1904.

[9] Gompertz: Neurologisches Centralblatt, 1900.

[10] Turner: THE LANCET, Nov. 1st, 1890, p. 920.

[11] Souques: Bulletin de la Société Médicale des Hôpitaux, 1902.

[12] Kutner: Allgemeine Zeitschrift für Psychiatrie, 1900.

[13] Moenkmoeller, quoted by Mott: Archives of Neurology, vol. ii.

[14] Erb: Berliner Klinische Wochenschrift, 1904.

[15] Finkelburg: Deutsche Zeitschrift für Nervenheilkunde, Bande v. und vi.

[16] Wertheimer: Neurologisches Centralblatt, 1904 (abstract).

[17] Arning, quoted by Erb: Berliner Klinische Wochenschrift, 1904.

[18] Erb: Loc. cit.

[19] Remak: Berliner Klinische Wochenschrift, 1885.

[20] Berbez: Progrès Médical, 1887.

[21] Erb: Deutsche Medicinische Wochenschrift, 1891.

[22] Goldflam: Deutsche Zeitschrift für Nervenheilkunde, 1892.

[23] Kahlischer: Berliner Klinische Wochenschrift, 1898.

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[28] Ibid.

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The methods of estimating bacillus coli.—1. By the microscopic examination of colonies developing from surface cultivations on phenolated gelatine or agar plates. These cultivations are made either directly from the material to be examined or from preliminary phenol broth cultures. This method is extremely laborious and even in the most practised hands leaves much to be desired in the way of accuracy. 2. By the neutral-red broth method. 3. By MacConkey's method. 4. By Pakes's method. 5. By Houston's method.

Method of estimating the spores of bacillus enteritidis sporogenes.—The only practicable method is by the use of milk cultures heated to 80° C. for 15 minutes and incubated anaerobically at 37° C.

Whichever method of enumerating bacillus coli the routine worker may adopt he has to face the difficulties of ice packing and apparatus. For example, let us suppose that a sewage-disposal system consisting of an open septic tank and a couple of continuous filters is the subject of examination. In this case four samples should be taken, viz.: (1) the raw sewage; (2) the septic tank effluent; (3) the effluent of filter No. 1; and (4) the effluent of filter No. 2.

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[30] Barthelemy: Annales de Dermatologie et de Syphiligraphie, 1897.

[31] Nonne: Syphilis und Nervensystem, 1902.

[32] Sabrazes: Nouvelle Iconographie de la Salpêtrière, 1903.

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[41] Brosius: Archiv für Psychiatrie, Band xxxvii., 1903.

[42] Fehre: Berliner Klinsche Wochenschrift, 1901.

Let us also suppose that the investigator adopts MacConkey's method of estimating bacillus coli. This will necessitate the use of two of the larger-sized Bulloch's apparatus with incubator space to correspond. Further, as these cultures will be incubated at 42° C. the incubators used will not be available for any other purposes. Incubator space will also have to be found for some 16 or more Buchner's tubes for the estimation of the spores of the bacillus enteritidis sporogenes. The use of other methods of estimating the bacillus coli which do not require anaerobic culture at a special temperature would reduce the requirements somewhat. If, however, we add to the apparatus total that required for the estimation of the total number of organisms and of streptococcus it is hardly surprising that with so many requirements the examination of sewage as a regular routine practice by the controlling authority is considered impracticable. Some simple technique is urgently required which will obviate the use of costly and cumbersome apparatus and which can be rapidly carried out, thus bringing the routine examination of sewage within the scope of the ordinary worker. I do not think that any advantage has resulted from the multiplication of the number of "organisms of indication" requiring quantitative estimation. We have now three such organisms and it is not likely that the number will remain constant. Without enlarging on the subject I may say that in my opinion it will be sufficient for routine purposes if we disregard the streptococcus altogether and take as our criteria: (1) the total number of organisms per cubic centimetre; (2) the number of bacillus coli per cubic centimetre; and (3) the number of spores of bacillus enteritidis sporogenes per cubic centimetre.

In a previous communication[1] I described a simple technique for the enumeration of the total number of organisms in any fluid. In the present communication I propose to describe a technique for the quantitative estimation of bacillus coli and the spores of bacillus enteritidis sporogenes in sewage which I believe will meet the requirements of most workers with slender resources at their disposal and which in point of accuracy will bear comparison with the most complicated methods at the disposal of workers in the best equipped of laboratories. The method, besides materially reducing the quantity of apparatus required, entirely disposes of the ice-packing difficulty. As any modification of technique in the direction of simplicity is likely to appeal to a wide circle I have deemed it advisable to bring the technique in question to the notice of the general body of laboratory workers.

Technique for the quantitative estimation of bacillus coli.—As the technique I am about to describe for the enumeration of bacillus coli is identical with that previously described for the enumeration of organisms—the culture medium alone excepted—I shall merely state the steps of the operation, referring the reader to the previous paper for full details. The following is the apparatus required: three sterile diluting pipettes, three sterile watch glasses, eight nutrose-agar slopes (Drigalski-Conradi medium), and a vessel containing sterile water.

In the three watch glasses dilutions of 1 in 100, 1 in 10,000 and 1 in 1,000,000 respectively are made from the sewage to be examined with sterile water by means of the diluting pipettes. The eight agar tubes are then seeded as follows:—

ube							
1	receives	100 c.mm.	undiluted	sewage	=0·1 c.c.	undiluted	sewage.
2	,,	10 c.mm.	,,	,,	=0·01 c.c.	,,	,,
3	,,	100 c.mm.	1 in 100	dilution	=0·001 c.c.	,,	,,
4	,,	10 c.mm.	,,	,,	=0·0001 c.c.	,,	,,
5	,,	100 c.mm.	1 in 10,000	,,	=0·00001 c.c.	,,	,,
6	,,	10 c.mm.	,,	,,	=0·000001 c.c.	,,	,,
7	,,	100 c.mm.	1 in 1,000,000	,,	=0·0000001 c.c.	,,	,,
8	,,	10 c.mm.	,,	,,	=0·00000001 c.c.	,,	,,

The tubes are then incubated at 37° C. for 24 hours or longer and the last tube showing a reddish colony in conjunction with the next tube which shows no reddish colony will indicate the limits between which the number of bacillus coli present in the sample must lie. Subcultures can then be made and the organism identified by the customary tests. It is important that the agar slopes should be quite dry before use. In practice this end can be conveniently attained by leaving the plugs out of the tubes when the agar is being allowed to set. The plugs should not be replaced until the surface of the agar is dry and glossy. This process can be safely carried out without fear of contaminating the medium. Owing to the remarkable properties of the Drigalski-Conradi medium the isolation of the bacillus coli by this method is an extremely simple matter. The appearance of the coli colonies is so characteristic that they can be detected almost at a glance and the further tests applied practically invariably confirm the first opinion formed. As very few sewage organisms can grow on this medium there is no obscuring of the bacillus coli colonies by other growths and the last tube showing the red colony is usually the last tube showing any growth at all. On account of the excessive humidity of the atmosphere in the Himalayan region at this time of the year I have been unable to test the accuracy of this method in estimating the total number of bacillus coli per cubic centimetre in terms of 10, 100, 1000, &c., but at other times of the year and in countries and places where monsoon conditions do not prevail I have little doubt that such a proceeding would be quite feasible. It would only be necessary to leave the plugs out of the tubes until the liquid sown on their surfaces had evaporated (the tubes being placed in the sloping position) and then to incubate in the ordinary way. In this way the last tube showing coliform growth would display discrete colonies from which the actual number of bacillus coli present in the sample could be calculated. I would emphasise this point, however, that if the number of bacillus coli in the sample be less than nine per cubic centimetre then it is impossible to estimate the number in this way. If the number present be between nine and ten per cubic centimetre then we would expect Tube 2 to show one red colony, all other tubes being free from red colonies. The following calculation will make this clear. Total amount of undiluted sewage sown on Tubes 1 and 2 = 0·11 cubic centimetre. Tube 1 shows no coliform colonies. Tube 2 shows one coliform colony. Therefore there are no bacilli coli in 0·10 cubic centimetre of th test fluid but at least one bacillus coli in 0·11 cubic centi metre. This is equivalent to 9·9 bacillus coli per cubi centimetre (1000 ÷ 0·11).

With a view to ascertaining the accuracy of this method have tested it against MacConkey's method and have foun the results to be identical. A single example of the com parison instituted between the two methods will suffice fo illustration. A piece of fresh horse dung was shaken up i a sterile test tube with a little sterile water. The tube wa then lightly centrifugalised and the supernatant flui pipetted off. A quantitative estimation of the bacillu coli content of this fluid was then made simultaneously b MacConkey's method and by the method which I have jus described with the following result:—

Nutrose Agar Aerobically at 37° C. for 24 Hours.		*MacConkey's Medium Anaerobically at 42° C. for 24 Hours.*	
Tube 1 = 0·1 c.c.	(growth)	Tube 1 = 0·1 c.c.	(growth
,, 2 = 0·01 c.c.	,,	,, 2 = 0·01 c.c.	,,
,, 3 = 0·001 c.c.	,,	,, 3 = 0·001 c.c.	,,
,, 4 = 0·0001 c.c.	,,	,, 4 = 0·0001 c.c.	,,
,, 5 = 0·00001 c.c.	,,	,, 5 = 0·00001 c.c.	,,
,, 6 = 0·000001 c.c.	(sterile)	,, 6 = 0·000001 c.c.	(sterile)
,, 7 = 0·0000001 c.c.	,,	,, 7 = 0·0000001 c.c.	,,
,, 8 = 0·00000001 c.c.	,,	,, 8 = 0·00000001 c.c.	,,

The term growth in the case of the nutrose agar series means that the tube showed reddish colonies and in the case of the MacConkey series that the tube showed gas and acid production. By subculture bacillus coli was isolated from Tube 5 of both series. This method then can stand comparison with one of the most accurate methods at present in use.

Technique for the estimation of the spores of bacillus enteritidis sporogenes.—The great objection to the present method of enumerating the spores of bacillus enteritidis sporogenes in sewage is the quantity of apparatus required. Each sample requires four or five Buchner's tubes or their equivalent according to the method of anaerobic culture employed. This method of estimation, too, is obligatory as being the only practicable one available for routine purposes. My modification merely consists in the reduction of the quantity of apparatus required by the simple process of reducing the size of the test-tubes employed—a device which is rendered possible by the use of the special pipette previously described.[2] In this way the requisite proportion between culture medium and test fluid is maintained in tubes of miniature dimensions The following is the apparatus required two sterile diluting pipettes; two sterile watch glasses; six small test tubes, one tube of sterile milk, one Buchner's tube (large size); and a vessel containing sterile water

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[1] THE LANCET, June 17th, 1905, p. 1641.

[2] Ibid.

These small test tubes are made from glass tubing, being blown and lipped in the ordinary way. The most convenient size of glass tubing is one giving the following measurements external diameter 0 8 centimetre, internal diameter 0 5 centimetre. In blowing these tubes the bottoms should be made slightly bulbous for a reason which will afterwards be stated, but at the same time care must be taken that the bulb is not so large as to prevent the requisite number of tubes being got into the Buchner s tube The average dimensions of the finished article are as follows length 4 5 centimetres, extreme diameter of bulb one centimetre. These tubes are plugged with cotton wool, sterilised in the autoclave, and dried in an oven In practice it will be convenient to have a large stock of them on hand and after sterilisation they are best stored in a basket For convenience in manipulation a rack can easily be made by boring holes in the lid of a cardboard soap box with a cork borer of suitable diameter The interior of the box is then packed with cotton wool until the internal depth is sufficiently small to allow of the tubes projecting far enough out of the holes for convenient handling. The lid is then firmly bound to the box with string

The steps of the procedure are as follow. The sample to be tested is heated to 80° C for 15 minutes, the necessary manipulations for the enumeration of the total number of organisms and of bacillus coli having been previously carried out With the diluting pipette 0 5 cubic centimetre of sterile milk is introduced into each tube with the usual aseptic precautions From the heated sample dilutions of 1 in 100 and 1 in 10,000 are made in the watch glasses with sterile water The tubes are then seeded as follows —

Tube							
1	receives	100 c.mm	undiluted	sewage	=0 1 c c	undiluted	sewage
2	,,	10 c mm	,,	,,	=0·01 c c.	,,	,,
3	,,	100 c.mm	1 in 100	dilution	=0·001 c c	,,	,,
4	,,	10 c.mm	,,	,,	=0·0001 c c	,,	,,
5	,,	100 c.mm	1 in 10,000	,,	=0·00001 c c.	,,	,,
6	,,	10 c.mm	,,	,,	=0·000001 c c	,,	,,

The tubes are numbered from 1 to 6 consecutively with a pencil for writing on glass The first four tubes are then tied into a bundle with an elastic band and a slip of paper inserted, giving a distinctive number to the sample This little bunch of tubes is then slipped into the Buchner s tube (which has previously been prepared with the usual solutions) and allowed to slide down till arrested by the projecting glass stops It is for this reason that the bottoms of the tubes are given a bulbous shape, as otherwise the bunch of tubes is apt to slip past the glass stops and fall into the pyrogallic acid with disastrous results The remaining two tubes are then slipped into the Buchner s tube and allowed to slide down until arrested by the plugs of the bundle first inserted The Buchner s tube is then corked and is ready for incubation The operation of putting the milk tubes into the Buchner's tube only occupies a few seconds If, as is usually the case, more than one sample is being tested at one time the procedure is slightly different If the investigator is using six milk tubes for each sample—that is, 12 tubes in all, then one Buchner's tube is made to accommodate two samples in the following way The tubes of Sample 1 are numbered with a blue pencil and the tubes of Sample 2 with a red pencil Tubes 1 to 4 of each sample are then tied up into two bundles with elastic bands, the descriptive ticket which is inserted being written with a correspondingly coloured pencil Tubes 5 and 6 of the two samples are bound together with an elastic band without any descriptive ticket These three bundles are then slipped into the Buchner s tube one after the other and the tube corked If the investigator only uses four milk tubes per sample then one Buchner s tube will accommodate three samples, descriptive tickets being inserted into each bundle The utility of this modification is evidenced by the fact that 12 milk tubes can be examined at the expense of one Buchner s tube instead of 12 Buchner s tubes As in the case of bacillus coli if the sample contain less than nine spores per cubic centimetre then the total number cannot be enumerated by means of these small tubes, unless an extra tube containing one cubic centimetre of the test fluid is put up for each sample This, however is in reality unnecessary as any sewage effluent giving a negative result with 0·1 cubic centimetre would pass the provisional standard suggested by Dr A C Houston in the Report of the Royal Commission on Sewage Disposal.

Practical application of the technique —A few notes on the practical application of the technique described in this and the previous communication[3] will not be out of place. For example, let us assume that the investigator is dealing with an installation consisting of an open septic tank and a couple of aerobic filters, and that, further, the works are situated sufficiently far from the laboratory as to necessitate ice packing of the samples in ordinary circumstances. Modifications required for special cases will suggest themselves The following is the apparatus required at the sewage works Diluting pipettes and teats; sterile watch glasses, nutrient agar or gelatine slopes, nutrose agar slopes, two racks capable of holding eight tubes each; sterile water, *sterile bottles for collecting samples*, a *spirit* lamp; a bottle of methylated spirit, a centigrade thermometer, a pair of forceps; a pencil for writing on glass; and a bottle of lysol for cleansing the hands.

Packing of apparatus —The diluting pipettes should be packed by themselves in a box that can be conveniently carried in the hand As to the number required, the more one takes the quicker the work will be accomplished As a minimum I would suggest four, which allows of one sample being done at a time without resterilising and gives a margin of one for casualties The sample bottles should also be packed separately the most convenient form being a short, wide bottomed, glass stoppered bottle of about 30 cubic centimetres capacity At least four bottles will be required. The remainder of the apparatus is all packed in one box, but the packing of some articles requires special notice The watch glasses should be sterilised in a copper cylinder such as is used for Petri dishes This cylinder is then used to transport the watch glasses of which a large number should be taken With regard to the tubes of culture media, the most convenient way of transporting them is to pack them in empty tobacco tins the bottoms of which are padded with cotton wool An ordinary quarter-pound tobacco tin will hold nine tubes and so two tins will be necessary for each sample—one tin to hold tubes of ordinary nutrient agar or gelatine and the other to hold tubes of nutrose agar Provision should be made for four samples By means of a little cotton wool the tubes should be packed firmly in the tins to allow of as little play as possible Before packing, the plugs and mouths of the tubes should be thoroughly flamed and the plugs thrust well home with a pair of forceps. If this precaution is not adopted some plugs are sure to become loosened and fall out in transit The tubes should then be labelled and numbered from one to eight The ninth tube being a reserve for emergencies the label on it should be left blank The remaining articles require no special mention At the works the first step will be to choose a spot for carrying out the technique The mouths of all the tubes should then be flamed and the plugs withdrawn to a convenient distance with the forceps The watch glasses are then taken out and one superimposed above the other in pairs, the forceps after preliminary sterilising in the flame being used for this purpose The pipettes are then sterilised in the flame and placed conveniently to hand The watch glasses are then charged with the requisite amount of sterile water for making the dilutions and arranged in rows of three The samples are then collected and the manipulations necessary for the enumeration of the total number of organisms and bacillus coli carried out The two racks will hold the eight tubes of each series (ordinary nutrient medium and nutrose agar) during this part of the procedure The tubes of each series are seeded alternately with the same pipette. When all the samples have been put up for the total number of organisms and for bacillus coli the sample bottles are then placed in a saucepan containing sufficient water to immerse the bottles almost up to their mouths They are then heated to 80° C for 15 minutes On return to the laboratory the technique for the enumeration of the spores of bacillus enteritidis sporogenes, which do not alter in number during transit, is carried out In this way the ice packing difficulty is entirely overcome, whilst the apparatus required is not beyond the resources of a poorly equipped laboratory I have subjected this method to the most rigorous tests of climate and transport for some months and have never had a breakage or a contaminated tube in the series of controls carried for this purpose. I have, further, never met with a contingency that could not be provided for on the spur of the moment, and I have therefore every confidence in recommending this method to those who are interested in sewage examination questions.

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[3] Ibid

In conclusion, I should like to point out for the benefit of those workers who deal with more complicated problems in the question of sewage disposal, and to whom ice-packing and apparatus present no difficulty, that the use of the small tubes I have described for quantities of 0·1 cubic centimetre and less in the quantitative estimation of bacillus coli, streptococcus, &c., will so reduce the amount of apparatus and incubator space required that the number of samples capable of being dealt with at one time is greatly increased.

My best thanks are due to Captain G. Lamb, I.M.S., Director of the Pasteur Institute of India, and to Captain W. F. Harvey, I.M.S., Deputy Sanitary Commissioner, Punjab, for much valuable advice and assistance in the preparation of this paper.

Kasauli, India.

FIVE CASES OF TUBERCULOSIS TREATED WITH DR. MARMOREK'S SERUM.

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IN these days of many inventions hesitation must be felt in using a new therapeutic agent until there is evidence that there is a reasonable prospect of ensuing benefit and no risk of results directly or indirectly objectionable. The recent publication in various medical journals of evidence fulfilling these postulates in favour of the use of Dr. Marmorek's antituberculous serum has induced me to add thereto my own experience of this serum in the treatment of five cases of tuberculosis over a period of 16 months, during which time I have injected about 2000 cubic centimetres. This small experience has been so encouraging that I intend to make a more extensive trial and hope that others may be induced to use it too, so that sufficient scientific evidence may be collected to establish its actual value in the treatment of the different forms of tuberculosis.

The chief conclusions I have drawn from my own observations are as follows: 1. That the beneficial effects of the serum are most marked in the "surgical" forms of the disease. 2. That no objectionable features whatsoever follow the injections except those insignificant discomforts dependent on the introduction of the equine serum into the human body which are not due to the specific antitoxin. I refer to local urticarial rash, tenderness at the site of injection, and slight general malaise, all of which pass off in a few hours. Even these have been rare and in three of the patients entirely absent. 3. That pyrexia is diminished though the fall in temperature is sometimes preceded by an initial rise occurring within 12 hours, rarely exceeding 1° F. 4. That pain in the "surgical" forms of the disease is almost invariably alleviated. In the case of tuberculous peritonitis great relief was constantly experienced within 24 hours after the injection. In the case of hip-joint disease, too, this effect was well marked. 5. That the amount of sputum in pulmonary tuberculosis is rapidly diminished but that an initial increase takes place when the injections are commenced. 6. That in consequence of these results due to the arrested progress of the disease, the general health rapidly improves and the patient gains in weight.

As regards the dosage the method which Dr. Marmorek now recommends is the injection of five cubic centimetres every other day for three weeks to be followed by a clear three weeks' interval, after which the injections are repeated as before. I have not hitherto strictly adhered to this method and in one case have injected 60 cubic centimetres in 12 days, allowing a month's interval, with excellent results. The site of injection is preferably the abdominal wall or thighs and should be varied as much as possible. I have introduced the needle as deeply as possible without penetrating the deep fascia. Antiseptic precautions must of course be observed. An all-glass syringe is by far the most convenient and should be boiled every time before use. The usual serum needles are unnecessarily large. I have always cleansed the skin at the chosen site first with ether and afterwards with a few drops of saturated solution of chinosol, well rubbing with a pledget of cotton-wool, and have sealed the puncture with collodion and wool. If the patient complains of the discomfort of the insertion of the needle this may be overcome by the ethyl chloride spray. The temperature has been recorded every four hours and the sputum weighed or measured every day, and as often as convenient the patients have been weighed.

In recording the following cases I have endeavoured to state the facts concisely but faithfully without quoting unnecessarily full clinical observations from my case-book. I may here state that during treatment with the serum no other therapeutic measures have been pursued or drugs administered except those necessary for the regulation of the bowels.

CASE 1.—The patient, a man, aged 28 years, was first seen on Nov. 20th, 1903. There was a history of progressive enlargement of the abdomen accompanied by pain and fluid stools for one month. On examination the abdomen was found to be much distended, the umbilicus was prominent, and the respiratory movement was imperfect; it was everywhere tender, especially across the umbilical area. A moderat amount of free fluid was present in dependent portions; elsewhere it was tympanitic. The cardiac apex was displace upwards and outwards. The liver dulness was increase upwards. The spleen was not felt. At the left pulmonary apex the resonance was impaired down to the third rib i front; over this area the breath sounds were harsh, with prolonged expiratory murmur, numerous crepitations, and exaggerated vocal vibration and vocal resonance. There was no cough or expectoration. The tongue was furred The motions were loose and of yellow ochre colour. The blood and urine on examination were found to be normal The pulse was 84, the respirations were 20, and the temperature varied between 99·2° and 100·4° F. In December the ascites was diminishing. Slight resistance was felt across the umbilical area. The physical signs at the left pulmonary apex were more marked. There were profuse night sweats and a steady loss of flesh. The temperature ranged from 99° to 100·6°, the pulse was 86, and the respirations were 24.

In January, 1904, the ascites was slight. An increased sense of resistance was felt across the umbilical area. The abdominal pain was severe. There was a considerable degree of emaciation. The temperature was the same as previously noted, the pulse was 88, and the respirations were 25. Early in this month considerable pleuritic friction was heard below the angle of the scapula at the right pulmonary base which extended to the anterior axillary line and was accompanied by slight pain on respiration. From Feb. 9th to April 6th 210 cubic centimetres of Dr. Marmorek's serum were injected in 30 injections. The abdominal pain was greatly relieved during each series. The condition at the end of this time was as follows. The abdomen was flat; there was no ascites; definite resistance was felt across the umbilical area, terminating in a hard, tender mass on the right side. Crepitations at the left apex were less numerous. There were no abnormal physical signs at the right base and no night sweats. The motions were semi-solid. The general condition was better and the appetite was good. The highest evening temperature throughout the period of injections was 101° and the lowest was 99°. The highest morning temperature was 99° and the lowest was 96°. From April 18th to 26th ten cubic centimetres of serum were injected. In May there was much diarrhœa accompanied by pain. During June the temperature was falling, varying between 98° and 99°. The pulse was 92. The physical signs at the left apex were less marked. In July there was much pain in the left side of the abdomen, together with visible peristalsis. The temperature varied between 97° and 99° and the pulse was 100. On August 26th and 29th there were rigors and very acute pain in the left side of the abdomen. The abdomen was tympanitic.

Early in September there was very marked and painful peristalsis starting from the left iliac fossa. Alternating diarrhœa and constipation were present. The pain was relieved by the former. The temperature was rising, the pulse was 106, and the general condition was worse. The symptoms pointed to partial intestinal obstruction in the left iliac fossa. On Sept. 22nd the abdomen was opened in the middle line. Everywhere there was much matting together of intestines, the peritoneum was studded with tubercles, and there were adhesions between the parietal and visceral layers. Especially much matting and thickening were found where resistance had been felt and in the left iliac fossa. Here adhesions were gently broken down as far as possible but no definite constricting band was found. The abdomen was flushed out and eight ounces of sterilised water were left in before the wound was closed. Great improvement followed this operation with disappearance of the painful peristalsis. About the middle of October there was a recurrence of abdominal pain, with violent diarrhœa and increasing emaciation. From Oct. 22nd to Nov. 7th 60 cubic centimetres of serum were injected in six injections. There was no more diarrhœa after the first few injections. The pain was almost gone. The general condition was much improved. In December 20 cubic centimetres of serum were administered in two injections. The improvement was maintained.

From January to April 5th, 1905, 90 cubic centimetres of serum were given in 12 injections. The temperature was almost normal and the pulse was 80. The patient was rapidly gaining weight and there was no pain. At the end of June it was noted that the patient had gained three stone since August, 1904. He looked healthy and well, was much sunburnt, and could walk five miles without much fatigue. His temperature and pulse were normal. The bowels were regular. Nothing abnormal was felt in the abdomen. The pathological physical signs at the left apex had disappeared. The patient was desirous of resuming his occupation.

There was undoubtedly tuberculous infiltration at the left apex and probably the pleurisy at the right base, which was of long duration, was also of the same origin. The prognosis previously to treatment with this serum appeared absolutely hopeless to others in consultation as well as to myself. The laparotomy was imperative for the relief of obstruction and would not otherwise have been performed. Though the subsequent benefit was immediate and great it was only temporary and the patient rapidly lost ground again till the serum injections were recommenced. The patient is now apparently entirely free from any form of tuberculous disease. I think an error was made in discontinuing the injections through July and August, 1904. During these months I was abroad and left the treatment to the discretion of my locum-tenent.

CASE 2.—The patient was a man, aged 32 years. At the latter end of 1903 his left testis with the epididymis were removed for tuberculous disease. In May, 1904, he came under my care. On examination the lower part of the remaining epididymis was felt to be enlarged, hard, and nodular, the swelling being of the size of a large filbert. The testis was apparently slightly enlarged and somewhat tender. The patient informed me that the enlargement of the epididymis had taken place rapidly. From May 5th to June 5th 80 cubic centimetres of serum were injected in 16 injections. The testis became smaller and less tender. The affected portion of the epididymis was decidedly smaller. From June 10th to Sept. 30th 190 cubic centimetres of serum were given in 38 injections. At the end of this period the testis was apparently normal. The epididymis was also apparently normal with the exception of a nodule of the size of a pea at the lower end which felt softer and was adherent to the skin From Oct. 3rd to Nov. 7th 80 cubic centimetres of serum were given in 12 injections. On Oct. 15th the nodule was felt to be very soft and the overlying skin was becoming red. An incision was to have been made the next morning but the skin burst that night with a discharge of thin flaky pus. A slight discharge continued until Nov. 8th, when the patient had to return to London.

For the following notes I am indebted to Mr. H. S. Pendlebury. On Dec. 2nd the sinus was scraped. The scrapings were examined and found to be tuberculous. Serum injections were continued twice weekly, beginning 14 days after the operation and later at intervals of a fortnight up to the end of April, 1905. The thickening in the epididymis rapidly decreased. There was discharge from the sinus at intervals until June, when healing appeared to be complete. The patient's general health was excellent.

CASE 3.—The patient was a man, aged 48 years. In March, 1902, the right testis with the epididymis were removed for tuberculous disease. In December, 1902, there was tuberculous disease of the left epididymis which ended in suppuration with the formation of a profusely discharging sinus. In January, 1903, a tuberculous abscess developed over the left sixth costal cartilage. Later there was pain in the right hip and knee, which rapidly became acute, with limitation of movement at the hip-joint. The patient was confined to bed for three months and afterwards received open-air treatment.

In October, 1904, the patient came under my care. The epididymis was found to be much enlarged, hard, and nodular; a sinus at the inferior end discharged much thin flaky pus. A discharging sinus was observed over the sixth left costal cartilage; no connexion with the cartilage itself was felt with the probe. The right leg was kept at rest in a position of partial flexion and external rotation. Movement at the hip-joint was very painful and the range of movement was very limited. There was some wasting of surrounding muscles. The surface was hotter than the corresponding side and there was some tenderness on deep pressure. The pain in the hip-joint was constant and at times very acute; there was much referred pain in the knee-joint. The patient had been accustomed to hypodermic injections of morphine for the pain. He was losing weight, his general health was deteriorating, and local signs and symptoms were increasing in severity. From Oct. 12th to Dec. 12th 170 cubic centimetres of serum were given in 17 injections. The pain was steadily diminishing. The discharge from the sinuses was more watery and less in quantity.

From Jan. 5th to 22nd, 1905, 60 cubic centimetres of serum were administered in six injections. The pain was only very slight, the sinus in the chest had healed, the epididymis was smaller, and the discharge was clear and very slight. From Feb. 14th to March 2nd 60 cubic centimetres of serum were administered in six injections. The pain was entirely gone and the range of movement at the hip-joint was increasing. The general health was rapidly improving. From March 28th to April 12th 60 cubic centimetres of serum were given in six injections. The patient had gained 12 pounds in weight and had had no more pain. The sinus in the scrotum was almost healed. From May 19th to 31st 60 cubic centimetres of serum were injected in six injections. The patient was still gaining weight. The epididymis felt normal except for a very small nodule at its lower extremity. There was no discharge and the sinus appeared to be healed. Sexual desire, which had long been absent, was returning. The improvement in the condition of the hip-joint was maintained, there was no pain, and the range of movement was steadily increasing. The patient could walk with the aid of a stick for a short distance. He is still under treatment.

CASE 4.—The patient was a man, aged 50 years. In January, 1900, he had pleurisy with effusion at the right side, when paracentesis was performed. In 1901, three shot-like pellets were felt below the skin surrounding the site of introduction of the aspirating needle. In 1902, fusion of these pellets occurred and steady growth of resulting tumour which was diagnosed to be a lipoma. In July, 1903, the tumour extended from the spine of the scapula to just above the crest of the ilium. The diagnosis was unaltered. In September, 1903, the skin became reddened over the lower part of the tumour. The patient consulted a surgeon who advised immediate operation. On exploration the tumour was found to be a chronic thick-walled abscess, situated superficially, and on examination to be of tuberculous origin. The whole abscess sac was freely excised and healing took place by first intention with the exception of the lower end of the wound where a sinus formed, two inches in length.

In November the patient came under my care. Under gas the sinus was freely laid open and allowed to heal by granulation; this healing took place very slowly and irregularly and it was not until February, 1904, that it was complete. Towards the end several exposures to the x rays were made, which seemed to accelerate the progress. The patient went to the Riviera.

In May, 1904, a fresh focus of suppuration started at the upper end of the scar and on exploration the skin was found to be undermined for three inches in a direction at right angles to the original scar. This abscess sac was completely excised. Healing, however, was only partial and fresh sinuses formed in the line of incision and downwards beneath the old scar. The x rays were tried but did not seem to have any beneficial effect. In October the patient again came under my care. Under a local anæsthetic the sinus was slit up and packed with gauze. From Oct. 27th to Dec. 17th 140 cubic centimetres of serum were injected in 14 injections. During this time the wound after quickly assuming a healthy appearance healed rapidly by granulation, healing being complete by Dec. 4th. The patient gained six pounds in weight and professed himself feeling in better health than he had been for years. No inconvenience whatsoever was experienced from the injections, which were made in the neighbourhood of the sinus, and at no time was the patient confined to bed longer than was necessary for the daily dressing. In July, 1905, the scars looked very healthy and there was no appearance of recurrence.

CASE 5.—The patient was a woman, aged 28 years. This case is still under treatment. There is tuberculous infiltration of both pulmonary apices with some consolidation at the right apex. The serum treatment was started in February of this year when the patient, after undergoing sanatorium treatment for months, was steadily losing ground. Bacilli have been found in the sputum on every occasion. From February to the end of June 170 cubic centimetres of serum were given in 34 injections. The patient rapidly gained weight at first and the cough and expectoration diminished but since then her condition has remained unaltered. No definite opinion can be deduced at this stage. A six weeks' interval has been allowed to elapse before recommencing the injections.

In conclusion, I wish to thank Dr. Marmorek for his unfailing courtesy and kindness in supplying the serum and for the valuable advice he has given me from time to time.

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Ventnor.

A CASE OF PNEUMONIC PLAGUE.

BY H. B. OSBURN, M.R.C.S. ENG., L.R.C.P. LOND., D.P.H. CANTAB.

BY the Venice Convention very strict precautions are taken with regard to the crews of vessels leaving plague-infected ports. Besides being under observation for some days previously, on the day before departure every man is closely examined by one of the health officers. After this their effects are all disinfected and they are not allowed to land. Again, on the day of departure there is another very close inspection. At these inspections any man with the slightest unexplained rise of temperature or with any recent glandular enlargement, however slight, is rejected. Lastly, for the nine days after leaving port there is a daily inspection of all the native crew by the surgeon of the ship.

On the sixth day after leaving port, at morning inspection, one of the Lascars seemed feverish. The temperature was found to be 100·5° F. The patient, a young, healthy native, looked well and was doing his work; the tongue was clean and there were no enlarged glands or symptoms of any kind. Slight rises of temperature are very common among natives, and in accordance with the usual routine in such cases he was given an aperient and told to report himself next morning. At 7 A.M. next day he came to the surgery looking very ill, with a frequent short cough and with a temperature of 106°; the tongue was fairly clean and there were no glandular enlargements, no pain, and no other symptoms. He was at once isolated in a tent on the boat deck with a native attendant. Two hours later, the patient being in a semi-comatose condition and having a temperature of 106·8°, he was packed in ice, the temperature then falling to 104·5°. The pulse was 120 and the respirations were 28. Examination of the chest gave slight dulness over the right base behind and (?) increased vocal resonance; sibilant rhonchi and a few râles were heard here and there over both lungs but no tubular breathing. But accurate auscultation is impossible on a ship at sea owing to the noises of the engines and the wind. The cough was frequent, with a white viscid expectoration. There was slight improvement during the day and a further examination of the chest revealed only the same physical signs as those noted in the morning. There was now a constant expectoration of white viscid mucus which, of course, was received into a solution of perchloride of mercury. The patient's mind was quite clear.

On the following day the symptoms were entirely those of severe pneumonia, excepting that the physical signs continued to be of the irregular character noticed at the first examination. The temperature, which dropped to 102·5° in the morning, rose to 105·2° at 4 P.M. The patient's mind kept clear; there was still the same expectoration. Towards evening marked injection of the conjunctivæ was noticed.

The next day, being the fourth from the commencement of the disease but only the third from the onset of severe symptoms, the patient and his attendant were removed to an infectious hospital by the order of the local sanitary authority, where he died. The diagnosis of pneumonic plague was eventually confirmed bacteriologically.

No other cases occurred on the voyage, which lasted 13 days after the patient's removal from the ship. No dead rats were found either before or after the case.

There are here unusually exact data for calculating the period of incubation, which must have extended from at least a day before departure to the morning when the first symptoms were noted—that is, seven clear days. But for the daily inspection the case would not have been detected until the next day, as the man was at work and apparently well when first observed, only the fact that he felt hot to the touch causing him to be further examined; the onset of the severe symptoms was at least eight days after possible exposure. The question of rats of course may be raised but no dead rats were found either before or after, which is quite evidence enough that plague did not exist among them. When it does, the way a ship becomes littered with dead rats is quite unmistakeable.

With regard to the diagnosis, the only doubts were as to whether at first it was a possible case of sunstroke; and later, when the chest symptoms became clear, as to how it could be differentiated from an ordinary acute pneumonia. The exceedingly severe onset, the irregular character of the pneumonia of broncho-pneumonic type, the height of the temperature without correspondingly severe pulmonary involvement, and the marked injection of the conjunctivæ all pointed to the invasion of the lungs by something other than the ordinary pneumococcus.

The satisfactory feature of the case was the restriction of the disease to the one man attacked and this in a ship with nearly 600 people on board of whom more than one half were natives. The prompt isolation in a tent on the boat deck, in a free current of air and light, and where absolutely efficient sterilisation could be secured afterwards, is mainly responsible for this. Any attempt to isolate a case of this kind in a cabin would have probably led to dissemination of the disease.

As to treatment, it consisted mainly in the meeting of symptoms as they arose; a distinct amelioration was noticed after the administration of salicylates and the condition of the patient did not seem so hopeless. The necessary removal of the patient to the hospital probably accelerated the fatal ending.

BIDEFORD INFIRMARY.—The sum of £102 has been handed to the authorities of the infirmary at Bideford, Devon, as the result of a house-to-house collection recently made in the town.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF NÉLATON'S OPERATION FOR INTESTINAL OBSTRUCTION.

BY GEORGE P. NEWBOLT, F.R.C.S. ENG.,
SURGEON TO THE ROYAL SOUTHERN HOSPITAL, LIVERPOOL.

ALTHOUGH it is possible in the majority of cases of intestinal obstruction to judge pretty accurately of the nature of that obstruction, yet cases still remain in which after exhausting every available means the diagnosis remains uncertain. If the patient is in good condition and there is not much abdominal distension it is permissible to spend time in exploring, but where the patient is suffering from abdominal distension due to an obstruction of some days' standing anything more than a rapid operation without handling or exposure of the intestines is likely to prove fatal. In this class of case the old operation of drawing up, fixing, and opening the nearest distended coil of intestine as practised by Nélaton still remains to us.

On July 4th, 1904, I was called by Dr. R. D. Evans of Blaenau-Festiniog to see a man, aged 45 years, who was suffering from acute intestinal obstruction. The onset was insidious but was followed by vomiting and total obstruction, no flatus having been passed for 24 hours before I saw him. On examination the abdomen was found to be tightly distended, the pulse was rapid, there was fæcal vomiting, and the tongue was dry. External investigation revealed no cause for the obstruction but as the man had lost flesh I thought that there might be a malignant stricture in the sigmoid flexure.

On opening the abdomen as if for left inguinal colotomy the sigmoid flexure was found to be empty and I therefore fixed the distended small intestine to the abdominal wall, tied in a glass tube, and drained the intestine. A large amount of fæcal matter drained away and as the result the man recovered with an artificial anus in the left iliac region. On Oct. 10th he was sent to Liverpool in order to have the artificial anus closed. The skin around was then eczematous and the discharge at times was watery; portions of undigested food passed at intervals and presumably the opening was high up in the small intestine. The bowels had acted naturally 12 times since the operation. On Oct. 13th an enema of sulphate of magnesium was given through the lower opening of the artificial anus and this was followed by a large stool per rectum. Being convinced that there was a free passage I had the patient anæsthetised and after failing to feel anything abnormal in the abdomen by means of a finger in the artificial anus I clamped the spur. Though this was done on several occasions and an india-rubber tube was placed in the lumen of the gut yet there was no tendency for the motion to pass the right way. The bowels acted normally after an enema but the greater part of the motion passed by the artificial anus.

On May 9th, 1905, I opened the abdomen to the right of the enterotomy wound, having first packed off the latter with gauze. The intestine running up to the artificial anus forming a tube some two inches long was clamped in two places and divided. The end near the artificial anus was everted through the latter and cut away; the other end was sutured, thus closing the opening into the small bowel. The abdomen was closed but great difficulty was experienced in covering over the wound left in the site of the artificial anus. Here the skin was congested and as tight as a drum and it was only by undercutting and sliding the skin that the gap could be filled. The state of the patient caused some anxiety for the first four days as his temperature rose to 102° F. and his pulse-rate to 144, but this had happened before when the spur was clamped. His bowels were moved by an enema five days after the operation and from this time his recovery was uninterrupted. He was able to return home on July 19th and at present is in good health, his bowels acting regularly without an aperient.

The cause of the obstruction was probably inflammatory as when the abdomen was opened in the final operation I found the small intestines adherent to one another in several places but there was no trace of any other change. The clamping of the spur in this case utterly failed to close the artificial anus. Although on the present occasion the operation was a success this is not always, or even often, so. Two cases, both of which terminated fatally, are reported in Vol. XXI. of the Transactions of the Clinical Society, but here there was a volvulus of the cæcum in each instance. I remember a case operated on successfully by the late Mr. Morrant Baker at St. Bartholomew's Hospital in the early "eighties." Sir Frederick Treves says: "It is an operation done in the dark and it leaves the cause of the disorder untouched." But surroundings have to be taken into consideration, and given a case in a small house in the country if the patient can be tided over an acute attack by a palliative measure it is possible that a more scientific operation may be performed successfully at a later stage under more favourable conditions. As a remedy in a desperate case I think it will still remain as a possible way out of difficulties.

Liverpool.

A CASE OF MERCURIAL POISONING.

BY ALFRED WIGHTWICK, M.B., CH.B. VICT.

THE following case is, I think, of some interest. The patient, who had apparently been invaded by pediculi pubis, the infection extending to the axillæ, had freely applied ointment of mercury, using the contents of four boxes, each holding about three drachms two scruples, in the course of three or four days. The night-gown had become discoloured with it and it seemed likely that during the night the face had been rubbed with the hands on which there was probably some ointment. The patient then complained of "nettle rash," which became worse towards evening. The irritation was intense, coming on in paroxysmal attacks, especially at night, the affected parts showing marked signs of scratching. The skin over the lower part of the abdomen was of a bright red colour extending down over Scarpa's triangle. The inguinal glands were enlarged and tender. The axillæ were red, swollen, and tender, palpation causing much pain. The glands felt enlarged. The flexor surfaces of both elbow joints were red, swollen, and painful, the patient saying they were so stiff and swollen that it was impossible to bend them to the full extent. The skin was coarse and desquamating. At times patches of redness, described as "flushings" or "blotches," appeared over the upper part of the chest. There was some swelling under the eyes and the face was described as "all swollen up and blotchy, the upper eyelids so swollen and stiff that the eyes could hardly be opened, the eyelashes standing straight out and the lower lids baggy." Anyone looked at across the room appeared in a mist, the eyes feeling very sore. The edges of the ears were inflamed and tender and later desquamated. The salivary glands were swollen, extremely tender, with increased secretion. The slightest pressure on the teeth caused pain and they generally ached. The gums were swollen and tender, especially so on the inner surfaces. This extended to the palate. The tongue felt "too large for the mouth" and was painful across the dorsum. There was an objectionable taste and odour of the breath was noticed. Though much nausea was present actual vomiting occurred but once or twice, the sensation being that of a bad bilious attack with inability to be sick. The bowels were normal. Headache was severe, feeling as if the two halves of the head, right and left, were being knocked together. The muscles generally, but especially those of the back and thighs, felt as if they were being pinched up, and trembling was noticed in the hands. This continued for a day or two. When getting out of bed one evening the legs felt very weak, the room appeared to go round, and the patient nearly fainted. A week after the appearance of symptoms the patient felt dull with great inclination to sleep, there were "pins and needles" in the extremities, and the bowels were somewhat constipated. This was followed by diarrhœa and the local patches of cutaneous irritation considerably subsided, though in the lower extremities the irritation had extended to the popliteal spaces. This improved in a day or two, the inflammation of the salivary glands with the general tenderness of the mouth being the last symptoms to disappear. I saw the patient some little time after and learnt that there had been a slight return of the cutaneous irritation but that it had only lasted a short time.

Reviews and Notices of Books.

Human Physiology: prepared with Special Reference to Students of Medicine. By Joseph Howard Raymond, A.M., M.D., Professor of Physiology and Hygiene in the Long Island College Hospital, New York City. Third edition. London, Philadelphia, and New York: W. B. Saunders and Co. 1905. 8vo. Pp. 687. Price 15*s*.

Without undergoing perceptible enlargement, which is no faint praise in these days of large students' manuals, this the third edition of Professor Raymond's sensibly written treatise has been very thoroughly revised and most of the recent advances in the subject of which it treats have been incorporated in the text. Amongst the more important of these are the researches of Professor Chittenden on Physiological Economy in Nutrition; of Captain Munson on Army Rations; and Mary Abel on Legumes and Sugar as Articles of Diet, all of which represent work done in America and published in American bulletins, reports, and journals, and therefore not likely to have met the eye of the English reader. The author has evidently paid much attention to the subject of food, and the section devoted to it is really very good, being both clear and accurate as well as concise. There is also an account of recent work upon alcoholic beverages in common use. It appears that from various analyses made by the Board of Health of the State of New York the composition of different samples of whisky and brandy varies within rather wide limits, quite independently, we presume, of retail adulteration. Thus the alcoholic strength of brandy varies from 30·80 to 50·40 per cent. by volume and from 25·39 to 42·96 per cent. by weight. Whisky contains from 44 to 50 per cent. by weight, or from 50 to 58 per cent. by volume of alcohol. Sherry again contains from 16 to 25 per cent. of alcohol. It seems reasonable to draw the conclusion that the different effects produced in those who consume similar quantities of spirit may be in part attributed to the unequal strength of the particular liquor which they habitually drink. Physiologists are by no means agreed as to the action of alcohol in digestion, some believing that it retards, others that it promotes that process. Professor Raymond, in commenting on alcohol as food, remarks that by virtue of the carbohydrates and salts which wines and beers contain they certainly have a food value entirely irrespective of the alcohol which is also one of their constituents. The compound ethers are regarded as assisting digestion by promoting the secretion of the digestive fluids, while the bitter principles are well-recognised stomachic tonics. Used in moderation they are therefore not injurious but used to excess there is danger of their producing superfluous fat, imperfect oxidation, and a resulting plethoric and perhaps gouty diathesis. To the further question, whether alcohol is itself a food, Professor Raymond gives a definite reply, grounding his opinion upon the elaborate experiments of Professor Atwater, that it is undoubtedly a food, but that it is not a necessary food, and that young people at least will act most wisely in abstaining from alcoholic beverages. But he considers it an error to believe that alcohol taken in moderate quantities and in dilute solution acts as a poison, as advanced by total abstainers.

Professor Raymond has introduced new sections into his book describing the movements of the human stomach and intestines as given by Dr. Cannon, as well as others upon hæmolysis and bacteriolysis and on the effect of cold on bacteria. In the sections on hæmolysis and bacteriolysis the globulicial property of the serum is explained as being due to alexins proceeding from leucocytes, whilst the property of agglutinating the bacilli of typhoid fever and the red blood corpuscles is stated to be due to certain agents in the serum named agglutinins and hæmagglutinins. Neither these nor the agents named—cytotoxins, leukotoxins, spermatoxins, and precipitins—have been isolated. Precipitins, obtained by injecting the dissolved albuminous bodies of one species of animal into another, have been employed for the identification of blood-stains, though much technical knowledge is required to procure satisfactory results.

The conditions present in ovarian and abdominal pregnancy are described by Professor Raymond who seems to be in accord with Webster that cases of ectopic pregnancy are rare, and that no gestation can begin its development except in some part of the genital tract derived from the Müllerian ducts such as the uterus and Fallopian tubes. This view as the author observes, rules out both abdominal and ovarian pregnancy. The treatise as a whole represents very well the present state of physiological knowledge as required by medical students and practitioners.

The Practical Study of Malaria and other Blood Parasites. By J. W. W. Stephens, M.D. Cantab., D.P.H., Walter Myers Lecturer in Tropical Medicine, University of Liverpool; and S. R. Christophers, M.B. Vict., Lieutenant I.M.S. Second edition; illustrated. London: Williams and Norgate. Published for the University Press of Liverpool. 1904. Pp. xliv. + 396.

Within 12 months of the first issue of this work a second edition has been demanded. This is partly due to the rapid sale of the first edition and partly to the fact that the advances in tropical medicine during 1903-04 were so rapid and so important that in any work pretending to keep pace with recent knowledge a new edition was imperative. The arrangement of the text follows the plan adopted in the first edition and the excellence of the paper, printing, and illustrations, to all of which we have already borne testimony, is maintained.

Chapter I. is devoted to the preparation of blood films; in Chapter II., normal blood is analysed and the various forms of leucocytes are described. Chapters III. to VI. deal with the malaria parasite in its various aspects and the changes which its presence sets up in the blood, the organs, and the tissues of the body. The important subject of mosquitoes, their anatomy, their life-history, and classification occupies a large part of the volume, no less than 16 chapters (VII. to XXII. inclusive) being devoted to it. Chapters upon blackwater fever, the hæmamœbidæ, the hæmogregarines, the trypanosomata, the Leishman bodies, the spirochætes and spirillar fever serve to indicate the rapid advance in our knowledge of tropical ailments, for when the first edition of this work was issued in 1903 the parasites associated with these diseases, and even the diseases themselves, were unknown. The list of anophelines grows in length at a bewildering rate and the species of mosquito continue to increase as the field of observation extends. Four new coloured plates representing the piroplasma bovis, the trypanosomes of man, birds, frogs, and rats, and the Leishman-Donovan bodies contribute to the completeness and excellence of as well-written and clear an exposition of the subjects dealt with as we could wish to read.

Text-book of Legal Medicine. By Frank Winthrop Draper, A.M., M.D. Harv., Professor of Legal Medicine in Harvard University; Medical Examiner for the County of Suffolk, Massachusetts; Medico-Legal Pathologist at the Boston City Hospital. Fully illustrated. London, Philadelphia, and New York: W. B. Saunders and Co. 1905. Pp. 573.

This volume is intended primarily as a help to students in acquiring the elements of legal medicine but it is also adapted to the needs of practitioners who wish to have at their service the latest advances in medical jurisprudence. Dr. Draper, as a "medical examiner" for the city of Boston for 28 years, has had a large experience in the investigation of the death of individuals in suspicious circumstances. This adds a personal element to his writings which renders the text-book all the more interesting. In addition he cites numerous illustrative cases selected from the standard treatises of forensic medicine. We consider that the description of cases that have actually been brought before the various courts of law is a valuable addition to a work of this nature. It renders a study of the subject more attractive and it also helps in impressing upon the memory of the student the numerous complicated facts which it is necessary to recollect when conducting a medico-legal examination.

The subjects of toxicology and of the medico-legal relations of psychiatry have been omitted from this work. Dr. Draper considers that they have acquired such an importance that they require independent treatment by observers who have made them a special study. He makes some interesting remarks, however, in Chapter XXX., on "Murder by Poisoning," wherein he sets forth in a concise manner the duties of a practitioner when brought into contact with a case of suspected poisoning. Such a position is replete with difficulties; the proper course to pursue is one that may well give rise to great anxiety, and it is useful for the practitioner to have a line of conduct arranged for him.

The whole work is well written and contains a vast amount of information. This will be found easier for American than for English students to apply, since in citations of the law Dr. Draper has confined himself to Massachusetts statutes. His reasons for thus acting may be described as patriotic, for he states in the preface that he believes that "these citations represent the most progressive and most intelligent expression of modern jurisprudence." Perhaps; anyhow the English student of the book will find in it much that is valuable as well as interesting.

From Tokio through Manchuria with the Japanese. By LOUIS LIVINGSTON SEAMAN, M.D., LL.B. London: Sidney Appleton. 1905. Pp. 268. Price 6*s.*

Dr. Seaman's book is full of interest for medical readers, especially those belonging to the naval and military services. He was well qualified for the work of authorship by the varied experience of military surgery and foreign travel which he had acquired as a surgeon with the United States Volunteers in the Spanish-American war which commenced in April, 1898, in the subsequent war in the Philippine Islands, and with the allied armies in the Boxer campaign in China during 1899 and 1900. Dr. Seaman's object in proceeding to the East was to see medical and surgical work in Japan and in the military base and field hospitals as near the front as practicable, but when he arrived in Tokio on June 20th, 1904, accompanied by his friend, Dr. Alexander Trautman of New York, he found that it was impossible to approach the seat of war. Permission was only given to inspect the reserve hospitals in Japan and the hospital for Russian prisoners at Matsuyama. He first visited the military hospital at Hiroshima, then the prisoners' hospital at Matsuyama, then the shipbuilding yards, gun foundries, and machine shops forming the naval base at Kure, and finally the other naval base at Sasebo, where the chief naval hospital is situated. Of the hospital at Hiroshima he says: "Up to the time of our first visit in July there had been more than 600 operative cases and only six deaths. In one of the wards we found 15 surgical cases, six of which had experienced hæmorrhages from the lungs and several in the abdominal cavity as the result of bullet perforations. All were recovering and 10 were able to stand and remain in that position while we were in the ward. Nine patients had been shot through the brain, the orifice of entrance and exit being plainly visible. All were recovering. Another case was that of a man shot directly over the region of the heart. There was no point of exit for the bullet and he probably carries it around with him to-day. Another man was injured by a ball which entered beneath the middle of the right clavicle and went through the lungs."

Dr. Seaman's experiences and impressions seem to have been singularly like those of the author of five articles which have already appeared in our columns under the heading of "Medical Notes from the Far East."[1] In fact, these gentlemen may have met one another, for they were both in Niuchwang at the time of its hasty evacuation by the Russians in the end of July, Dr. Seaman having left Japan for a visit to Manchuria, *viâ* Chifu, and the other being on his way to Japan, *viâ* Shanghai. From Niuchwang Dr. Seaman proceeded to Hsin-Min-Tung, a Chinese town, about 20 miles from Mukden. Here his introductions procured for him the friendship, or at least the hospitality, of the chief of the organised bandits, designated in English spellings as the Hung-hutzes or Chun-chuzes, with several variant forms. After a series of adventures among these people he returned south in order to make his homeward journey to America, *viâ* Shanghai, as he had to read a paper at the International Congress of Military Surgeons to be held at St. Louis. Chapters XIII. and XIV. of the book are devoted respectively to descriptions of the Japanese Red Cross Society and of the methods adopted for the prevention of disease in the Japanese army. Dr. Seaman's narrative is written in a graphic style and contains a number of views, portraits, and other illustrations.

Diet in Health and Disease. By JULIUS FRIEDENWALD, M.D., Clinical Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore, and JOHN RUHRÄH, M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. London, Philadelphia, and New York: W. B. Saunders and Co. 1905. Pp. 689. Price 18*s.* net,

THE scientific study of dietetics and the adjustment of diet to the metabolic needs of the organism as a result constitute a great advance on the older empiric methods of constructing diet scales. The preparation of balance-sheets of intake and output both of carbon and nitrogen, and the study of heat values, have combined to place dietetics on a clear scientific basis. In the volume before us a great deal of useful information has been gathered together by the authors, the work being chiefly a compilation of the views of a great number of authorities, frequently given in their own words.

For the arrangement adopted in this work we have nothing but praise. After a general discussion of the problems involved in the chemistry and physiology of digestion the various classes of foods are considered in detail, with special reference to their origin, preparation, composition, and heat values. Beverages and stimulants are next considered and similar information is given with regard to them. Various factors are then discussed in relation to diet, such as concentration, preservation, adulteration, and the occurrence of food poisoning. The feeding of infants, diet in special physiological conditions, and special methods of feeding—such as by enemata and feeding by the nasal tube and stomach tube—are then described in some detail. More than half the book is taken up by an account of diet in disease, each disease being considered separately, and diets appropriate to the condition being suggested. At the end army and navy rations and prison, hospital, and other institution dietaries are given, with various recipes for preparation of food substances for use in the sick-room, together with tables of foods permitted and lists of food prohibited in certain diseases. Except in the sections devoted to diet in disease of the stomach and intestines and to the feeding of infants, where the authors give their own experiences, the diets given are mostly quoted from other authors, and liberal extracts have been made, especially from the works of Atwater, R. Hutchison, Wegele and von Noorden. A considerable degree of repetition occurs, but this is almost unavoidable and is, perhaps, not a disadvantage in a work of this kind which is intended primarily as a work of reference. The authors state in their preface that they have "tried to tell the doctor how to feed his patient," and it will be convenient for the medical man to find what he wants to know quickly. The accounts given of procedures such as rectal feeding and feeding with the stomach tube are detailed and eminently practical. The sections devoted to the feeding of infants and to diet in diseases of children are very comprehensive and contain details of the complicated methods of modification of milk used in the United States. Of these no less than eight separate ones are given, nearly all of them requiring some considerable amount of calculation, so that the information may not be of great use to the busy practitioner, which is stated in the preface to be one of the aims of the work. So-called "laboratory feeding" is, without doubt, a very valuable method of adjusting the diet to the needs of an infant when breast feeding is impracticable, especially in towns, but it is certainly not available in ordinary practice among the poorer sections of the community or in hospital practice, and the simpler and yet effective methods adopted under such conditions might with advantage have been included in the book.

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[1] THE LANCET, Sept. 24th (p. 920), Oct. 1st (p. 982), and Oct. 8th (p. 1047), 1904; and Jan. 28th (p. 256) and Feb. 11th (p. 391), 1905.

Though there is much to commend in this work yet it is open to criticism in some respects. The account given of the chemistry and physiology of the digestive processes is meagre and by no means up to date. There is practically no reference to the valuable researches of Pawlow and none to important recent work on secretin and enterokinase. The classification of nitrogenous substances is far from satisfactory; fats are referred to as hydrocarbons and in the chemistry of milk the coagulation of caseinogen by ferments is confused with its precipitation by acids. There are not a few misprints and inaccuracies and it is a disadvantage that where several diets are suggested for a given condition little reference is made to their relative values in the authors' opinion.

The Edinburgh Stereoscopic Atlas of Anatomy. Edited by DAVID WATERSTON, M.A., M.D. Edin., F.R.C.S. Edin., F.R.S.E., Lecturer and Senior Demonstrator in the Department of Anatomy, Edinburgh University. Section II.: Abdomen. 50 stereographs. Edinburgh and London: T. C. and E. C. Jack. Price of section £1 5*s*. net. (Price of entire series of 250 stereographs £6 5*s*. net.)

WE find that the second section of this stereoscopic atlas is of equal excellence with the first. There are 50 plates in this instalment of the work and they are divided into the following sections: (1) Abdominal wall; (2) Inguinal region; (3) Abdominal cavity; (4) Viscera; (5) Abdominal aorta; (6) Pelvis; and (7) Bladder.

The plates illustrating the abdominal wall convey a good idea of the arrangement of the muscular and fascial planes, the position of the lineæ semilunares, and the extent of the rectus muscle, though the use of two sets of numerals in the first illustration is confusing. The series which illustrates the inguinal region comprises plates which should be of great value in explaining the anatomy of inguinal hernia. We found it difficult to recognise the pillars of the external abdominal ring in the superficial dissection as illustrated, and the relations of the external saphenous vein to the fascia of the thigh are not so clearly brought out as they might be, but on the whole the plates are excellent. The seven illustrations of the abdominal cavity are especially useful from a medical or surgical point of view. The various hollows or recesses and the positions occupied by the different parts of the intestine are shown. The peritoneal reflections stand out well and one of the plates shows the deformities and malpositions due to tight lacing in a striking manner. The anatomy of the viscera is very satisfactorily demonstrated by means of 21 illustrations, many of which contain more than one view. In addition to the viscera there are views of the stomach bed and of the liver bed when the contained viscus has been removed. Eight plates are devoted to the pelvic cavity, and these illustrations are also very good, although the perspective tends to be exaggerated. In fact, in the whole of this series the various hollows and recesses appear deeper than is natural, whilst the projection of the spinal column into the abdominal cavity is too great.

We are inclined to think that the atlas will not be extensively used by students in their earlier years of medical study. It is necessarily an expensive work, and students of anatomy will always be encouraged by their teachers to learn their work upon the actual body and not to rely on plates, however excellent they may be. In the case, however, of the advanced student and qualified man the matter is different. To students of this class we can conceive that a work like the present may be a great boon and it is to the attention of them that we commend it particularly, in congratulating Dr. Waterston on the progress of his undertaking.

LIBRARY TABLE.

A Primer of Physiology. By E. H. STARLING, F.R.S. London: John Murray. 1904. Pp. 128. Price 1*s*.—This instructive little manual is intended to convey to those who are desirous, as the author remarks, of learning something of the manner in which the normal processes of life are carried on and the broad features of the great functions by which life is maintained. Before, however, even these can be understood the general reader must possess a knowledge of the fundamental facts in physics and chemistry. He must have learnt that each of these sciences has been built up by countless experiments which have collectively shown that nature is invariable, that when the conditions are the same the results are the same, and that if the conclusions drawn by different observers dealing with the same phenomena differ, such difference is due to some condition that has been overlooked in the experiment. The processes that are carried on in the living body are in the highest degree complex and at first sight inscrutable, but careful observation and full reliance on the inviolability of the rules, or, as they are termed, the laws of nature, have enabled physiologists to recognise the physical and chemical processes which accompany many of the manifestations of life. Professor Starling's work may be advantageously read by every medical student before attending a course of lectures on physiology, as it will supply him with a general idea of the subject he is about to study and will enable him to follow intelligently the more extended account of each function that his professor will give in his successive lectures.

The Physiological Aspect of Dietary. By A. S. WAUCHOPE-WATSON. London: Adams Bros. 1905. Pp. 95. Price 2*s*. 6*d*.—The author sets before himself the excellent aim of instructing the public (which, he rightly says, "is led by the great motive power of advertisement rather than by that of actual fact") in the science of proper feeding in sickness and in health. A really satisfactory knowledge of dietetics cannot, of course, be gained without an intimate acquaintance also with the functions of the body and of general chemistry, but definite facts, the outcome of such acquaintance, can be given in elementary treatises to considerable public advantage. The author, on the whole, makes very sound observations in regard to the nutritive value of the various foodstuffs, his remarks on wines and spirits being decidedly to the point. There is an excellent chapter on beef tea. Occasionally the author is apt to overlook the importance of the digestibility of a food as a factor. A section on the feeding of infants contains some discreet remarks, but the composition of a food is one thing and the question of its digestibility another. In discussing gout and uric acid all mention is omitted of the most important factor in food in this connexion—namely, the purins. Again, we think that the remarks about cocoas are too meagre; the supply of cocoa was never more satisfactory than it is at the present time and its adulteration with starch, which he lays some stress upon, is exceptional. It is, further, doubtful whether cocoa is improved, dietetically speaking, by "enriching" it with proteid. On the whole, however, the author's observations are in accord with modern knowledge.

The Courtships of Catherine the Great. By PHILIP W. SERGEANT, B.A., late Scholar of Trinity College, Oxford. With six illustrations. London: T. Werner Laurie. 1905. Pp. 337. Price 10*s.* 6*d.*—Mr. Sergeant may be congratulated upon having produced a work that shows unusual care. His book, however, is disappointing in some respects and particularly in that it fails to enhance the attractiveness of a subject which is of itself intensely interesting. To deal with such a character as that of the great Catherine and only just to interest your reader is to fail in some measure. We do not ask for an enhanced interest at the expense of strict and historic truth, but we regret the occasional dulness of the work. Its great merit, however, is the scholarly accuracy of its pages and for any reader who wishes to know the truth of Catherine's private and political life we can imagine no safer guide. We need not emphasise the interest which that private life has for any student of human nature or of the evolution of European politics in the eighteenth century.

Reports and Analytical Records

FROM

THE LANCET LABORATORY.

JOTHION.

(THE BAYER COMPANY, LIMITED, 19, ST. DUNSTAN'S HILL, LONDON, E.C.)

JOTHION appears as a clear, slightly yellow oil, containing as much as 80 per cent. of iodine. We have not before examined a liquid containing such a high proportion of the element available for administration as such. On treatment with nitric acid an abundance of iodine is liberated. The excipient is readily saponifiable and is in reality an ester. On rubbing a few drops of the oil on the palm of the hand no stain is produced and in a short time the taste of iodine is evident in the mouth. The oil is perfectly miscible with other oils, as, for example, olive oil, and with alcohol, and may be readily incorporated with lanoline for the preparation of an ointment. Jothion is not miscible with water. It is obviously an excellent preparation for the administration of iodine by painting on the skin or by inunction, whether for local application or for general administration as a substitute in the latter case for the mineral iodides. The iodine is very rapidly absorbed.

YEAST PREPARATIONS.

(LA ZYMA, LTD, CLARENS, MONTREUX, SWITZERLAND. AGENTS. T. CHRISTY AND CO, 4, 10, AND 12, OLD SWAN LANE, LONDON, E.C.)

According to our examination these preparations consist of carefully prepared yeast (torulæ cerevisiæ). We found them all to be exceedingly active. The preparations examined included "furonculine dried yeast," "antidiabetic yeast," a dried yeast for veterinary use, and a yeast known as "staupe-antigourmine," which is stated to be a specific cure of dog's distemper. We examined the antidiabetic yeast and found it to be an active preparation and free from sugar. It is obvious from the results obtained that these yeasts are prepared with considerable care and therefore may be trusted for therapeutic purposes.

DRUEDA BREAD.

(F. SUTTON, 11 AND 13, HIGH STREET, SALISBURY.)

The features of this bread, according to the results of our analysis, are a rich proportion of proteid and of mineral salts, including the phosphates. An analysis of the moist bread gave the following results: proteid, 12·78 per cent.; mineral matter, 1·70 per cent; and moisture, 42 00 per cent. The bread yielded nearly 10 per cent. of its substance to cold water and amongst the soluble constituents was proteid. The bread is of excellent texture and of good flavour. It shows a nourishing value decidedly in excess of that of ordinary white bread.

CHAMPAGNE.

(JOSEPH PERRIER, FILS, ET CIE, CHALONS SUR MARNE; LONDON, OLD TRINITY HOUSE, WATER LANE, E.C.)

The samples examined were both derived from the 1900 vintage. Cuvée Royal 1900 gave the following results on analysis: alcohol, by weight 10·69 per cent., by volume 13·24 per cent., equal to proof spirit 23·21 per cent.; extractives, 3·24 per cent.; mineral matter, 0·09 per cent.; volatile acidity reckoned as acetic acid, 0·08 per cent.; fixed acidity reckoned as tartaric acid, 0·64 per cent.; sugar, 1·43 per cent.; and ethers reckoned as ethyl acetate, 0·06 per cent. This is a wine showing decided quality. It is distinctly dry, the sugar not exceeding 1·43 per cent., while it is free from undue acidity. The wine was in sound condition and contained practically no volatile acidity. It has very pleasing qualities. The wine marked First Quality 1900 gave the following results on analysis: alcohol, by weight 12·54 per cent., by volume 15·49 per cent., equal to proof spirit 27·15 per cent.; extractives, 3·20 per cent.; mineral matter, 0·10 per cent.; volatile acidity reckoned as acetic acid, 0·08 per cent.; fixed acidity reckoned as tartaric acid, 0·55 per cent.; sugar, 1·61 per cent.; ethers reckoned as ethyl acetate, 0·036 per cent. This also was a good sound wine but somewhat inferior in quality to the previous sample. It is a little sweeter and contains rather more alcohol. The ethers again are distinctly lower in amount. The quantity of sugar is small, justifying the description of the wine as dry.

PREPARED PEA FLOUR.

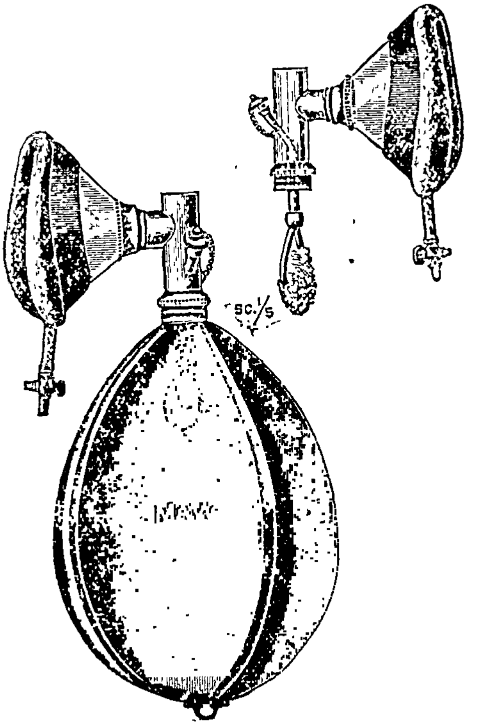
(W. SYMINGTON AND CO, LIMITED, BOWDEN STEAM MILLS, MARKET HARBOROUGH)

As is well known, the nutritive value of the pea or lentil is considerable owing chiefly to the rich proportion of proteid. Unfortunately the proteid contains sulphur which would appear to give rise to the production of sulphuretted hydrogen gas, which has a tendency to produce flatulence. By careful preparation, however, this indigestible quality may be very much modified. Messrs. Symington and Co. have prepared an excellent pea flour in which some of the sulphur, at any rate, is removed, while the constituents are reduced to an easily digestible form. On analysis we found that while the total sulphur was distinctly less in amount than is commonly found in ordinary pea flour the proteids showed an increase. Moreover, the process evidently increases the solubility of the flour, since 16 per cent. of it proved to be soluble in cold water. The method therefore adopted for the preparation of this pea flour may be approved as rendering this nutritious pulse more dietetically suitable.

New Inventions.

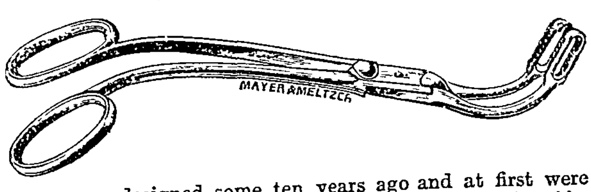
A NEW INHALER.

THE accompanying illustration represents an inhaler which we have received from Messrs. Maw, Son, and Sons of 7, Aldersgate-street, London, E.C. The indiarubber bag has several whalebone supports which prevent its complete collapse. This represents the chief advantage of this inhaler over the many similar patterns designed for the use of ethyl chloride. We do not think that the sponge is anything but a disadvantage, because we believe that the simple method of introducing the ethyl chloride directly into the bag is better than any more complicated process. The whalebone slips undoubtedly are of use and they might well be adapted to the bags commonly used with most forms of ether inhaler.



POST-NASAL FORCEPS.

THE usual Loewenberg forceps and many of the modifications measure from 11 to 12 inches in a straight line from one extremity to the other. The examination of a few skulls and moist sections show that this is unnecessarily long. The instrument here represented only measures six and a quarter inches from tip to handle. With the patient's mouth wide open, as it must be in all cases requiring this instrument, this length is sufficient, even for full-grown adults, while the shortness and lightness of the forceps lend precision to all manipulations in the post-nasal space. The forceps are otherwise but a slight modification of the form known as Jurasz's.



They were designed some ten years ago and at first were employed in all cases of removal of naso-pharyngeal adenoids. Since adopting the curette this use of the forceps has been almost entirely abandoned. But the instrument is still, owing to its small bulk, better adapted than the smaller curette for removing adenoid growths from infants in whom the post-nasal space is both relatively and absolutely so remarkably small. In all adenoid operations it will also prove useful to have these forceps at hand for grasping any detached mass which may fall out of the caged curette or for removing any tags of growth found hanging after the operation. Apart from the adenoid operation, these forceps are frequently of service in removing polypi or cysts from the choanæ and in dealing with foreign bodies, necrosis, and new growths in the post-nasal space. As they serve as carriers of cotton wool or gauze they are convenient for making applications and dressings or for tamponing the cavity. They are made in one size only by several instrument makers.

Queen Anne-street, W. STCLAIR THOMSON, M.D. Lond.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Sept. 8th, 1827.

FOREIGN DEPARTMENT.

*On the Mode in which the Sympathies between the Ear, and other Organs, are effected.**

DIFFERENT sounds produce pleasant or unpleasant sensations, and operate powerfully on the animal and vegetative functions. Very strong sounds, or sounds of a certain kind, produce very singular and striking effects in persons whose nervous system is easily excited. The celebrated Bayle always fell into convulsions on hearing the fall of water from a pipe (*Esprit des Journaux*, Nov. 1793); and Rousseau states, that he knew a woman who could hear no kind of music without being thrown into convulsive laughter. Tissot also relates the case of a person, in whom the sound of music brought on epilepsy. Sounds not only put the brain in activity, in consequence of their action on the auditory nerves, but they exert also an immediate influence on the auxiliary nerves of the ear derived from the fifth pair, by which different organs of the head are brought into sympathy. A violent sound sometimes causes a sudden and involuntary closure of the eyelids. Some persons complain of a peculiar sensation being produced in the teeth by the rubbing and cutting of glass, which is commonly called putting the teeth out of edge. These, and similar appearances, can only be explained by the communication between the chorda tympani, and the branches of the fifth pair. There are also other phenomena, which show that the organs of vegetative life are affected by certain sharp sounds, and which can only be explained by the connexion of the chorda tympani, with the branches of the glosso-pharyngeal nerve distributed to the tympanum, and of the sympathetic. Paullini* relates a case of a man who invariably vomited on hearing music; and Pechlin† makes mention of a person, in whom the mechanical irritation of the external ear caused vomiting. It is also well known, that persons of weak nerves sometimes become faint by the tunes of the harp; and there are several instances on record, of the respiratory and urinary organs being affected by a similar cause.

As the ear is connected with the sympathetic, it not unfrequently happens that in primary affections of the abdomen, this organ also suffers. This can only be explained,‡ by the connexion of the sympathetic nerve with the glosso-pharyngeal. Sand mentions § the case of a person with an ulcer at the bottom of the stomach, who complained of a pain extending from the stomach to the left ear. Difficulty of hearing, and complete deafness, are sometimes produced by affections of the abdomen. To this cause belongs the periodical deafness which comes on with spasms of the abdomen and intermittent fever, and again disappears. Wardrop || mentions the case of a child labouring under intestinal worms, who became amaurotic, and nearly lost the power of hearing; the functions of both senses were restored after the expulsion of the worms. Sometimes, also, difficulty of hearing, and deafness, come on during pregnancy, and disappear after delivery.

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* Tiedemann's and Treviranus's Zeitschrift fur Physiologie. Vol. II. Part I. p. 273.

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* Observ. Medic. cent. 4. obs. 71.

† Obs. Physico-Medic. Lib. 2. Obs. 45.

‡ De Nervi Sympathetici Fabrica et Functionibus, p. 137.

§ Disser. de raro ventriculi abscessu in Haller. Collect. Diss. Pathol. Vol. III. p. 128.

|| Essays on the Morbid Anatomy of the Eye. Vol. II. p. 183.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 9, 1905.

The Presidential Address at the British Association

The doctrine of natural selection, or survival of the fittest, is in most men's minds associated only with the speculations of Darwin and Wallace as to the origin of the various species of animals seen at the present time and with the evolution of the human race from some more lowly type, but it now seems that the same process is at work throughout the universe in inanimate as well as animate matter and that the theory is comparable in its range with the theories of gravitation and of the conservation of energy. The luminous and fascinating address delivered by Professor G. H. Darwin before the British Association for the Advancement of Science at its recent meeting in South Africa shows how the process of elimination of weaker forms of matter is at work in the physical world, alike in the minutest particles and in the vast systems of suns and planets which have been discovered by the astronomer. The preparation of radium and the study of the remarkable properties which it exhibits, if they have not revolutionised scientific views as to the ultimate constitution of matter, have at least confirmed beyond possibility of doubt speculations to which other discoveries in the realm of physics had gradually led. We now know that the chemical atom, the smallest particle of matter which is capable of entering into combination with a similar particle of another substance, is not in reality an ultimate indivisible body, but that each atom is made up of many smaller corpuscles or electrons of infinite minuteness, held together by some unknown force and yet in all probability repelled one from another by a similar yet opposite force, as particles charged with like electricity are mutually repelled. Professor J. J. Thomson has succeeded in calculating mathematically the behaviour of some 70 such particles charged with negative electricity contained within a sphere positively electrified—truly a triumph of deductive reasoning—and finds that many of the peculiarities of a chemical atom would be thus reproduced. Yet there are reasons for believing that the simplest element—hydrogen—consists of atoms containing about 800 corpuscles, while the heavier atoms contain many times this number. Such composite structures as these last are not indefinitely stable and in the course of time they break down spontaneously into simpler and more resistant elements. We have an actual example of this process in the case of radium which is constantly throwing off particles by disruption of its atoms, a more simple element remaining behind. In any given portion of radium this decomposition only takes place gradually, a certain percentage of the component atoms breaking down in a unit of time. The life of the element is thus not eternal but it may be very long. It is probable that a similar process takes place in all other substances, but so much more slowly that we are unable to recognise the change. If the life of radium be 1000 years that of other elements may be millions but they may yet not last for ever. The process of evolution or struggle for existence between non-living substances is a contest of stability, the unstable constantly breaking down into more stable forms better fitted to survive in the conditions under which they find themselves. Constant change, not permanence of matter, is the lesson of recent discoveries. It is curious to reflect how exactly we are thus brought back to the views propounded by the old Greek philosopher Heraclitus who taught that all nature was in a constant state of change: nothing actually "existed" but everything was in a condition of "becoming." The atomic theory and the persistence of the more stable forms of atomic combinations while others were destroyed were also taught by a Greek thinker, Democritus, and a poetical statement of his doctrines is to be found in the Latin poet Lucretius, whose account may be read with interest at the present day as showing an extraordinary instance of successful guessing at truth when there were not enough facts known to render possible the construction of a really scientific hypothesis.

In the second portion of his address Professor Darwin shows the applicability of the evolutionary theory to the infinitely great as well as to the infinitely little. Change to forms of greater stability has been the keynote of the development of the solar system of which our earth is a part and doubtless of those other systems which astronomy has made known to us. The nebular hypothesis supposes that originally the sun and its attendant planets existed in the form of a mass of gaseous matter revolving upon its own axis. The central portion of this gradually contracted and solidified, giving rise in the process of shrinking to the production of intense heat. Thus the sun was formed in the centre of the system. According to this hypothesis the planets were formed by the coalescence of rings of gaseous material which had been thrown off from the central mass as it shrank and solidified, owing to the centrifugal force generated by increased rapidity of revolution; but this explanation appears untenable, since a ring of material substance would tend to solidify around its centre of gravity in the sun, not round any point in its circumference. Another mode of the formation of satellites is set forth by Professor Darwin, depending upon the behaviour of a rotating sphere of liquid, supposing that its velocity of rotation is constantly increased. The original sphere will first tend to assume an egg-shaped contour; next one end of the egg will enlarge and give rise to a projecting filament with a bulbous extremity; and finally the body will take the shape of two masses held together by a slender thread of matter. This will break and there will remain two separate masses, a smaller and a larger, the less revolving round the greater. This account seems to apply to the origin of the earth and its satellite the moon, for calculation shows that at one time the moon revolved at such a rate as to face always the same point of the earth's circumference, a fair proof that it was formed by breaking off from the larger body.

If we ask whether we have even now attained to a stable condition of things in our portion of the universe we are again obliged to return a negative answer. From the point of view of animal life perhaps the most evident lack of permanence is seen in the gradual wasting of the sun's heat by continual radiation into space, although it is interesting to note that it is now held that the process of condensation already mentioned is not the sole source of this heat, radio-activity being credited with some of it—a change of view which has brought the physicists into agreement with the geologists by enabling the former to concede the possibility of a much greater age of the world than they could have admitted on the older hypothesis. But the relations existing between the earth and its own satellite are themselves undergoing slow change owing to the gradual retardation of the rate of rotation of the former. The earth's surface is largely composed of water and by the attraction of the moon this water is being constantly drawn up into a heap in a direction towards the satellite, this upheaving constituting the tides. As the earth revolves the tidal flow of the water constitutes a slight check upon its motion, friction occurring between the surface of the earth moving in one direction and the water being drawn in another. In itself this is but a comparatively minute force, but acting over a long period of time a small cause produces great results and this infinitesimal brake upon the wheel is gradually bringing the revolution of the earth to a standstill. Thus in great things as in small there is no such thing as permanence. "The old order changeth giving place to new" not only in human affairs but in the heaven above and the earth beneath, and the appearance of changelessness in the universe around us is only due to the minute length of human life compared with nature's cycle, just as a revolving wheel illuminated by an electric spark seems to our eyes to be stationary. To the "spectator of all time and existence" the universe would offer the spectacle of ceaseless mutation and living substance would be distinguished from other matter merely by the relative speed of its transformations.

The Rational Treatment of Mangled Limbs.

In the first half of the nineteenth century the subject of the rational treatment of mangled limbs was much discussed, indeed, it may be said to have been thrashed out by Larrey, Liston, Guthrie, Hammick, Fergusson, Faure, and others, while in 1843 Dr. Henry Reid of Manchester obtained a gold medal at the University of Edinburgh for a thesis on this very subject. Then came Pasteur and Lister, since whose discoveries the surgery of disease has overshadowed the surgery of trauma, the modern surgeon paying less attention to fractures, dislocations, and sprains than did his great predecessors of the last century because his sphere of work has been so indefinitely increased. In another column will be found a letter from Mr. C. Hamilton Whiteford of Plymouth which is an echo of an old controversy on the treatment of mangled limbs. The indications for amputation before the days of antiseptic doctrines were laid down as follows:—The rupture of the main vessels and nerves, the opening of a large joint, the compound comminution of a bone, the separation of very large areas of skin (especially if they took the form of a cuff and were turned down, as when limbs were caught in rollers), and, lastly, excessive fouling of the wound, especially with humid mould and earth. There was even in Liston's time a strong feeling against needless amputation, but the dangers to be combated were different in degree and conservative treatment had not the chances that it possesses in these days when antiseptic technique has been carried so far. Hæmorrhage, collapse, and fever, which we now know to mean septic infection, were recognised as the essential risks against which provision had to be made. All were agreed that the hæmorrhage must be arrested at once by the rapid application of forceps or ligatures or by tight bandaging over a compress. It was generally accepted that to amputate during collapse would almost certainly prove fatal. Sir William Fergusson said in 1857: "It is a maxim almost invariably applicable never to amputate whilst the patient is in a state of shock," but as Mr. Jonathan Hutchinson, sen., urged about the same date the sooner the amputation is done when the shock is combated the better the results. The surgeons of 50 years ago recognised the terrible mortality which followed "intermediary" amputations of mangled limbs—i.e., amputations after the expiration of 24 hours from the receipt of the injury—although they did not explain it. Now we know that immediately after the accident the infection of tissues is strictly local and that an amputation performed then will be through aseptic tissues, but that in 24 hours' time the micro-organisms have spread by multiplication to the deepest recesses of the wound. The lymphatics of the limb above are full of them and an amputation performed then passes through virulently infected tissues and permits the most rapid absorption from the raw muscular surfaces of the flaps. The older surgeons knew that if the patient survived the acute stage of suppuration and amputation were performed some weeks later, when sepsis had become chronic and hectic had commenced, the results were relatively very favourable, although the theories of acquired immunity had not been formulated.

The treatment of mangled limbs has been greatly improved by the application of antiseptic methods and is generally agreed to be as follows, the essential risks being still hæmorrhage, collapse, and septic infection:—The clothing should be rapidly cut away and removed. The hæmorrhage if active must be arrested at once. All but large arteries can readily be controlled by an antiseptic compress when a tight bandage should be locally applied. Tourniquets should be avoided; at any rate they should never be applied for more than an hour, and even in that time they will seriously interfere with the vitality of the future flaps. The shock must then engage the medical man's attention. Morphine may be injected at once and with no stinted hand. A third of a grain combined with a thirtieth of a grain of strychnine for an adult is a usual dose, followed by a sixth of the former and a sixtieth of the latter every hour until sleep is induced. It is not only pain which is thus relieved, but anxiety and vascular failure, for the pulse rapidly improves and becomes even and full and the extremities grow warm whilst the restlessness subsides. The patient is sure to be in urgent need of fluid if he is conscious, when his thirst may be met by moderate quantities of water or weak tea frequently repeated. It is well to avoid the administration of an anæsthetic at this stage because of the risks of subsequent vomiting and further heart failure. If the loss of blood has been very great and the collapse profound, intravenous transfusion of saline solution may be unavoidable. The patient should be wrapped in blankets or rugs and, if they can be obtained, surrounded with hot-water bottles or hot bricks. In an hour or so when narcosis is complete the limb may be uncovered, cleansed, and fixed upon some apparatus for transportation. The medical man on the spot can do more than any other subsequently to benefit the case. On no subsequent occasion can so much be done to prevent extensive septic infection. A free use of hot water, soap, and a razor will remove many of the sources of infection before they have had time to multiply or to be absorbed. Hopelessly soiled and torn tissues may be cut away without pain to the patient and a firm antiseptic compress may be applied over the entire wound. Splints or improvised supports should then be applied, one of the best of these being a voluminous pillow tied around the limb by strips of bandage. Such is the routine treatment of a patient with a badly mangled limb to whom the surgeon has to render first aid. In spite of the obvious simplicity of the teaching we have thought it well to give the details, as it is certain that some practitioners are a little too willing to listen to the suggestions of friends, bystanders, or witnesses of the accident and to have the patient transported at once to a hospital. This course is bad for the medical profession, as it leaves the impression that only at the hospital can serious cases be treated, and it is bad for the patient, as the earlier the measures preventive against sepsis can be taken the better chance he runs.

The patient is now ready to be removed to some convenient spot where the question of amputation can be discussed and, should it prove necessary, the operation performed. He should be conveyed in the recumbent position and with as little jarring as possible while the various provisions against shock must be continued during the journey. Many such cases arrive at hospitals several hours after the accident when it is found that nothing has been done except partially to arrest the hæmorrhage. This is, as a rule, the result of the impatience of the relatives to get the patient to a hospital. The operating surgeon is then on the horns of a dilemma should he have to decide that amputation is necessary. If he gives an anæsthetic, cleanses the wound, and amputates at once the patient will die from shock. If he waits completely to combat the collapse until 12 or 18 hours after the accident sepsis will have spread far and wide through the tissues and the patient will die from acute sapræmia or septicæmia. As a rule, if amputation is unavoidable he strikes a mean and removes the limb after some two or three hours have been devoted to relieving the shock. Should a bad result follow it is rather to be attributed to the failure of the early treatment than to any irrational desire to remove a limb. It will be seen that in many matters we agree with Mr. WHITEFORD'S views as expressed in his letter but we cannot help thinking that his experience has been unfortunate. In all the hospitals with which we are acquainted the surgeons are fully alive to FERGUSSON'S dictum that no amputation should be performed during the stage of shock, and Mr. WHITEFORD does not seem to have appreciated the increasing danger of amputating mangled limbs after the twelfth hour. When such a limb must be removed it should be done at the earliest possible moment after the shock is combated.

Research in Medicine.

DR. A. E. WRIGHT, formerly Professor of Pathology at the Army Medical School at Netley and now pathologist to St. Mary's Hospital, has thrown himself with characteristic energy into the work of endeavouring to persuade the public that the endowment of medical research is the most pressing necessity of the time in which we live. An article entitled "The World's Greatest Problem" appears under his name in the *Liverpool Daily Post* of August 30th, and in this he dwells at some length upon the vast importance to the community of the problems presented by disease, upon the insufficiency of medical knowledge with regard to them, and upon the legitimacy of the demand upon rich people that they should give of their abundance in order that this insufficiency may be remedied. "*Qu'allait-il faire dans cette galère?*" is a question which the spectacle of a professor of pathology contributing to a provincial daily paper causes to spring unbidden to the mind; but we understand that Dr. WRIGHT has consented to formulate his opinions for the use of an organisation of gentlemen interested in public health and that the manner in which the results shall be employed has been left in their hands. If this be so, these results will probably be given to the public through various channels and, it may be, in slightly differing forms, but we may clearly take the article to which we refer as a deliberate pronouncement upon points of great public importance. Dr. WRIGHT is a pessimist of the most pronounced type. He declares the prevailing belief "that the medical art of to-day can effectually intervene in the course of disease" to be an illusion and one which ought to be dispelled. He tells us that the "thoughtful and conscientious physician" when confronted with an acute bacterial invasion does not conceal either from himself or others that he is "quite in the dark" and that he can neither foresee nor determine the issue of the conflict. Fully conscious of the limits of his knowledge, and conscious also of the risks of ignorant intervention, the thoughtful physician aforesaid dismisses from his mind all idea of positive treatment. He contents himself with laying aside the drugs which he feels to be useless and with looking after the feeding of his patient. From this sweeping statement Dr. WRIGHT excepts only "one or two infective diseases which can to some extent be controlled by remedies placed in our hands by chance" (we presume the intermittent fever group) and the case of diphtheria, "a disease for which an effective remedy has been furnished by medical research." As regards others, it may be affirmed with confidence, Dr. WRIGHT believes, that the medical art, as at present practised, can do nothing to avert death from a virulent bacterial invasion or to bring about a cure.

Proceeding from the premisses above laid down, and having previously asserted that "of all the evils which befall man in his civilised state, the evil of disease is incomparably the greatest," Dr. WRIGHT goes on to explain, lucidly and accurately, circumstances which appear to him to stand in the way of active prosecution of inquiries by which the dark places of medicine might be illuminated. He points out that hospital physicians, being unpaid, cannot spare the necessary time for unremunerative laboratory work, and he attributes to economic reasons the "fact"—he states the debateable point as a fact—that we are not making any effort worthy of the name to solve the problems of disease. We have not in England any appreciable number of workers engaged upon the task of medical research. The economic reasons for this are that a young man who proposes to take up medical research as his lifework finds himself immediately confronted in his own person with the fundamental and primitive problems of obtaining subsistence, and clothes, and a shelter over his head. Even if appointed to one of the research scholarships which have been recently founded for the purpose of launching the student upon a career of research, the problem will only be staved off a little. Dr. WRIGHT wishes it to be known universally that "the scientific knowledge which alone can avail in the conflict with disease is—practically all of it—still to seek," and that the first duty of all members of the community is to do something towards rendering the research successful, "towards making provision against the day when they themselves, and those near and dear to them, will be in the grip of disease." Especially does he address himself to those careless rich who nurture the comfortable faith that when they are ill Dr. A, or B, or C, whom they know, or failing him, Dr. X, or Y, or Z, in London, or Paris, or Berlin, will be able to cure their diseases; and he tells them that when their dark hour arrives the wealth in which they trust will be impotent to purchase for them any effectual scientific aid. Now, he assures them, is the accepted time at which it is the duty of every far-seeing man to reflect upon the problem as to how the proper kind of workers can be enlisted for the purpose of medical research, and how the proper training and skilled direction can be provided for the workers. Until, he concludes, the "economic conditions shall have been so altered as to attract to the work of research a proportion of the best ability of every country the task of providing for that scientific skilled direction of medical research will be the really difficult problem."

We have been very desirous to do no injustice to Dr. WRIGHT'S position or arguments and have therefore, to a considerable extent, stated them in his own words, but we do not find his opinion of the position sound or his arguments free from fallacy. It is obvious, too obvious to be worth saying, that much of the recently acquired knowledge as to the production of disease by invading organisms is in its infancy. There open out from what we have learned many fields of inquiry which must be diligently traversed before the full value and the complete application even of what is now known will be in our possession. In the case of a large number of invading organisms, we do not at present know any means of destroying them without injury to the person whom they have invaded; but, admitting this to the fullest extent, we believe that we shall carry with us the assent of every experienced clinical physician when we affirm the power of judicious treatment, even of drug treatment, to control or modify many of the results of what Dr. WRIGHT calls the conflict. A phrase familiar to our forefathers, the phrase "to obviate the tendency to death" is one that has by no means lost its significance, and the means of accomplishing what it suggests are manifold. The employment of these means may often be far more scientific, in the proper sense, than would be the administration of the antidotes which are what Dr. WRIGHT apparently seeks from science. We regret, in common with all reasonable people, that scientific research should be hampered by the fact of its immediate pecuniary unproductiveness, and we should gladly welcome any funds or endowments by which the difficulties hence arising might be even partially overcome. We are, nevertheless, entirely sceptical as to the possibility of developing a capacity for research by any means of such transparent simplicity as the mere provision of stipends for the workers. The work, to be conducted successfully, requires the guidance of mental capacity of a high order, and this is not to be secured either by a laboratory training or by a certain if modest income. When Nature endows the world with a PASTEUR or a FARADAY there soon ceases to be any doubt concerning either the character or the value of her gift. America knows well that when ambitious mediocrity is placed in the chair we get a type of professor in whose person loquacity not always inspired by accuracy is made to represent the latest achievements of scientific labour. Hypothesis is piled upon hypothesis, Ossa upon Pelion, and still we are not perceptibly nearer to the clouds. We shall be content for the medical profession with that moderate rate of secure progress with which the last few years have rendered us familiar, a progress marked, on the one hand, by antiseptic surgery and by its effects, on the other, as Dr. WRIGHT admits, by a remedy for one frequently fatal disease and by much increase of knowledge concerning the causation of others. We should be the last persons to undervalue research, especially when conducted by men gifted with the necessary caution, imagination, and absolute fidelity to truth as distinguished from hopes and from conjectures, but we should expect little from a medicine of antidotes which led to any under-valuation of clinical study or from any attempt to confuse and blend together the altogether dissimilar duties of a student of natural philosophy and of a medical practitioner. The former may sleep upon his doubts and may repeat and vary his experiments; the latter must act for the best in the particular emergency which is before him.

Annotations.

"Ne quid nimis."

THE CARE OF THE SICK AND WOUNDED IN THE BOER WAR.

THE strain placed upon the Royal Army Medical Corps during the South African war revealed the weak points in our army medical organisation and plainly demonstrated the inadequacy of our existing establishment. That the officers of the corps did excellent work was allowed by all, while the breakdowns that occurred were due mainly to under-manning and to difficulties of transport, but at the end of the war it was recognised that reforms of a thorough nature would have to be introduced in order to place the army medical organisation upon a satisfactory footing. Accordingly, a Royal Commission was appointed to consider and to report upon the care and treatment of the sick and wounded during the South African war, and to recommend measures calculated to prevent the recurrence of such loss of life and sickness as marked that campaign whether caused by the lack of medical aid or the absence of sanitary organisation. The report of the Commissioners was published in our columns at the time of issue and the recommendations will be found in THE LANCET, March 9th, 1901, p. 734. An abstract of these recommendations has been issued recently, together with the action taken thereupon. In accordance with the recommendation of the Commission a reorganisation committee, of which the Secretary of State for War was chairman, was appointed and dealt with the organisation of the Army Medical Service generally and delegated to an advisory board the consideration of certain points. Some of the subjects have since been fully considered by this board while some are under the consideration of the Army Council. The result, so far as action has been taken upon the recommendations of the Commission, is as follows. The establishment of medical officers has since the war been increased by 125 and the establishment of quartermasters, warrant officers, non-commissioned officers, and men, including provision for South Africa, by 1216, and the question of further increases in both categories is still under consideration. The equipment provided by the Mowatt reserves for three Army Corps, one Cavalry Division, and Line of Communication Troops has been completed and is being revised. By a Royal Warrant issued on March 26th, 1902, the pay of medical officers has been greatly improved. A college for the instruction of officers has been opened in London and a permanent building is now in course of erection at Millbank. All officers of over five years' service are required to attend a six months' course of instruction, which includes clinical teaching in the various civil hospitals in London by civilian professors. Officers passing certain standards at the examination after the course are eligible for accelerated promotion up to a period of 18 months, and officers who distinguish themselves in selected subjects are eligible for employment as specialists with extra pay. Promotion to the higher ranks is now made upon a system of strict selection based upon positive merit. It is stated that as a result of these regulations the supply of candidates has been of the most satisfactory nature. A Royal Warrant was issued in March, 1902, approving of the establishment of Queen Alexandra's Imperial Military Nursing Service. This warrant is believed to have greatly improved the conditions of service of nurses and is attracting highly qualified nurses. An increase of 259 nurses has been made to the peace establishment and this number is being recruited so that the needs of all important military hospitals will be met. The scale of nurses for fixed hospitals in war has been largely augmented. The appointment of properly qualified Sanitary Officers to all commands at home and abroad has been approved, and already, in all home commands and the important commands abroad, these Officers have been appointed. To insure a satisfactory ambulance wagon being provided a prize was offered and many firms competed. It is stated that after exhaustive trials of many patterns wagons of a thoroughly satisfactory character have now been selected. A special tent (a modification of the Indian pattern E.P. tent) has been designed and made and has undergone successful trials. The provision of further reserves of officers and orderlies is still under consideration. A scheme has been drawn up for the establishment of a reserve of civilian surgeons who will receive military training. A scheme of special enlistment to provide a sufficient reserve of trained orderlies is also under consideration. From all of which it will be gathered that much has been already accomplished in the direction of reorganising our army medical department. As to the working of these reforms some time must yet elapse ere criticism can be passed that will be quite just. As each reform has been announced, we have noticed it and welcomed it; and now that an official summary of the actions taken on the recommendations of the Royal Commission has appeared all will regard what has been done as an earnest of good intentions. It is sincerely to be hoped that our Army Medical Service may take rank in efficiency with the medical departments of any army in the world. The appointment of properly qualified Sanitary Officers to all commands at home and abroad is a departure which is especially to be commended. The need and value of such Officers have been emphasised in the most marked manner in all recent wars.

THE DECAY OF THE LAW OF CUSTOM.

THE progressive penetration of the white race into regions of the earth which are inhabited by coloured races may be said to have culminated in the recent expedition to Lhassa, which probably marks the beginning of a sapping process destined ultimately to lead to the fall of the last citadel of immemorial custom and prejudice. Under the title of the Decay of the Law of Custom an interesting address was recently delivered at the forty-fourth annual meeting of the Devonshire Association by the President, Mr. Basil H. Thomson, Governor of the Dartmoor Convict Prison. The laws of custom which have governed the coloured races for countless generations are, it is pointed out, gradually breaking down, though it is estimated that some 800,000,000 of the 1,500,000,000 constituting the population of the globe are still comparatively uncivilised and stagnant under the influence of these laws. The ever increasing facilities of intercommunication must make steadily for a greater uniformity of view and conduct amongst the different races of mankind and for the white race the question is of the first importance as to what part the coloured races will come to play in the affairs of the world when they shall have assimilated the teachings of Western civilisation. With this is bound up the question of the relative mental capacity of the white and coloured peoples. It would be rash to assert that any race is inferior in mental endowment to, and inherently incapable of reaching the mental level of, another, though plenty of white men are to be found who, after years of residence in Africa or the East, speak confidently of the general mental inferiority of the coloured races. Even in instances in which it is manifest that no such inferiority exists there is, they say, and always will be a profound difference between coloured and white races in the manner of viewing things. This is to maintain that a man's attitude of mind is as innate and as little liable to alteration as is the colour of his skin. We prefer to take the view that the differences between white and coloured races are in the main matters of custom and tradition and as such are subject to the influences of the agents of civilisation, such as steam and electricity, which have already done so much towards obliterating lines of demarcation between nationalities and towards establishing uniformity in manners and customs. That this is Mr. Basil Thomson's view may be seen from the following words of the address referred to:—"In tropical countries the line of caste would soon cease to be the colour of the skin. There, as in temperate zones, wealth would create a new aristocracy recruited from men of every shade of colour. In the great cities of Europe and America we might find men of Hindu, Chinese, and Arab origin controlling industries with their wealth just as Europeans now controlled the commerce of India and China, but with this difference, that they would wear the dress and speak the language which would gradually have become common to the whole commercial world. ...... Just as the aristocracy of every land would be composed of every shade of colour so would the masses of men who work with their hands. ...... White men would work cheek by jowl with black and feel no degradation. There would be the same feverish pursuit of wealth but all races would participate in it instead of a favoured few."

CHILDREN'S LIVES AND FLANNELETTE.

At the risk of its being considered vain repetition, attention should be called from time to time to the numerous lives of children sacrificed to flannelette. This sacrifice is offered more frequently among the poor than among those able to obtain helpers, for the mother who is single-handed cannot keep so close a watch on the children as her more fortunate sisters can arrange for. The coroner for Warrington, Mr. S. Brighouse, has held several inquests on these cases; one of the last was held on August 15th. The story seldom varies much. Here the little girl of eight years was left in the kitchen in her flannelette nightgown while the mother put the baby to bed. The child was reaching a roasted apple from the grate and her nightgown caught fire. She ran screaming into the yard and though the mother put out the flames the child died soon afterwards. The coroner said that "if parents wanted to lose their children a very easy way was to put them in flannelette and leave the kitchen fire without a guard." As some forms of this material are so inflammable and as it can, so it is stated, be readily rendered so little inflammable as to be a practically safe material, it is much to be desired that this fire-proofing process should be made compulsory.

CONGENITAL WORD BLINDNESS.

To the *Ophthalmoscope* for August Dr. C. J. Thomas has contributed an important paper on congenital word blindness —a condition to which attention has been directed by ophthalmic surgeons only in recent years but which appears to be far from uncommon. Since the London County Council issued an instruction to head teachers to submit to the medical officer every child of the age of seven years who appears very backward or defective a great number of cases of word blindness have been brought to light. Dr. Thomas calculates that nearly 1 in 2000 of London elementary school children has word blindness to a considerable degree. It seems to be most frequent in the lower classes and, like the allied conditions of idioglossia, amusia, and congenital word deafness, frequently assumes a family type. It occurs much more often in boys than in girls. The following is an example. A boy, aged seven years, was admitted to a special class in 1901. He was clever in all handiwork and had good powers of observation and reasoning but could not remember how to make the letters. In 1904 he was bright and intelligent and could do difficult sums in mental arithmetic but all attempts to teach him to read had failed. But he could read Arabic numerals and do sums in multiplication. He said that the written word "not" stood for "one"; "buds" he read as "branch"; and "horse" he could not read (he mistook "r" for "b"). But he recognised all these words when spelt aloud. His desire to read was painful, for he was more than ordinarily ambitious. In 1905 he could with difficulty make out a few words of three letters, which he did by tracing them out with his finger, thus utilising a form of kinæsthetic memory. In less serious or partial cases if the child is intelligent other centres in the brain may be used as a help and the child may pass muster but not become a fluent reader. Dr. Thomas refers to a case in which the child was of brilliant capacity and became an excellent surgeon. He practically did no reading but acquired all his knowledge at lectures and classes. The treatment consists in placing the child in a special class in which he can receive individual attention. The initial difficulty in learning the letters is due to the fact that the 26 signs are too numerous to be learnt and retained unless used in word-building. On the other hand, as Dr. James Hinshelwood has pointed out, the recognition of Arabic numerals is readily acquired. Letters should be taught from large signs and the child should be encouraged to copy them. The ordinary individual recognises words as a whole without troubling to recognise individually the letters of which they are composed. His visual word centre is therefore stored with memories of words. Dr. Thomas recommends for word-blind children the phonic method of teaching elaborated by Miss Dale of the High School, Wimbledon, which ignores in the early stage visual word images. In this the child associates from the beginning the form of each letter with the mechanism for producing the most usual sound for which it stands. Thus each word is pronounced without calling upon the visual word centre at all and its meaning is arrived at from speech and auditory memories. Miss Dale has devised a series of reading books in which only regularly phonetic words are met until the child is considerably advanced. Then other memories may be invoked.

THE CHOLERA.

The following notice has been sent out by the Local Government Board for Scotland to the clerks to the various local authorities :—

Sir,—I am directed by the Local Government Board to state that cases of cholera have recently occurred in certain places on the shores of the Baltic Sea. Cholera was present in several localities in Eastern Europe in 1904, and it has since spread through Russia and has reached the Baltic by way of the River Vistula in the persons of raftsmen descending that river.

The cases which up to the present have occurred in East and West Prussia are therefore regarded as imported cases and no definite outbreak of the disease has been reported from any quarter of Western Europe. Under the circumstances mentioned, however, the ports of the Baltic and perhaps some of those of the North Sea must be looked upon as threatened with the disease, and the authorities of British ports trading with Baltic and North Sea ports should therefore be on their guard against the importation of cholera into their districts by means of vessels coming from such ports.

In the event of any port of the Baltic or North Sea being declared definitely infected with cholera it will be the duty of the local authority to take, with regard to vessels arriving from that port, the action prescribed by the Board's Cholera Order of the 1st January, 1893.

I am, Sir, your obedient servant,
G. Falconar-Stewart, Secretary.

The Clerk to the Local Authority.

It is an enormous tribute to the efficacy of the sanitary arrangements of the sea-ports of Great Britain that the approach of epidemic diseases from abroad, in spite of our commercial communications with all parts of the world, has no terrors for the community.

THE TREATMENT OF LEUKÆMIA BY THE X RAYS.

Recently several cases have been reported in foreign journals of great improvement produced in leukæmia by the use of the x rays but the final results cannot yet be stated and therefore the value of the treatment remains to be appraised. In the July number of *Clinical Studies* Dr. Byrom Bramwell has reported two cases which are an important contribution to the subject. In one the patient was a boy, aged 15 years, suffering from lymphatic leukæmia. The mucous membranes were markedly pale and there were extravasations of blood around the eyes. The lymphatic glands were much enlarged and the spleen filled the left side of the abdomen. The red corpuscles numbered 2,000,000 and the white 340,000 per cubic millimetre and the hæmoglobin amounted to 38 per cent. A differential count gave small lymphocytes, 69·2 per cent.; large lymphocytes, 23·8 per cent.; polymorphonuclears, 4·6 per cent.; and myelocytes, 2·4 per cent. There were double optic neuritis and retinal hæmorrhages. In the second case the patient was a woman, aged 28 years, who was suffering from spleno-medullary leukæmia. She was not markedly anæmic; the spleen extended two and a half inches to the right of the umbilicus and almost into the pelvis. The lymphatic glands were not enlarged and the fundi were normal. The red corpuscles numbered 3,800,000, and the white 540,000 per cubic millimetre, and the hæmoglobin amounted to 69 per cent. A differential count gave myelocytes, 43·2 per cent.; polymorphonuclears, 41·4 per cent.; lymphocytes, 4·4 per cent.; eosinophile myelocytes, 5·8 per cent.; eosinophile polymorphonuclears, 2 per cent; and basophiles, 3·2 per cent. Both patients were treated by the application of the x rays over the spleen for five minutes, at first every other day and then every day. In both cases the temperature rose and assumed a swinging type. In the boy's case the treatment was commenced on Feb. 27th, 1905, when the red corpuscles numbered 1,600,000 and the white 230,000 per cubic millimetre and the hæmoglobin amounted to 33 per cent. On March 15th the white corpuscles had fallen to 7000, the spleen had considerably diminished, and the lymphatic glands were smaller and softer. But the red corpuscles did not increase in number and the general condition did not improve. On March 23rd the treatment had to be discontinued because of an erythematous inflammation produced over the enlarged spleen. Hæmorrhages from the gums and the nose occurred. On April 7th the red corpuscles had fallen to 660,000 per cubic millimetre and the hæmoglobin to 20 per cent.; the white corpuscles numbered 26,000 per cubic millimetre. Death occurred on April 15th. The result shows that in lymphatic leukæmia diminution in the size of the spleen and lymphatic glands and in the number of leucocytes is of no value if the red corpuscles and the amount of hæmoglobin do not increase. In the woman's case treatment was commenced on Feb. 28th. The white corpuscles steadily decreased and on June 7th had fallen to 12,000, the spleen much diminished, and the red corpuscles and hæmoglobin increased. On June 7th the patient menstruated for the first time for 11 months. Of the benefit derived from the x ray treatment there could be no doubt. It should be mentioned that both patients were given arsenic. These results are in accord with previous observations that the x ray treatment is more frequently beneficial in spleno-medullary than in lymphatic leukæmia. In some cases the rays were applied over the bones, in the marrow of which the lesion is supposed to be situated in the spleno-medullary form. It should be borne in mind that the use of the x rays is not without danger. An American writer, Dr. Dock, states that in some cases death has occurred during, and possibly as a result of, the treatment.

MEDICAL PRACTICE IN PERSIA.

THE unwillingness of Asiatics to adopt the habits and customs of European nations affects their appreciation of medical practice as conducted by the foreigners who come among them. In no countries are innovations imported from abroad welcomed on their first introduction and in the East it is generally found necessary to make some concession to local prejudices, though in important medical questions such compromises are nearly impossible. In Persia, where medical practitioners, male and female, have for years been labouring on behalf of the Church Missionary Society and other Christian agencies, it is said that native opinion is on the side of the native practitioners as regards purely medical treatment, but the superiority of the foreign surgeons over the hakims is admitted. Persian surgery unquestionably has its weak points. Violent taxis is the rule in herniæ; in cases of cataract eyes are frequently spoiled by dislocation of the lens backwards; trichiasis is sometimes improved by the unsightly method of causing sloughing of part of the offending id—usually by ligature. A great field is therefore open for European philanthropy in Persia where the agents of the Church Missionary Society have two hospitals—one with 48 beds in Julfa, the Armenian suburb of the old capital Ispahan, and one with 21 beds in Kerman, the chief town of the large province bearing the same name. In the hospital at Julfa in 1904 there were 1079 in-patients admitted (202 medical and 877 surgical cases), 547 major and 1138 minor operations were performed, and 11,790 new out-patients were treated. In the hospital at Kerman during the same period 217 in patients were admitted, 211 major operations were performed, and 4276 new out-patients were treated.

LUNACY IN EGYPT.

THE lunacy problem in Egypt seems to be assuming a degree of importance which demands the attention of the Egyptian Government. In the ninth annual report of the Egyptian Government Hospital for the Insane, Cairo, for the year 1903, the medical director, Dr. John Warnock, states that "during the year 1903 the 500 beds of the hospital have accommodated over 1000 patients, of whom more than 500 were admitted during the year." The rate of lunacy continues to increase and "the number of admissions would have been much greater if steps had not been taken to prevent the reception of any but dangerous or unmanageable lunatics." With the present limited accommodation and the increasing pressure of new cases demanding admission certain patients of the asylum have from time to time to be discharged prematurely, with the result that recovery is not completed in their own homes and many of them "return after a varying interval ill-treated, excited, and unmanageable, often also suffering from injuries." The problem of dealing with the increasing lunacy seems to be both difficult and serious. With the object of reducing the number of admissions, says Dr. Warnock, Government medical officers are instructed only to certify cases which they consider to be dangerous; the result of this limitation has been that several cases which medical officers have declined to certify have been taken to the asylum as criminal lunatics later owing to their having committed some criminal offence. A recent modification of the instructions has been made which it is hoped will prevent such occurrences. The discharge of dangerous lunatics who had partially recovered having resulted in acts of murder or of attempted murder by some of them while at large or while in the care of relatives, such cases are now retained longer in the asylum, with the result that in a few months the asylum population has risen to 100 more than the buildings should hold and overcrowding exists. 67 alleged criminal lunatics were examined during the year and 59 were admitted. "The number of these cases shows a large increase on past years. 16 of them had formerly been inmates here and most of them had been discharged for want of accommodation." The construction of an annexe at Abbasia to accommodate patients of this class is proposed by Dr. Warnock as a satisfactory arrangement helping to meet the requirements of criminal lunacy in Egypt. It is also advised that the existing asylum buildings and grounds at Cairo should be extended and a criminal annexe built, "as the present distribution of the criminal lunatics is most unsatisfactory, half of them being here [at Cairo Asylum] and the rest at Tourah, where they are too distant to allow of our constant observation of them." The extensions proposed would suffice to accommodate 140 male criminal patients, 205 ordinary male patients, and 50 female patients. While the existing asylum with its extensions would continue sufficient to provide for Upper Egypt and Cairo, Dr. Warnock is of opinion that a new asylum should be provided without delay for cases occurring in the Lower Egypt provinces and towns. A convenient site for it might be found, he says, near Alexandria, where cases from all parts could be easily brough by rail. "The more northerly the site the cooler the summer climate and the more suitable for the treatment of lunatics, when the heat causes much excitement and irritability." The buildings at the Cairo Asylum have been better supplied with water during the year, a high-pressure tank in the tower being kept constantly full, while the means of protection against fire have been improved. The drainage and sewerage systems have also been rendered more efficient. The daily average number of patients resident during the year 1904 was 512. The admissions during the year amounted to 495, comprising 383 males and 112 females, showing a slight decrease from the year 1903. The cost of maintenance has been high during the year owing to an increase in the price of meat, milk, and provisions. The institution is under the charge of Dr. Warnock, and a deputy superintendent, assisted by three native Egyptian medical men. Mechanical restraint is practically never used, though seclusion has to be employed daily (on an average of six cases). Of the forms of insanity in the admissions 40 per cent. were maniacal or depressive cases, 7 per cent. were cases of general paralysis, 10 per cent. of pellagrous insanity, 18 per cent. of hasheesh insanity (maniacal, delirious, depressive, acute toxic, and demented forms), and the rest were of other forms. Of the causes of insanity in the admissions, hasheesh accounts for 74 out of 495 cases, pellagra for 52 cases, syphilis for 23, worry and poverty for 23, senile decay for 17, congenital mental defect for 14, alcohol for 12, epilepsy for 12, and other causes for the rest. The deaths during the year amounted to 79—viz., 60 males and 19 females. Of the deaths, seven were due to senile decay, eight to pulmonary and other forms of tuberculosis, ten to pellagra, 18 to general paralysis of the insane, and the rest to other causes. Half of the tuberculous deaths were of patients who were already suffering from the disease on admission. During the present year a villa for the reception of male patients of the private class will be completed.

GEORGE CRABBE, DOCTOR, POET, AND PARSON.

FEW persons nowadays read the poems of the Rev. George Crabbe and of those who do, most probably derive their first knowledge of them through the medium of the delightful "Rejected Address," commencing—

> "'Tis sweet to see from half-past five to six
> Our long wax candles with short cotton wicks,
> Touched by the lamplighter's Promethean art,
> Start into light and make the lighter start."

Fewer persons still know that Crabbe was originally brought up to be a medical man, being in 1768 bound apprentice to a village practitioner a few miles from Bury St. Edmunds, by whom he was at first employed as errand boy and labourer on the land, this being the usual way to treat the medical apprentice in the country 130 years ago. About 1774 Crabbe's father sent him to London to pick up a little surgical knowledge. He then returned to Aldeburgh, the little seaside Suffolk town where he was born, and became assistant to a surgeon, afterwards setting up in practice for himself. The practice, however, was not very successful and Crabbe came to London to try his hand at literature. Here the success of the "Library," the whole profits of which were generously given to the author by his publisher, brought him fame. He then took holy orders, being ordained in 1781. He was at first assistant curate at Aldeburgh and afterwards held various small livings in different parts of England. Like many another parish clergyman, he gave medical advice to the poor of his parish, being justified, as many of them are not, in that he had had a medical training. We are led to these remarks by having received a notification of a celebration to be held at Aldeburgh from Sept. 16th to 18th in commemoration of the 150th anniversary of Crabbe's birth. The items of the celebration include a reception by the Mayor of Aldeburgh, a visit to the parish church, in which will be shown the vestry books proving that Crabbe acted as parish medical officer in 1775, and besides these there will be an exhibition at the Moot Hall of relics connected with Crabbe, such as manuscripts, pictures, and engravings. Papers will be read during the meeting, among them being one by M. Huchon, professor at the University of Nancy, on "Crabbe's Aldeburgh," and another by Mr. Clement Shorter on "Crabbe's Place in English Literature." Visits will also be paid to places in the neighbourhood where Crabbe executed various clerical duties.

THE PREVALENCE OF EPIDEMIC PARALYSIS IN SWEDEN.

IN its issue of August 22nd the Stockholm *Svenska Dagbladet* states that about a month previously an epidemic nervous disorder appeared in certain parishes of the district of Skaraborg and that Dr. Ernest Levin was sent by the medical board to Vestergötland for the purpose of making inquiries as to its nature and origin. The first case was observed on July 10th in the parish of Trästena. During the nine succeeding days 13 new cases were announced at Trästena and Hjälta and during the next ten days 17 fresh cases. The disease had then attacked in almost equal numbers all ages from one year to nine years. After July 30th it seemed as if the epidemic were decreasing, but in the meanwhile it appeared in Mariestad where 12 cases occurred up to August 1st, after which it seemed as if the epidemic had ceased also in the last-named place. Unfortunately, however, it was soon evident that the disease was not confined to Vestergötland, for it appeared in other parts of Sweden widely remote from each other. The first report of it from Hernösand came on August 9th. The medical officer at the hospital there had on the same day no less than three cases of acute poliomyelitis, two of them from the same parish, Ullanger, and three weeks previously a patient had died after being ill for only three days. Almost at the same time a report was received from a medical man in Valdemarsvik that some remarkable cases of sickness had happened amongst children in the district. The first symptoms were said to be feverishness followed by slight paralysis and there was therefore a danger that in the present circumstances the disease would be diagnosed as acute infantile paralysis. The medical board ordered that the schools should be closed where necessary and that all precautions usual during the prevalence of an epidemic should be observed. At the same time the medical board informed the provincial governments of Ostergötland and Vesternorrland that if it were necessary to send additional practitioners to the infected districts their expenses would be paid by the State, just as in the case of dangerous epidemics. Two days after the announcement of the epidemic in Valdemarsvik and Hernösand a newspaper in Smaland stated that an infectious disease of children had been prevailing for several weeks in the district of Kronoberg, although its existence had only just come to the knowledge of the local practitioners. The symptoms were violent headache, high fever, relaxation of the muscular system, and spasmodic twitchings. It attacked children of all ages and even adults up to the age of 27 years, the latter being apparently more severely affected than the younger sufferers. In some cases death had ensued after only a couple of days. Dr. Levin informed a representative of the *Svenska Dagbladet* that the disease differed in many respects from acute infantile paralysis. As a rule it did not attack very young children but was more prevalent among adolescents, the upper limit of age being 20 or 21 years. It was often fatal and in such cases the course was so rapid that a patient might die on the first day of the illness. When the febrile stage had subsided it might be followed by paralysis of the arms and legs. In some of the patients the paralysis seemed to be permanent and in others it had partially or entirely disappeared; but there were cases, and not a few, where the whole of the beginning of the course of the disease exactly resembled the above named cases yet without the occurrence of any paralysis whatever. During the febrile stage the temperature is usually between 38·5° and 39·5°C. and the patient, as a rule, exhibits extreme tenderness in the muscles of the back, neck, and shoulders, as well as stiffness and rigidity of the neck. The sensibility is often so great that the patient screams at the least movement of the muscles controlling the parts just named. It does not seem that any state of coma occurs during the last stage of the disease and when the case ends in death full consciousness is usually maintained to the last. Various methods of treatment have been followed but with little apparent benefit. Isolation of the patient is essential for the purpose of checking the spread of the disease. The remarks attributed to Dr. Levin give no information as to any points of resemblance or difference between the disease in question and the epidemic of cerebro-spinal fever which has existed in Central Europe since the latter part of 1904.

THE BAWDEN FUND.

Mr. Edgar Speyer, the well-known banker, has been made the almoner of a munificent philanthropist—namely, Mr. E. G. Bawden of the Stock Exchange. In a letter communicated to the press Mr. Speyer says that Mr. Bawden has intrusted him with the sum of about £100,000 "to be applied to purposes of charity and benevolence and for the advancement of knowledge, especially in aid of human suffering." With the concurrence of the donor Mr. Speyer has decided to apportion the money to various institutions in the form of capital to be vested in trustees, to be known in each case as the "Bawden Fund." The sum of £16,000 is allotted to complete the sum of £200,000 to bring about the incorporation of University College in the University of London; £10,000 are allotted for East-end emigration; £31,500 are divided between King Edward's Hospital Fund and ten of the metropolitan hospitals; while much of the remainder of the money is allotted to sundry convalescent homes, holiday funds, and various institutions for homeless and crippled children. Mr. Speyer's selection is, we think, a very good one. He has placed a large part of Mr. Bawden's grand gift in places where it will relieve the maximum of human suffering. All honour to Mr. Bawden for his noble gift; may it be the precursor of others from those who are blessed with this world's goods.

RADIO-ACTIVITY IN MINERAL PURGATIVE WATERS.

THERE appears to be little doubt that radio-activity plays an important rôle in the therapeutics of mineral waters and this may possibly account for the more favourable action of natural mineral waters compared with that of waters artificially compounded. In many instances it is difficult to explain the therapeutic value of a water merely upon its mineral constituents. Many waters are of distinct value, although analysis shows that very little mineral matter enters into their composition. The waters at Bath, Buxton, Contrexeville, and Wildbad, may be quoted as examples. These waters are distinguished, however, by being radio-active and in the gases evolved in certain of them helium, which may be regarded as a product of radium, has been found. In a paper read before the Royal Hungarian Society for Natural Science by M. Béla Szilárd some interesting results are recorded concerning the radio-activity of a mineral water known as Igmandi Bitter Water. The springs from which this water is taken are situated in the commune of Igmand, some two hours journey from Komarom. The water has been exported to this country under the name of "Bitter Purgative Water (Lord Roberts label)." The wells are situated on clay soil. The mud raised from the bottom of one of the wells proved to be considerably radio-active. Further inspection of the mud showed the presence of crystals which proved to be chiefly calcium sulphate. On testing the cleavage surfaces of these crystals for radio-activity such strong impressions were obtained and the entire plate was so fogged by the emanations that it was considered worth while to make quantitative measurement of the radiating energy. The effects are sufficiently marked to show on a reproduction of the photograph. Measurements were subsequently obtained leaving no doubt of the remarkable radio-activity of the calcium sulphate crystals. Crystals of the same substance obtained from other sources gave negative results. Next the bitter water itself was examined. The salts obtained by evaporation, after being thoroughly dried, were placed upon very thin black paper in a perfectly dark room upon highly sensitised plates. The plates were placed in a double light-proof box which contained also a porcelain cup filled with anhydrous chloride of calcium to keep the salts dry. After three weeks the plates were developed and in the case of the salts obtained from Igmandi Bitter Water showed strong radio-active effects. There were spots which were not uniform but of various dimensions, some larger, some smaller, some lighter, some darker, apparently in accordance with the shape of the dry crystals and the nature of the contact. It is evident from this research that the Igmandi Bitter Water is decidedly radio-active, the activity being characterised chiefly by emanations. The radio-activity of the water is doubtless derived from the salts in solution, amongst which is calcium sulphate. Even in bottle the radio-activity is preserved for a considerable time. It will be interesting to learn how far radio-activity influences the therapeutic action of the purgative salts. According to recent researches the influence of radio-activity in this connexion would appear to be favourable.

UNTRAINED MIDWIVES.

AN important inquest was held recently at Kingston on the death after childbirth of a woman who had been attended by a midwife. A charge of neglect being brought against the midwife she said that she had been in practice as a midwife for 45 years, gave her age as 65 or 66, and further stated that she was certificated. The baby was born at 9 o'clock at night and, according to the midwife's own admission, there was considerable neglect of the mother. On being questioned by the coroner as to whether she knew how to take the temperature she replied that she did, she did not know the normal temperature of the body and had no thermometer. She was further asked if she understood how to stop bleeding and replied No, but that she would send for a medical man. The jury came to the conclusion that there had been neglect on the part of the midwife and were of opinion that a woman of her age should not be allowed to practise midwifery, for they believed she was much older than she stated herself to be. They further recommended that the case should be reported to the Central Midwives Board. When the new Midwives Act was introduced it was a matter of great difficulty to know what to do with the large number of women who were practising all over the country as midwives and who had never obtained a certificate in midwifery from any recognised institution. It would have been a great hardship to these women if their means of livelihood had been taken away and it was determined, therefore, that those of them who had been in *bonâ-fide* practice as midwives for 12 months previous to July 31st, 1902, should be permitted, on application being made to the Central Midwives Board, to have their names registered on the roll of midwives. In these conditions naturally a number of untrained and ignorant women are practising in various parts of the country as certificated midwives. As time goes on the number of these women will gradually diminish and their places will be taken by properly trained women who have passed the examinations of the Central Midwives Board. It is difficult to see how any other solution of the problem could have been arrived at without a grave injustice being done to certain competent midwives and without depriving the public of a form of necessary assistance. The Board has, of course, the power necessary to take off the roll the name of anyone who is found to be unfitted or who is convicted of negligence, and no doubt will do so in the case of the midwife in this instance if it finds the views of the coroner and his jury just.

THE BATHS AT HARROGATE.

AN important addition to the bathing facilities at Harrogate has recently been completed by the installation of the necessary appliances for the carrying out of the treatment which has hitherto been almost entirely associated with the French spa, Plombières-les-Bains. In THE LANCET of April 30th, 1904, p. 1186, we published a paper by Dr. de Langenhagen on the Treatment of Muco-membranous Colitis in which the methods adopted at Plombières are set forth in detail. Rectal irrigations when properly carried out are without doubt very valuable in the condition described by Dr. de Langenhagen and also in other diseases of the intestinal tract, such as catarrhal enteritis and intestinal lithiasis. The treatment has also been recommended for appendicitis and in cases of doubtful diagnosis a "hydro mineral cure" may often be tried with advantage. Dr. de Langenhagen is of opinion that the "intestinal bathing" should be considered as a real "internal dressing" of the mucous membrane, and he therefore claims that rectal irrigation is suitable not only in cases of colitis with constipation but also in those cases in which there are alternations of constipation and of diarrhœa or in cases of chronic diarrhœa. Many patients who cannot from financial or private circumstances proceed to a continental spa can and will go to one in England. This latest addition, then, to the baths of Harrogate is likely to prove a most useful one and the corporation of Harrogate may be congratulated on the enterprise which has just been completed.

CONGRESS OF THE INTERNATIONAL SOCIETY OF SURGERY.

AT the first Congress of the International Society of Surgery, which will be held in Brussels from Sept. 18th to 23rd, one of the subjects for discussion will be the Surgical Treatment of Non-Cancerous Affections of the Stomach. The discussion will be opened by Dr. A. Monprofit, professor of clinical surgery in the Medical School of Angers in France; Mr. A. W. Mayo Robson, Vice-President of the Royal College of Surgeons of England; Dr. J. Rotgans of Amsterdam; and Dr. A. Mattoli of Rome. From abstracts of the forthcoming addresses, published by the secretary of the Congress, it appears that Dr. Monprofit will include in his remarks the operations of puncture of the stomach through the abdominal wall, paragastric exploratory laparotomy, extragastric and intragastric dilatation of the pylorus, pyloroplasty, exploratory gastrotomy, gastrorrhaphy, curetting and cauterisation of gastric ulcers, gastrostomy, partial gastrectomy in various situations, gastroplasty, gastropexy, gastro-anastomosis, anagastrostomosis, total gastrectomy, and gastro-enterostomy. This last is the operation which he considers to be the most applicable in the majority of these diseases of the stomach. Mr. Mayo Robson will deal with the subjects of simple ulcer, hæmorrhage, adhesions of the stomach to adjoining organs or to the abdominal parietes, perforation, hour-glass contraction, tetany of gastric origin, dilatation, gastroptosis, acute phlegmonous gastritis, stenosis of the pylorus, injury of the stomach, hyperchlorhydria, and persistent gastralgia. Dr. Rotgans will confine himself entirely to gastric ulcer and its complications. He recommends operative treatment when the movements of the stomach are interfered with by conditions such as excessive peristalsis, vomiting, hypertrophy of the wall of the stomach, and retention of its contents. In such cases the cause is usually mechanical—namely, stricture of some part of the stomach or the existence of adhesions. The cause may also consist in *troubles dynamo-moteurs*, conditions in which the above-mentioned mechanical defects do not exist and gastroptosis is the only anatomical complication. He would also operate in cases of severe pain, tumours, hæmorrhage, perforation, and emaciation. Dr. Mattoli will discuss the surgical treatment of gastroptosis, pyloric stenosis, circular perforating ulcer, and several other gastric abnormalities. The official languages of the Congress are English, French, German, and Italian. During the proceedings a general meeting will be held to appoint the International Committee, to fix the next place of meeting, and to elect a president. We understand that the Belgian committee will send invitations to fêtes in honour of foreign members of the society on hearing from them. Intimations should be sent direct without delay to the general secretary, Dr. Depage, 75, Avenue Louise, Brussels.

THE SURGEON'S RESPONSIBILITY FOR THE DETAILS OF AN OPERATION.

A MODERN surgical operation in many instances demands on the part of the surgeon not only a high degree of manipulative dexterity but also in a considerable measure the power of organisation. The details of the preparation of the patient, of the dressings, instruments, ligatures, and so on, take up a good deal of time and require special knowledge, and it may be impossible for the really busy surgeon to attend personally to all these matters. It is true that of recent years with the gradual replacement of antisepsis by asepsis these details have been a good deal simplified, but the danger to the patient where asepsis is practised is all the greater if by chance any of the procedure is not carried out with scrupulous accuracy. Whether the surgeon looks after these things himself or is compelled from the pressure of work to intrust them to others there can be no question but that he must be held responsible in the case of any accident occurring. If he has any doubt as to the capability of his nurses then it is his duty to see that their work is properly supervised and checked. If he does not give clear and definite instructions—and whenever it is possible these should be written—then he is alone to blame if his orders are not executed in their entirety. In hospital practice it is obvious that much must be left to resident officers and nurses, but even here it is the duty of the surgeon to inquire from time to time into the manner in which these duties are performed. There is always a tendency on the part of the most conscientious man or woman, although inspired with the best intentions, to become a little careless in the performance of duties which are of the nature of a routine to be carried on quite without supervision. It would seem hardly necessary to call attention to such an obvious truth, but from time to time instances occur in which a surgeon, forgetting human fallibility, has trusted too much to others and has neglected to overlook properly their subordinate work, with disastrous results to the patient. A great responsibility rests upon every surgeon with regard to all, even the minutest, details of an operative procedure, no matter how impossible it may be for him actually to perform the work himself. This has been recognised by all writers on the subject, indeed, so much has been written about the surgeon's responsibility lately that we should not have thought it necessary any further to allude to it had not a case come to our knowledge recently in which the opposite view was honestly taken by an operating surgeon, who attributed the faulty manner in which certain details had been carried out to the default of a nurse. The nurse may have been incompetent, but that would make it all the more necessary for the surgeon to supervise every circumstance of the procedure before, during, and after the operation. It cannot be too strongly insisted upon that the surgeon, and the surgeon alone, is responsible for every detail of the care of the patients under his charge. It is a terrible blow to the surgeon to know that his well-devised and safe operation has totally failed because of the mistakes of an assistant, but that is the consequence of his responsibility and he cannot escape it.

A CLINICAL BLOOD TUBE.

THE examination of the blood for purposes of aiding diagnosis is becoming a much more frequent procedure than it was a few years back. The calculation of the number of corpuscles and the estimation of the hæmoglobin are both of considerable value in arriving at a conclusion in certain disorders of the blood. There has always been a difficulty, however, in sending samples of blood to a clinical laboratory for examination. Mr. Watkins Pitchgood, government bacteriologist at Pietermaritzburg, has forwarded to us a small piece of apparatus which he calls a "clinical blood tube" and which promises to overcome this difficulty. It consists of a tube containing a measured quantity of a diluting fluid which also prevents the coagulation of the blood added to it. There are also some small capillary tubes, each of which is capable of holding a column of blood equal to one-hundredth of the bulk of the diluting fluid. Consequently, when the blood and the fluid are mixed a 1 per cent. dilution of the blood results. All the tubes are conveniently packed in a metal case similar to those in which clinical thermometers are carried. The blood to be examined is collected in the capillary tube which when full is placed in the fluid contained in the larger tube. The latter is thoroughly shaken until the blood in the capillary tube has escaped and becomes uniformly diffused throughout the diluent. Numerous comparisons have been made between this method of preparing the blood for examination and the one usually employed with the Thoma-Zeiss apparatus. The results are perfectly satisfactory. We believe that the use of this little instrument will be found very valuable in forwarding samples of blood for examination and the amount of technique required is small.

BLACK SMOKE FROM RAILWAY ENGINES.

THE Salford corporation recently summoned the Lancashire and Yorkshire Railway Company for an alleged smoke nuisance. The case was heard on August 23rd and the company was fined 5*s*. and costs. Railway companies are great offenders in this way not only in Salford, where numerous complaints have been made by residents, but all over the country. The goods trains sin more grievously than the passenger trains, possibly in part because inferior coal is used but very frequently from bad stoking. As to the latter, the companies must be a good deal at the mercy of their servants, but if a sufficient watch were kept the special offenders would soon be discovered and could be dealt with. The solicitor who represented the company said that "the defendants desired to avoid the emission of black smoke so far as possible and they asked that [illegible]n should be given to them by the corporation of any further offence." These "intimations" might very well be given by the people who suffer without going through the corporation. If the companies are sincere in their contrition private complaints would be attended to, while if such complaints were disregarded at first their frequent repetition by numerous residents might lead to reform. Those who know Salford, and what may be called its normally high standard of smoke pollution, will understand that the black smoke from the engines must be black indeed and very offensive to lead to complaints from those who live habitually in an atmosphere so sooty and foul. Among the various factors rendering town life injurious smoke holds an important place and ought to be persistently fought as a "nuisance injurious to health." An old saying was that a coach and four could be driven through an Act of Parliament. Now the locomotive finds it an easy task, for under the Railway Clauses Consolidation Act the railway companies were to have their engines so constructed as to consume their own smoke. Apparently the requirement is a dead letter in this country. In Germany it appears that the Ministry of Commerce and Trade has instituted "travelling courses of instruction for firemen. ...... The interest shown in the instruction is constantly increasing and its value, based on the results obtained, is more and more appreciated." This refers to stationary boilers, and some instruction in their safe and economical management if followed in practice would do much to lessen the smoke nuisance, but the instruction might with advantage be extended to the management of locomotives, which are accountable for a considerable share in causing annoyance and damage of various kinds as they rush through the land.

A PROVINCIAL sessional meeting of the Royal Sanitary Institute will be held in the council chamber, Guildhall, York, on Saturday, Oct. 7th, at 11 A.M. A discussion will take place on Pure Milk-supply, to be opened by a paper by Mr. C. W. Sorensen of the White Rose Dairy Farm, York, and formerly chief dairy expert to the New Zealand Government, on Some Aspects of the Pure Milk Problem from Within. Mr. T. H. Appleton will also read a short paper on the New Earswick Model Cottages. The chair will be taken by Colonel J. Lane Notter, R.A.M.C. Tickets for admission of visitors may be had on application to Dr. E. M. Smith, Guildhall, York; or to Mr. E. White Wallis, Parkes Museum, Margaret-street, W.

THE Harben lectures will be delivered in the lecture room of the Royal Institute of Public Health, of which Lord Strathcona has been elected President, on Tuesday, Oct. 10th, Thursday, the 12th, and Tuesday, the 17th, by Professor Thomas Oliver, physician to the Royal Infirmary, Newcastle-upon-Tyne. The subject chosen is Some of the Maladies caused by the Air we Breathe in the Home, the Factory, and the Mine, including a description of Caisson Disease or Compressed Air Illness. The lectures are open to the public and all interested are cordially invited to be present.

THE death is announced of Dr. Thomas Herbert Littlejohn, medical officer of health of Hampstead, from heart failure due to an accidental overdose of sulphonal. The deceased, who was the son of Sir Henry Littlejohn, medical officer of health of Edinburgh, was only 38 years of age and was generally regarded as a very sound and capable sanitarian.

A SUM of £10,000 has been received by the honorary secretaries of King Edward's Hospital Fund for London. The sum, which is to be retained as capital, is part of a bequest left by the late Miss Marianne Frances Hasker to be devoted to charity at the discretion of her executors.

REPORTS OF THE COMMISSION ON SLEEPING SICKNESS OF THE ROYAL SOCIETY.[1]

THE report of the work of the Commission is by this volume brought up to Nov. 15th, 1904. The evidence brought forward shows (1) that sleeping sickness is at first a specific polyadenitis caused by the trypanosoma Gambiense; (2) that a constant lymphocytosis exists at all stages of the disease; (3) that sleeping sickness is the last stage of this disease and is invariably fatal; (4) that resistance of both men and monkeys varies greatly and acquired immunity is probable; (5) that the action of arsenic in vita on the trypanosoma Gambiense is partial; (6) that bacterial invasion, chiefly coccal, occurs in some cases in the very last days of the sleeping-sickness stage of the disease and therefore cannot determine the onset of this phase of the malady; (7) that in Uganda trypanosomes other than the trypanosoma Gambiense are pathogenic in animals; (8) that these differ entirely from trypanosoma Gambiense; (9) that one of these is probably identical with trypanosoma Brucei; and (10) that all trypanosomes are conveyed from the sick to the healthy by the tsetse fly, glossina palpalis, and not by other biting flies (stomoxys). In the sleeping sickness areas in Uganda from 50 to 75 per cent. of the inhabitants are in the stage of polyadenitis and are carrying on their ordinary work, and these infected people from the fact that they present no symptoms of illness are especially liable to infect "clean" fly belts and so bring about a spread of the disease. Recently the districts around Lake Albert and the source of the Nile have become infected and the presence or absence of glossina palpalis in Egypt becomes an important factor in determining the spread of the disease to the north along the shores of the Nile.

A feature in the morbid anatomy of sleeping sickness to which attention has not previously been directed is a curious condition found in the stomach. The condition is comparable with the petechial hæmorrhages met with under the endo- and epicardium of the heart in trypanosoma infections. The following points have been determined: 1. The lymphatic glands of every case of sleeping sickness are enlarged and the juice taken by puncture during life contains many active trypanosomes and also disintegrating forms. 2. The lymphatic glands of cases of so-called "trypanosoma fever" are enlarged and the juice taken by puncture during life contains active and disintegrating trypanosomes. 3. Lymphocytosis occurs in all cases of sleeping sickness. 4. The cells of the cerebro-spinal fluid of cases of sleeping sickness taken during life by lumbar puncture are lymphocytes and are more numerous in the late stages of the disease. 5. The gland juice in a certain proportion of cases in the last stage of the disease becomes infected by bacteria, especially diplo-streptococci. 6 Injection of a pure culture of diplo streptococci obtained from cases of sleeping sickness did not produce any alteration of temperature or other morbid sign in the healthy animal nor in the animal infected by trypanosomes, but at an early stage of the disease; in one monkey seriously ill at the time of injection a local suppuration was produced. 7. "Trypanosoma fever" would appear to be an early stage of the disease —sleeping sickness.

In regard to the report on Sleeping Sickness in the Nile Valley by Captain E. D. W. Greig, I.M.S., the general situation is that the disease is slowly spreading in the "fly belt" and will extend to its northern and southern limit. The fly belt does not extend into the Sudan and therefore the disease will not reach the Nile Valley in this direction, but as the glossina morsitans, a closely allied species to the glossina palpalis, exists in the Bahr-el-Ghazal province the possibility of the disease being carried by this fly must be regarded as probable.

Mr. E. G. Austin contributes a chapter on the Distribution of the Tsetse Fly, with a map showing the localities in the African continent where it is known to exist.

Lieutenant A. C. H. Gray, R.A.M.C., and Lieutenant F. M. G. Tulloch, R.A.M.C., give the result of their experiments in connexion with the multiplication of trypanosoma Gambiense in the alimentary canal of glossina palpalis. An enormous increase was observed in about 10 per cent. of the flies 24 hours after feeding, which continued at later periods up to 12 days in a total of 5·6 per cent. of them. The proportion of freshly caught flies in a sleeping sickness district (Entebbe) which contained trypanosomes was tested, when it was found that out of 200 flies examined two contained an enormous number of the parasites.

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[1] Volume No. V. Continuation Report on Sleeping Sickness in Uganda. By Captain E. D. W. Greig, I.M.S., and Lieutenant A. C. H. Gray, R.A.M.C. London: Printed for His Majesty's Stationery Sons, St. Martin's-lane. Illustrated. Pp. 287.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

THE International Congress on Tuberculosis will be held in Paris from Oct. 2nd to 7th, under the presidency of Dr. Herard, Professor Chauveau and Professor Brouardel being vice-presidents. It will be divided into four sections, of which Sections 1, 2, and 3 will respectively deal with the Medical Pathology of Tuberculosis (*President*, Professor Bouchard), the Surgical Pathology of Tuberculosis (President, Professor Lannelongue), and the Prevention and Treatment of Tuberculosis in Children (President, Professor Grancher), while Section 4 will be separated into two subsections, of which one will consider the Prevention and Treatment of Tuberculosis in Adults (President, Professor L. Landouzy) and the other will be devoted to Social Hygiene (President, M. Paul Strauss). All the meetings will take place in the Grand Palais, Avenue d'Antin, Champs Élysées. The subjects for discussion in Section 1 will be (1) the Treatment of Lupus and (2) the Early Diagnosis of Tuberculosis. In Section 2 they will be (1) the Comparative Study of the Various Forms of Tuberculosis; (2) Ileo-cæcal Tuberculosis; (3) Surgical Intervention in Tuberculosis of the Meninges and Encephalon; and (4) Tuberculosis and Traumatism. In Section 3 there will be four subjects for discussion relating to tuberculosis in families and schools and to its treatment in seaside homes. In Section 4 the subjects will be (1) the Etiology of Tuberculosis; (2) Insurance; (3) Influence of Dispensaries and Sanatoriums in the Prevention of Tuberculosis; (4) Hygiene of Dwellings; (5) Tuberculosis among Workers in Shops and Factories, in the Army and in the Navy; and (6) Disinfection in Relation to Tuberculosis. An exhibition will be held at the Grand Palais in connexion with the Congress and will remain open to the public during the whole month of October; it will be arranged in four sections—Pathological, Industrial, Social, and Historical.

Ordinary members of the Congress paying a subscription of 25 francs are entitled to take part in the work of the meetings and to receive its publications; their wives, sisters, and children may be admitted as associate members on payment of a subscription of 10 francs but must not speak or vote at the meetings. Both ordinary and associate members may attend all the receptions and other festivities held in connexion with the Congress; they are also entitled to the reduction of fares granted by the various railway companies. Return tickets (London to Paris and back) available for 14 days will be granted by the South-Eastern and Chatham Company and by the London and Brighton Company at the following rates:—South-Eastern Railway, first class, 58*s.* 4*d.*, second class, 37*s.* 6d.; Brighton Railway, first class, 39*s.* 3*d.*, second class, 30*s.* 3*d.* Intending travellers by these routes should apply to the National Association for the Prevention of Consumption and other Forms of Tuberculosis, 20, Hanover-square, London, W. The receptions and other festivities will include a reception by M. Loubet, the President of the Republic, a reception at the Hôtel de Ville by the municipality, a soirée given by the President of the Congress, the opening ceremonial at the Grand Palais, the closing ceremonial in the Grand Amphithéâtre de la Sorbonne, a banquet, and a gala evening. Visits will be made to the sanatoriums of Bligny (Seine-et-Oise) and Angicourt (Oise), to the hospitals for consumptive children in Ormesson, Villiers, Noisy, and elsewhere, to the Boucicaut Hospital, to the Institut Pasteur, and to various other establishments directly connected with the treatment or prevention of tuberculosis. Ladies will be received by a ladies' committee which will arrange for them excursions in Paris and the neighbourhood. After the Congress journeys will be made by special trains to institutions at Mont-des-Oiseaux (Riviera), Durtol (Auvergne), Hauteville (Ain), La Motte-Beuvron (Sologne), Montigny (Nord), and elsewhere.

The official languages of the Congress are French, English, and German. Members wishing to make a communication in one of the four sections must previously, if in France, send an application to the president of the section, but if in another country the application must be sent to the president of the national committee. The President of the national committee for Great Britain is Sir William H. Broadbent, 84, Brook-street, London, W., and the secretary is Dr. J. J. Perkins, 20, Hanover-square, London, W. No communication is to be made at a meeting unless its text has previously been submitted to the bureau of the Congress and written permission obtained from the president of the section. Ten minutes are allowed for each communication. Subscriptions will be received up to Sept. 30th inclusive by M. Pierre Masson, the treasurer, at the offices of the Congress, 21, rue de l'École de Médecine, Paris, and only his receipt will be acknowledged on behalf of the Congress. For objects to be shown at the exhibition application should be made to the Commissariat-Général at the above address. On Oct. 1st the office of the Congress will be transferred to the Grand Palais, where the meetings will be held.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

City of Liverpool.—The population of this important city during 1904 was estimated at 723,430, a total which is still materially behind that of Glasgow which was estimated at 798,357. Had Parliament consented to the absorption by Liverpool of Bootle the population of the extended Liverpool would apparently have almost equalled that of Glasgow, and it would then have devolved upon Glasgow to apply for another extension scheme. Parliament, however, decided otherwise and the decision is likely to have a material effect upon future extension schemes. The birth-rate of Liverpool for 1904 was 33·5 per 1000 and the death-rate 21·9 per 1000. As regards the important subject of infantile mortality the rates for 1904 ranged from 133 per 1000 births in Abercrombie district to no fewer than 281 in Exchange district. Liverpool still remains one of the very few places in the United Kingdom in which cases of typhus fever occur, and during 1904 there were 97 cases with 25 deaths from this disease, the yearly deaths during the last nine years having been as follows: 24, 36, 23, 19, 13, 11, 14, 25, and 57. Pulmonary tuberculosis is notifiable in a voluntary sense in Liverpool and has been so since the beginning of 1901. During 1904 there were 1897 cases notified and of these 188 were duplicates. The deaths numbered 1481, so that it is probable that but few early cases suitable for sanatorium treatment were brought to the notice of the health authority. This is regrettable, more especially as there are, we believe, two sanatoriums for the people of Liverpool—one at Heswall for paupers and the other at Delamere Forest for the working classes. We are glad to see that the smoke nuisance continues to be attacked by the Liverpool health authorities and that in the campaign the steamers on the Mersey are not allowed to escape. It is true that the smoke which rises from the Mersey traffic sometimes lends to Liverpool as viewed from Birkenhead an almost Turneresque effect, but those who are not artists would prefer to see the outlines of the city more distinctly. In this direction it is satisfactory to learn that the inclusion of Garston in the city limits has resulted in a reduction of smoke from the several copper-rolling mills in that locality. Dr. E. W. Hope reports that since the introduction of carburetted water-gas into Liverpool, presumably in 1895, eight cases, with six deaths, of poisoning by this gas have occurred. As regards milk control, the Liverpool Corporation Act, 1900, confers special powers upon the authorities and by its provisions inspectors are able to visit the various railway stations and take samples of milk which have been sent in from outside the city boundaries. If the milk is found to be contaminated with tuberculosis the veterinary superintendent, accompanied by a representative of the medical officer of health, may examine all the cattle in the cowshed from which the sample in question was derived. These "foreign" cowsheds contrast, Dr. Hope tells us, very unfavourably with those within the city limits. He speaks well of the operations of the Act in so far as Liverpool is concerned but, as he points out, there is nothing whatever to prevent the milk which is refused by Liverpool from being sent to other parts of the country where there are no "milk clauses" in operation. Liverpool consumes some 30,000 gallons of milk daily and of this amount about 17,000 gallons are produced within the city and about 13,000 introduced from outside. With a view to the reduction of infantile diarrhœa the corporation of the city of Liverpool has provided four milk depôts for the production of sterilised and humanised milk and this milk is distributed through the agency of 44 milkshops situated in different parts of the city. Dr. Hope observes that these milk depôts have been objected to on the ground that they may tend to save the lives of the children of the very poor who are already overburdened with offspring and that the expenditure may add a twelfth of a penny to the rates! The statistics furnished in the report before us are worth quoting, although, as Dr. Hope admits, no very great importance should be attached to them alone. Out of 5850 infants coming very promiscuously to the depôts (not to the shops) at varied ages and in conditions of health below the average, the mortality was 89 per 1000 (? children brought) as against 196 per 1000 (? births) for the city as a whole, 133 to 138 for the best districts and 258 to 281 for the worst. Dr. Hope points out, too, that the rates for children not attending the depôt above referred to include a large number of breast-fed infants and that if these were excluded the advantages in favour of the depôt would be much increased. It appears, too, that there is much evidence from parents, medical men, and others as to the value of these depôts and perhaps this testimony is more convincing than the statistics. All those interested in milk depôts should read this part of Dr. Hope's valuable report.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8646 births and 5188 deaths were registered during the week ending August 26th. The annual rate of mortality in these towns, which had been 17·0, 17·5, and 17·4 per 1000 in the three preceding weeks, declined to 17·3 per 1000. In London the death-rate was 16 7 per 1000, while it averaged 17·6 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 5 5 in Hastings, 6·8 in Hornsey and in Northampton, 8·2 in King's Norton, 9·2 in Burton-on-Trent, and 10·0 in Leyton; the highest rates were 23·3 in Merthyr Tydfil, 23·4 in Hanley, 23·9 in Great Yarmouth and in Middlesbrough, 24 8 in Salford, 25·9 in Rhondda, 26·2 in Burnley, and 29·8 in Grimsby. The 5188 deaths in these towns included 1580 which were referred to the principal infectious diseases, against 1507, 1626, and 1574 in the three preceding weeks; of these 1580 deaths, 1367 resulted from diarrhœa, 65 from whooping-cough, 53 from measles, 40 from scarlet fever, 33 from diphtheria, and 22 from "fever" (principally enteric), but not any from small-pox. The lowest death-rates from these diseases were recorded in Hornsey, Hastings, Brighton, Reading Devonport, Burton-on-Trent, Smethwick, Huddersfield, and Halifax; and the highest rates in West Ham, Wolverhampton, Grimsby, Stockport, St. Helens, Wigan, Burnley, Preston, Hull, Rhondda, and Merthyr Tydfil. The greatest proportional mortality from measles occurred in Barrow-in-Furness; from scarlet fever in Blackburn; from diphtheria in Middlesbrough; and from diarrhœa in West Ham, Wolverhampton, Grimsby, Stockport, St. Helens, Wigan, Burnley, Preston, Hull, Rhondda, and Merthyr Tydfil. The mortality from whooping-cough and from "fever" showed no marked excess in any of the large towns. No fatal cases of small-pox were registered either in London or in any of the large provincial towns, and no cases remained under treatment in the Metropolitan Asylums Hospitals on Saturday, August 26th. The number of scarlet fever cases in these hospitals and in the London Fever Hospital at the end of the week was 2762, against 2632, 2670, and 2735 at the end of the three preceding weeks; 343 new cases were admitted during the week, against 366, 355, and 361 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which were 111, 112 and 117 in the three preceding weeks, further rose to 118 in the week under notice and were 17 above the number in the corresponding period of last year. The causes of 41, or 0·8 per cent., of the deaths in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Leicester, Nottingham, Salford, Leeds, Newcastle-on-Tyne, and in 50 other smaller towns; the greatest proportions of uncertified deaths were registered in Portsmouth, Birmingham, Liverpool, Blackburn, Sheffield, and Sunderland.

In 76 of the largest English towns 8352 births and 5189 deaths were registered during the week ending Sept. 2nd. The annual rate of mortality in these towns, which had been 17·5, 17·4, and 17·3 per 1000 in the three preceding weeks, was again 17·3 per 1000 last week. In London the death-rate was 17·2 per 1000, while it averaged 17·4 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 4·3 in Hornsey, 8·0 in Burton-on-Trent, 8·2 in King's Norton, 8 4 in Handsworth (Staffs.), 9·2 in West Bromwich, 10·0 in Smethwick, 10·1 in Reading, and 11·0 in Bournemouth; the highest rates were 21·4 in Bury, 21·6 in Salford, 22·1 in Preston, 22·4 in Liverpool, 22·6 in Manchester, 25·2 in Grimsby, 25·8 in Hanley, and 26·6 in Sunderland. The 5189 deaths in these towns last week included 1432 which were referred to the principal infectious diseases, against 1626, 1574, and 1580 in the three preceding weeks; of these 1432 deaths 1189 resulted from diarrhœa, 73 from whooping-cough, 66 from measles, 44 from scarlet fever, 35 from diphtheria, and 25 from "fever" (principally enteric), but not any from small-pox. No death from any of these diseases was registered last week in Bournemouth; among the other towns the lowest death rates from the principal infectious diseases were recorded in Hornsey, Hastings, Reading, Devonport, Stockton-on-Tees, and Tynemouth, and the highest rates in Ipswich, Hanley, Wolverhampton, Walsall, Grimsby, Wigan, Bury, Burnley, Preston, York, Hull, and Sunderland. The greatest proportional mortality from measles occurred in Merthyr Tydfil and Swansea; from whooping-cough in West Hartlepool; and from diarrhœa in Ipswich, Hanley, Wolverhampton, Walsall, Grimsby, Wigan, Bury, Burnley, Preston, York, Hull, and Sunderland. The mortality from scarlet fever, from diphtheria, and from "fever" showed no marked excess in any of the large towns. No death from small-pox was registered last week in any of the large towns, and no case of this disease remained under treatment on Saturday, the 2nd inst., in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2670, 2735, and 2762 at the end of the three preceding weeks, had further risen to 2873 at the end of last week; 427 new cases were admitted during the week, against 355, 361, and 343 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory organs, which had been 112, 117, and 118 in the three preceding weeks, further rose to 131 last week, and were 23 above the number in the corresponding period of last year. The causes of 37, or 0·7 per cent., of the deaths in the 76 towns last week were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Bristol, Salford, Hull, Newcastle-on-Tyne, and in 46 other smaller towns; the largest proportions of uncertified deaths were registered in Northampton, Birmingham, Blackburn, Sheffield, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 14·8, 13·8, and 15·1 per 1000 in the three preceding weeks, declined again to 14·0 per 1000 during the week ending August 26th, and was 3·3 per 1000 below the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 11·1 in Greenock and 11·5 in Aberdeen to 15·9 in Dundee and 16·8 in Perth. The 471 deaths in these towns included 61 which were referred to diarrhœa, 18 to whooping-cough, nine to measles, two to scarlet fever, and one to "fever," but not any to small-pox or diphtheria. In all 91 deaths resulted from these principal infectious diseases, against 94, 67, and 74 in the three preceding weeks. These 91 deaths were equal to an annual rate of 2·7 per 1000, which was 2·6 per 1000 below the mean rate from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 44 in each of the two preceding weeks, increased to 61, of which 34 occurred in Glasgow, ten in Edinburgh, five in Aberdeen, four in Dundee, four in Greenock, two in Paisley, and two in Leith. The deaths from whooping-cough, which had been 14, 10, and 16 in the three preceding weeks, further rose to 18, and included 11 in Glasgow and three in Paisley. The fatal cases of measles, which had been eight in each of the two preceding weeks, increased to nine, all of which were registered in Glasgow. The deaths from scarlet fever, which had been two, one, and one in the three preceding weeks, rose again to two during the week under notice, and both occurred in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 48, 33, and 41 in the three preceding weeks, further rose to 44, but were 11 below the number in the corresponding period of last year. The causes of 15, or more than 3 per cent., of the deaths registered in these eight towns were not certified.

The annual rate of mortality in eight of the principal Scotch towns, which had been 13·8, 15·1, and 14·0 per 1000 in the three preceding weeks, rose again to 14·8 per 1000 during the week ending Sept. 2nd, but was 2·5 per 1000 below the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·2 in Leith and 11·2 in Aberdeen to 15·7 in Glasgow and 17·2 in Dundee. The 496 deaths in these towns included 63 which were referred to diarrhœa, 14 to whooping-cough, seven to measles, six to diphtheria, four to "fever," and two to scarlet fever. In all, 96 deaths resulted from these principal infectious diseases last week, against 67, 74, and 91 in the three preceding weeks. These 96 deaths were equal to an annual rate of 2·9 per 1000, which was 1·9 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 44, 44, and 61 in the three preceding weeks, further rose last week to 63, of which 34 occurred in Glasgow, 11 in Edinburgh, 10 in Dundee, five in Aberdeen, and two in Greenock. The deaths from whooping-cough, which had been 10, 16, and 18, in the three preceding weeks, declined again to 14 last week, and included eight in Glasgow. The fatal cases of measles, which had been eight, eight, and nine in the three preceding weeks, fell last week to seven, of which six were registered in Glasgow. The deaths from diphtheria numbered six last week, against none in each of the two preceding weeks, and included three in Glasgow and 2 in Edinburgh. The fatal cases of "fever," which had been one, five, and one in the three preceding weeks, rose again last week to four, of which three occurred in Glasgow, one being a case of typhus. The deaths referred to diseases of the respiratory organs in these towns, which had been 33, 41, and 44 in the three preceding weeks, further rose last week to 53, and were identical with the number in the corresponding period of last year. The causes of 18, or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21·2, 19·7, and 19·9 per 1000 in the three preceding weeks, declined again to 19·8 per 1000 during the week ending August 26th. During the previous four weeks the death-rate has averaged 20·2 per 1000, the rates during the same period being 16·7 in London and 14·4 in Edinburgh. The 144 deaths of persons belonging to Dublin registered during the week under notice were one fewer than the number in the preceding week and included 27 which were referred to the principal infectious diseases, against 29, 25, and 21 in the three preceding weeks; of these, 25 resulted from diarrhœa, one from measles, and one from diphtheria, but not any from small-pox, scarlet fever, whooping-cough, or "fever." These 27 deaths were equal to an annual rate of 3·7 per 1000, the death-rates from the principal infectious diseases being 5·0 in London and 2·0 in Edinburgh. The fatal cases of diarrhœa, which had been 25, 24, and 18 in the three preceding weeks, rose again during the week under notice to 25. The 144 deaths in Dublin included 43 of children under one year of age and 34 of persons aged 60 years and upwards;

the deaths of infants were slightly below the number in the preceding week, while those of elderly persons showed an excess. Six inquest cases and seven deaths from violence were registered; and 56, or nearly two fifths, of the deaths occurred in public institutions. The cause of one, or 0·7 per cent., of the deaths registered in Dublin during the week under notice was not certified.

The death-rate in Dublin, which had been 19·7, 19·9, and 19·8 per 1000 in the three preceeding weeks, rose again to 22·0 per 1000 during the week ending Sept. 2nd. During the past four weeks the death-rate has averaged 20·4 per 1000, the rates during the same period being 17·1 in London and 14·1 in Edinburgh. The 160 deaths of persons belonging to Dublin registered during the week under notice were 16 in excess of the number in the preceding week, and included 23 which were referred to the principal infectious diseases, against 25, 21, and 27 in the three preceding weeks; of these 19 resulted from diarrhœa, two from measles, one from diphtheria, and one from "fever," but not any from small-pox, from scarlet fever, or from whooping-cough. These 23 deaths were equal to an annual rate of 3·2 per 1000, the death-rates last week from the principal infectious diseases being 4·4 in London and 2·2 in Edinburgh. The fatal cases of diarrhœa, which had been 24, 18, and 25 in the three preceding weeks, declined again last week to 19. The 160 deaths in Dublin last week included 32 of children under one year of age and 41 of persons aged 60 years and upwards; the deaths of infants showed a decline from the number in the preceding week, while those of elderly persons was in excess. Four inquest cases and two deaths from violence were registered; and 51, or nearly one third, of the deaths occurred in public institutions. The causes of four, or 2·5 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons:—J. L. Thomas to the *Victory* and J. Sugrue to the *Excellent*. Staff Surgeons: W. B. Macleod, on recommissioning; W. M. Keith to the *Æolus*; R. D. Jameson to the *Eclipse*; G. R. MacMahon to the *Leander*; R. S. Bernard to the *Calypso*; F. Fedarb to the *Doris*; and E. R. Grazebrook to the *Arrogant*. Surgeons: F. R Featherstone to the *Renown*; G. Ross to the *Terrible*; C. J. Boucher to the *Woodlark*; M. T. Mate and G. H. S. Milln to the *Vivid*; J. E. Johnston to the *Arrogant*; J. H. Fergusson to the *Cambridge*, for the *Theseus*; A. G. Eastment to the *President*, for three months' course of hospital study; L. M. Morris to the *Impregnable*; B. Pick to the *Terrible*; A. C. W. Newport to the *Victory*; R. R. Fasson and W. G. M. Anderson to the *Leander*; A. Woollcombe to the *Psyche*; J. G. Peebles to the *Pandora*; J. St. J. Murphy to the *Eclipse*; and W. P. Walker to the *Racer*, for Osborne sick quarters.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel W. J Baker has been appointed officer in charge of the Military Hospital, Arthur Hill, Ireland. Captain T. J. Crean, V.C., has been appointed for duty with the troops of the London district. Captain W. M. Power has been transferred from the 6th (Poona) Division to the 5th (Mhow) Division. Brigade Surgeon J. Hector, retired pay, has been permitted to resign his post as medical officer in the London recruiting area. The Army Council has decided to cancel the order directing medical officers returning home at the end of a tour of service abroad to report themselves personally to the Director-General. These officers will in future report themselves to the War Office in writing. Lieutenant-Colonel J. Carmichael will embark for India in October. Captain T. H. M. Clarke, C.M.G., D.S.O., has been appointed for service in India (Eastern command).

Lieutenant D. D. Paton resigns his commission. Lieutenant-Colonel Arthur de C. Scanlan retires on retired pay.

The undermentioned gentlemen have been appointed Lieutenants on probation:—John Allan Anderson, Cuthbert Garrard Browne, Hugh Godwin Sherren, Henry Horace Andrews Emerson, Wallace Benson, Rowland Philip Lewis, George Edward Ferguson, James Herries Graham, Charles Ernest White Spinner Fawcett, Thomas Scatchard, Ronald Anderson Bryden, Arthur Edmund Stewart Irvine, Thomas Betteswortb Moriarty, Alexander Macgregor Rose, Edward Lawton Moss, Edward Guy Anthonisz, Griffith Henry Rees, Vivian Hood Symons, Walter John Weston, Mortimer John Cromie, Percy Farrant, Albert Edward Francis Hastings, George William Webb Ware, Michael Balfour Hutchison Ritchie, James Stuart Dunne, William McConaghy, Francis Cornelius Sampson, Charles Francis White, Cecil John Wyatt, Wilfrid Cowan Nimmo, Edmund Thurlow Potts, Michael Keane, Arthur Drought O'Carroll, Robertson Stewart Smyth, Arthur James Arch, Thomas Somers Blackwell, Harold Edgar Priestley, Alan Cunliffe Vidal, Philip Janvrin Marett, and Hugh Stewart.

The undermentioned lieutenants are seconded under the provisions of Article 349, Pay Warrant: Charles G. Browne, Percy Farrant, Cecil J. Wyatt, and Robertson S. Smyth.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Northern Command: Leeds Companies: Lieutenant A. E. L. Wear to be Captain.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain J. H. Stacy to be Surgeon-Major. Surgeon-Lieutenant-Colonel E. L. Freer, having resigned his commission in the Volunteers, ceases to belong to the Army Medical Reserve of Officers.

IMPERIAL YEOMANRY.

Pembroke: Surgeon-Lieutenant J. Wilson to be Surgeon-Captain.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 2nd Middlesex: Surgeon-Captain and Honorary Surgeon-Major (Honorary Captain in the Army) A. Thorne to be Surgeon-Major.

Rifle: 2nd Volunteer Battalion the Durham Light Infantry: Surgeon-Lieutenant W. Bratton resigns his commission. 2nd Volunteer Battalion the Hampshire Regiment: Surgeon-Major (Surgeon-Lieutenant-Colonel, Army Medical Reserve of Officers) A. B. Wade to be Surgeon-Lieutenant-Colonel. 5th Volunteer Battalion the South Wales Borderers: Surgeon-Captain J. R. I. Raywood resigns his commission. 1st (Brecknockshire) Volunteer Battalion the South Wales Borderers: Surgeon-Captain D. Thomas to be Surgeon-Major. 1st (Exeter and South Devon) Volunteer Battalion the Devonshire Regiment: Surgeon-Lieutenant J. S. S. Perkins to be Surgeon-Captain. 1st Surrey (South London): Surgeon-Captain W. A. Atkinson to be Surgeon-Major.

THE AUSTRALIAN FORCES IN SOUTH AFRICA.

The following medical officers of the Australian military forces are granted temporary rank in the army whilst serving in South Africa:—To be Major: Andrew Honman, 2nd Contingent Victorian Mounted Rifles; and Walter Blake Nisbet, 4th Queensland Imperial Bushmen. To be Captain: James de Burgh Griffiths, 3rd Victorian (or Bushmen's) Contingent; Alfred Hobart Sturdee, 4th Victorian Contingent (Australian Imperial Regiment); Herbert Russell Nolan, 2nd Queensland Mounted Infantry; Albert Theophilus Duka, 3rd Queensland Mounted Infantry; Harold John Hutchens, 5th Queensland Imperial Bushmen; Edward Reginald Row, 6th Queensland Imperial Bushmen; John Tresselian Toll, 1st Contingent South Australian Infantry; George Frederick McWilliams, 1st West Australian Contingent; John Mitchell Young Stewart, 2nd Western Australian Contingent; Frederick John Ingoldby, 3rd Western Australian Contingent; Walter Gibson, 4th Western Australian Contingent; Joseph Ignatius Flynn, 5th West Australian Contingent; and Frederick Bentley Reid, 6th West Australian Contingent. To be Lieutenant: James Harold Patterson, 5th Contingent Victorian Mounted Rifles; Francis Charles Douglas, 3rd Contingent South Australian Bushmen: and Charles Mattei, 2nd Tasmanian Contingent.

DEATHS IN THE SERVICES.

Brigade Surgeon-Lieutenant-Colonel Mathew Moriarty Gallwey, late Royal Army Medical Corps, on August 30th, at 3, Suffolk-place, Pall Mall, London, S.W., aged 63 years. He entered the service as assistant surgeon in October, 1867, was promoted surgeon in March, 1873, surgeon-major in October, 1879, lieutenant-colonel in October, 1887, and brigade-surgeon-lieutenant-colonel in August, 1893, retiring in August, 1897.

AMBULANCE DOGS.

At the approaching review of volunteers in Edinburgh the ambulance service will include six dogs, trained by Major Richardson of Panbride, Carnoustie, for ambulance work in time of war. These animals have taken part in military manœuvres during the past two years. Last year they were at Stobs, and this year they were tried on several occasions with both the regulars and the volunteers at Buddon and Barry camps, and a few weeks ago they were in use in manœuvres in the South of England.

THE LATE WAR IN THE FAR EAST.

With the *signing* of the treaty of peace by the Russian and Japanese plenipotentiaries one of the biggest and most remarkable wars on record becomes a thing of the past. It is happily not for us to criticise the terms of the treaty or to dwell upon the political results which may be expected to follow. It is sufficient to say that, from a humanitarian point of view, the treaty puts an end to an enormous sacrifice of life. The history of the war in its medical and sanitary, as well as in its military, aspects has yet to be written. Meanwhile the main facts connected with its history—from the causes which gave rise to it and the momentous events which characterised its course up to the final act of signing the treaty which put a stop to it—are sufficiently well known. These facts speak for themselves and we cannot refrain from calling attention to them on account of the contrast exhibited between the very dignified but modest tone adopted by the Mikado in his telegram to President Roosevelt in appreciation of the latter's services and that shown by the Czar in the nature and tone of his address to the Russian army under General Linievitch.

The First Commissioner of Works, &c., with the concurrence of the Lords Commissioners of His Majesty's Treasury, has appointed Surgeon-Lieutenant-Colonel Charles Randolph Kilkelly, C.M.G., late Grenadier Guards, to be House Governor and Medical Superintendent of Osborne as from July 4th last. The First Commissioner of Works, &c., has appointed Dr. Edgar Hoffmeister a member of the consulting staff of Osborne.

Mr. M. F. Ellis, of Northern Nigeria, is mentioned in despatches from Colonel Lugard to the War Office in connexion with the expedition in West Africa. Mr. Ellis was one of the medical staff attached to the expedition.

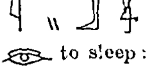
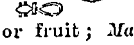
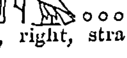
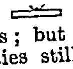
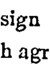
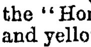
Correspondence.

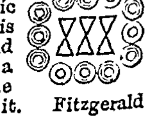
"Audi alteram partem."

PYGMIES.

To the Editors of THE LANCET.

SIRS,—Dr. G. Elliot Smith's "Notes on African Pygmies" in THE LANCET *of* August 12th, p. 425, is a most interesting and important contribution to our knowledge of these primitive little "earth men" and for those who take an interest in the origin of the human race, and I am pleased to see that his accurate measurements correspond with those I made in a "superficial" way and published in a short article, "A Study of the Pygmies," in the *Standard* of July 7th last. There are, however, one or two points that Dr. Smith has not touched upon but which, to gain an accurate idea of how much these little people are connected with the development of the human race, it is very important to know.

I have seen it stated that Sir Harry Johnston says these pygmies have no language of their own but all they speak are words that they have derived from surrounding tribes. I cannot agree with this; on the contrary, from an interview I have had with them I came to the conclusion that they have undoubtedly a monosyllabic language (they may also have acquired other words) and that this language was the first language of man, and that other tribes who have the same words have acquired the same from them. The proof of this lies in the old hieroglyphics of Egypt. Take some of the words I have already learnt and deciphered, as, for example[1], *mu a mai* water; *O-be* is *ānb*  to dance or to rejoice; *A-do-da* is *Ā x* or *z a*  to sleep: *Bacchate* is *baaq*  grain or fruit; *Massouri* is *Maāu*  good, right, straight, to do well, and many others; but the above are sufficient to show that these pygmies still use the first and oldest words that were to express in articulate form and sound their meaning of things—in what we call language. There is no doubt in my mind that the pygmy was the first man developed from the Pithecanthropos erectus or some form of this; probably the original was nearer allied than the present form of pygmies in London. The remains of this primitive race we find all over the world; from the sources of the Nile they spread north, south, east, and west over the world. The Veddas of Ceylon, the earliest race in Japan that the Anu drove out and exterminated, the earliest race in Australia before the "present aborigines," and the earliest race in Mexico—we find all the same. That these pygmies should have learnt the words and language that they still use from the ancient Egyptians is not conceivable, or could there be any argument to that, except that some remnant of the ancient Egyptians were driven south and had degenerated from a comparatively high state of civilisation to a prognathous type of pygmy and against such an argument their "sacred ceremonies" as they call them—of which their dance is a part—would be conclusive. When I drew the oldest hieroglyphic sign for Amsu  they recognised it immediately. (Dr. Smith agrees with all other authorities in stating how readily they recognise picture signs and draw them themselves and at the same time stating that the negroes do not.) All authorities have hitherto stated that they have no religious ceremonies; this is not correct, because when they danced at the Hippodrome in London they took off their ordinary headdress (a bunch of feathers or that to represent the same) and put on the representation of the "Horus lock," also the panther's skin with the tale hanging down behind, and they told me that this was part of their "sacred ceremonies." That they recognise the most ancient sign for Amsu or Horus I (which I drew and asked the chief Bohani if he knew what it was; he smiled and asked one standing by him to tell me; he pointed to his chief and spoke his name—that is him) is very important to Egyptologists and antiquarians, because it is the first sign used by primitive man as the chief or great one and it was used as the sign for the chief of the Nomes and is found depicted on the oldest Australian boomerangs and on the ivory tablets found in the tomb at Naquada, and I have found the same sign in other parts of the world on stones of the neolithic period. This sign, then, would have originated with the pygmies as the sign of their chief or their great one, and as evolution advanced we find that this sign was still used and carried on by the Nilotic negroes and used in the Totemic ceremonies. When the next exodus of men and women took place from this centre (Nile Valley) we find that they still carried and used this sign, but in a higher sense, until in the time of the predynastic Egyptians and the dynastic Egyptians it had then assumed the sign of Amsu or Horis I risen. The oldest god of all in Egypt was Bes , as is well shown in Budge's last book, "The Gods of the Egyptians," vol. ii., p. 286. And no one seeing this and the pygmies, even if he was not an Egyptologist, would fail to identify the two in form, figure, and dress. Bes here has the same type of face as the pygmies. The yellow plume of feathers (*La-gou-ma*) is worn on the head and exchanged for the "Horus lock" during the "sacred ceremonies," the green and yellow "dress" are also worn and the leopard skin with the tail hanging down behind (peculiar to the land of Punt). Bes therefore, who was afterwards represented as a type of Horus, was their "Chief of the Nomes," and it was from these pygmies that the first mythology sprang, and all has been brought on, added to, and made use of in the various types from the earliest myths to astronomical, stellar, lunar, and solar mythology, and finally the eschatology which we know so well. Maspero says: "It [the Land of the Shades beyond Punt] was inhabited by the Dangas, tribes of half savage dwarfs, whose grotesque faces and wild gestures reminded the Egyptians of the god Bes—*none knew better than they the dance of the god—that to which Bes gave way in his merry moments.*" The "Land of the Shades," as Maspero calls it, was the land of the spirits or Khui land; this was first mapped out on the celestial heavens and then in the lakes at the head of the Nile; and the hieroglyphic for the "Khui land," "a region of Amentu," Land of the Spirits or Gods, represented by six triangles with their apices joined and surrounded by concentric circles (three one way and three opposite) is found all over the world—in Australia and North America and in Ireland—and it is a significant fact that when I drew it the pygmies at the Hippodrome recognised it.



Fitzgerald

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[1] These words are expressed phonetically, and as one cannot get the proper sound in English French is used.

Marrott also found it on the bodies, tattoed, of the West African negroes who belonged to the secret tribal societies. Dr. Smith noticed, I see, as well as myself, that only the chief was circumcised—an important and interesting fact connected with the "sacred ceremonies." As regards the two women not menstruating during the period they were under observation by Dr. Smith, this may be explained by the fact that one woman was past the climacteric period and the other, Kuarhe, was pregnant.

That the "Bushman" of South Africa is an offshoot and nearly allied to these pygmies is confirmed not only by the steatopygous condition and appearance of the younger woman but by other points—viz., the hair is the same character—"pepper-corns"—the "labium" is the same character in form, the large size of their teeth, their weapons are the same, and many other points. Their "sacred ceremonies" correspond—it is very difficult to get to the original rites of these; we must remember that all native tribes guard most jealously anything pertaining to their sacred ceremonies and often pretend not to understand. Spence and Gillam have proved this perhaps more than any other men in regard to the Australian aborigines. Maspero and other Egyptologists will not find the key to unlock the door of the past until they study and understand the primordial, then only shall they come to the truth, and find the alphabet so plainly written that they will wonder why they did not read what is written so plainly, that man originated in Africa at the sources of, and along the banks of, the Nile. The original, these little pygmies, followed by the Masābe negro, the Nilotic negro, and an evolution gradually taking place from this centre and various migrations going out to inhabit the world, each exodus carrying with them all that had been learnt up to that time,—when this is understood then the history of the past will become an open book. I have not retraversed Dr. Smith's able article and my own in the *Standard*, as these can be referred to by any of your readers who may feel interested in the subject, one which requires a large volume to set forth all one knows and which I hope to publish soon, as it is nearly completed.

I am, Sirs, yours faithfully,
ALBERT CHURCHWARD, M D. Brux., M.R.C.P. Edin., M.R.C.S. Eng.

Sept. 2nd, 1905.

PS.—In line 2 of the hieroglyph paragraph commencing "to dance" "is *Āx* or *za*" should read "is *āxa* or *āza*."

IRRATIONAL TREATMENT OF THE SEVERELY INJURED.

To the Editors of THE LANCET.

SIRS,—It is almost an every-day occurrence to find in the daily press a record of some mishap in which the victim is severely crushed or mangled. The account describes how a medical man was fetched who ordered immediate removal of the patient to the hospital. At the inquest the house surgeon reports that the patient was admitted in a state of collapse, from which he never rallied, and died a few hours later. In these cases the post-mortem examination frequently demonstrates injuries which are not incompatible with survival of the patient. The error of moving a man in a state of collapse a long distance is as frequent as it is inexcusable. If a patient is in a state of collapse the most certain method of diminishing or obliterating any chance he may have of recovery is to move him, often in a jolting, uncovered conveyance, a long distance. His destination, it is true, may be the hospital but that does not alter the fact that a patient, already nearly dead, has had his condition aggravated and his chances of recovery minimised by being unnecessarily moved about.

While it is inadvisable to leave a severely injured man in a gutter or open field, his removal to the nearest place of shelter, usually a distance of only a few yards, is all that is necessary or justifiable. Here, under the influence of stimulants and warmth, he will recover from the shock, if such recovery is compatible with his injuries, and later may, if necessary, be removed to hospital. With the possible exception of cases of internal hæmorrhage or injury to internal organs, conditions which are frequently combined or indistinguishable, the immediate treatment of a severely injured patient can nearly always be summarised, as arrest of hæmorrhage, rest at or near the scene of the accident, warmth, stimulants, and saline solution injected either into the rectum or into a vein or into the subcutaneous tissues, and if pain should be a marked feature hypodermic injection of morphine. A variation of the newspaper account of the inquest is as follows. "The house surgeon stated that the deceased was admitted in a state of collapse, the crushed limbs were at once amputated, but the patient never rallied and died the same evening."

Very few severely injured patients survive the extra shock produced by immediate removal to hospital followed at once by an operation under an anæsthetic. This raises the question of the treatment of accident cases brought while in a state of collapse to a hospital. The fact of a limb being crushed beyond hope of recovery does not justify its immediate removal. The retention for some hours or even a day of a mangled limb will not kill the patient but its removal plus the administration of an anæsthetic while the patient is in a state of collapse is apt to be the proverbial last straw. The immediate treatment of a patient who is brought collapsed to a hospital should, as a rule, be limited to combating the collapse, immediate operation being reserved for cases such as those with internal hæmorrhage which is still active, in which immediate operation is really essential. The removal of mangled portions of a patient who is in a state of collapse may be operative but cannot by the wildest stretch of imagination be justly described as surgical.

I am, Sirs, yours faithfully,
C. HAMILTON WHITEFORD.

Plymouth, August 29th, 1905.

THE TECHNIQUE OF THE EXAMINATION OF SPUTUM FOR TUBERCLE BACILLI.

To the Editors of THE LANCET.

SIRS,—I quite agree with Mr. C. G. Higginson in his article upon the subject of the examination of sputum. In all cases where there is expectoration such an examination ought to be as much a part of the routine examination of the case as auscultation or percussion. We are all fallible, but I am sure from cases which have come under my notice that some mistakes which have entailed the most terrible distress might have been avoided if the sputum had been examined. Looking back on my own experience I can quite understand that the objection to this necessary examination, which ought to be undertaken in all such cases before one can make a diagnosis or dare to attempt a prognosis, is that it takes too much time to make and that it is not always convenient to send the sputum to be examined besides costing money. Encouraged by Mr. Higginson's words I venture to describe a technique begun in the Pathological Laboratory at Heidelberg under my revered master the late Professor Arnold and perfected by practice and the helpful hints of other workers. I do so because to many some parts of it may be new, and one very minor detail I believe to be my very own! It has also the advantage of quickness, seeing that by following the routine carefully I can complete the whole investigation, from taking the lid off the sputum pot to seeing the bacilli under the microscope, within ten minutes. Therefore when a patient comes to me coughing and he can give me a piece of phlegm, as patients generally can, I make the examination whilst he (or she) is slowly putting on his clothes and resting a few minutes after the exertion. The presence of the bacilli enables one to speak definitely, whilst their absence merely makes one ask for the first piece of phlegm brought up in the morning, according to the usual rule. That, however, occurs much less often than one would think; more seldom even does one have to reverse the verdict through the discovery of bacilli in the second or even third specimen of phlegm.

In one of my consulting-room windows stands a small table on which are the various instruments and materials for the examination of sputa, blood, and urine. For the examination of the sputum for tubercle bacilli I have: 1. A small microscope with a Zeiss six-millimetre apochromatic objective and a × 10 eyepiece, or a Watson one sixth of an inch holostigmat objective with the same eyepiece, or a Swift one-eighth of an inch objective with a No. 3 eyepiece. An oil immersion lens takes too much time and is quite unnecessary. 2. Clean glass slips. I use Scrubb's cloudy ammonia to clean them; much depends on this. 3. Thin cover-glasses that have been cleaned by dropping into strong nitric or sulphuric acid, washed in running water and stored in strong alcohol smelling of ammonia. 4. Spirit lamp. 5. Forceps. 6. Scissors. 7. Silk handkerchief and piece of soft chamois leather. 8. Carbol-fuchsin solution kept in a bottle with rubber cork, in which a small glass filter is fitted kept supplied with filter paper. 9. Löffler's blue in a drop-bottle. 10. Vaseline in a bottle with a rubber cork, with a glass rod thrust through it. 11. Bottle with cedar-oil or Canada balsam dissolved in xylol. 12 Beaker containing clean water. 13. Beaker containing 20 per cent. solution of sulphuric acid. 14. Beaker of clean water. 15. Matches. With these, each in its own place, on the table and the sputum (if in a bottle or freshly coughed up) in a black vulcanite dish such as photographers use for a quarter-plate developing dish before one: 1. Light the spirit lamp and keep the match used. 2. Pick out an opaque piece of sputum with the forceps and sever it from the mass with the scissors. The black dish shows up small opaque spots in the mass of muco-pus and thus saves useless labour in making films in which no bacilli are likely to be present. This point is very necessary to success. 3. Place this in the middle of one glass slip and pressing the surface of the distal third of another slip carefully upon it so as to flatten it well out slowly slide the upper slip off the lower, keeping the surfaces carefully in contact. When this is properly done and if the slips are clean a beautifully thin film will be left across the centre third of the lower slide. As in making blood films this is of great importance and must be learned. 4. Lean the slide up to dry whilst you are (*a*) placing the other slip in a bowl of disinfectant that always stands handy; (*b*) holding the forceps in the flame whilst you count ten slowly; and (*c*) doing ditto with the scissors, afterwards wiping them clean with soft paper that is duly burnt. Should the film not be quite dry (it depends on the state of the atmosphere once you have learned to make a film properly without little excrescences) hold the slide, film side uppermost, six inches above the flame and wave slowly backwards and forwards until the film is dry. 5. Hold the slide, film uppermost, in the flame whilst you count ten slowly. 6. An eighth of an inch from the film on either side of it draw a line with the glass rod dipped in vaseline. This leaves a ridge of vaseline on either side of the film and forms a dam when (7) some carbol-fuchsin solution is dropped through the filter fitted with filter paper. Put on plenty as the vaseline ridges will prevent it running all over the glass slip on to your fingers (it then frightens the patients) and your clothes (it then annoys you). 8. Hold the slide six inches above the flame until the vaseline melts and the stain smokes. The vaseline acts as an indicator and prevents the solution being overheated, which I have proved is bad for staining purposes. 9. Lay the slide thus heated down on the table for four minutes by the watch. Two minutes I have found quite sufficient but let it have four. While waiting take the cover-glass out of the alcohol and polish it with a handkerchief or leather. Lean it up in a fixed spot, for it is sometimes hard to find cover-glasses when their location is changed every time and there is no time to look for it. 10. The four minutes being up dip the slide into the beaker of water, waving it backwards and forwards three times. 11. Dip it into the sulphuric acid solution, doing the same, then back into the water. Now if points of bright colour appear dip it again into the sulphuric acid. In fact, the film must go backwards and forwards between the two beakers until the film has a uniform greyish-pinkish colour. Experience has shown me that there is little danger of decolourising the bacilli with 20 per cent. solution of sulphuric acid unless the slide be kept continuously in that solution over eight minutes, whilst our process ought not to take one minute. 12. Drop Löffler's blue on the film until it is quite covered, then without delay dip the slide into the last beaker of water. I find that half a second is enough to stain and longer makes the blue staining too pronounced. After waving the slide in the water backwards and forwards three times take it out and with the handkerchief wipe the slide dry, removing the vaseline at the same time. 13. Dry off the water with fluffless blotting paper and wave the slide to and fro six inches above the flame. It quickly dries. 14. Drop a tiny drop of cedar oil in the centre of the dry film, lay down the cover-glass upon it, and press gently with the butt end of the match used for lighting the spirit lamp. 15. Place on the stage of the microscope, which you have put in readiness before you whilst the film is finally drying (see 13), focus with the eye to the eyepiece (the proper way and should be learned), and before the tenth minute expires you ought to see (if they be there) dark red rods on a pale blue ground.

The book I always keep handy is Dr. W. d'E. Emery's "Bacteriological Diagnosis." The staining solutions are made from Burroughs and Wellcome's tabloids for the purpose, but the only "Gram" I have been really successful with is Martindale's; from him also I got the bottle with the filter in the cork and vaseline bottle—really for hanging-drop work. I mention these things as so much depends upon the stains and Dr. Emery makes the pursuit a fascinating one. Some may think a Zeiss apochromatic six millimetres with × 10 eyepiece much too weak. I tested the matter by showing my little girl of 11 years a film prepared as above with that magnifying power and she described the little rods on a blue ground exactly the first time.

I am, Sirs, yours faithfully,

D. ANDERSON-BERRY, M.D. Edin., F.R S. Edin.

St. Leonards-on-Sea, Sept. 1st, 1905.

To the Editors of THE LANCET.

SIRS,—I have read with interest the article by Mr. Higginson on the examination of sputum in THE LANCET of August 26th (p. 600), together with your note on the same and should like to make one or two comments thereon. I find that a very thin film of sputum is of less service than a moderately thick one, especially in those cases where the number of tubercle bacilli is small, as there is more chance of finding them in a thicker layer than in a thin one.

I prepare my films by squeezing a small piece of sputum between two slides as they are more easily handled and less easily broken than cover-slips. Then as regards reagents, I keep them all, except carbol-fuchsin, in short, wide-mouth bottles, so that the slide can be dipped into the solution without troubling to pour any out. This plan was used by the late Dr. A. A. Kanthack and is, I think, cleaner and less wasteful than any other. Where a tap is not available water can be employed in the same manner and frequently changed. I think that the carbol-fuchsin solution wants frequent filtering. I quite agree that decolourising and counter-staining simultaneously is a mistake.

On the whole Mr. Higginson's article should prove of value, because it gives exact details of a process which, though apparently simple, is often a failure from want of knowledge of detail.

I am, Sirs, yours faithfully,

GEORGE A. CRACE-CALVERT.

Vale of Clwyd Sanatorium, Ruthin, North Wales, August 30th, 1905.

PYELONEPHRITIS IN PREGNANCY.

To the Editors of THE LANCET.

SIRS,—I was much interested by the annotation which appeared in THE LANCET of August 26th on the subject of pyelonephritis in pregnancy, my attention being particularly drawn to it by the occurrence of one such case in my practice. The patient, aged 34 years, a primipara, from whom a vesicular mole had been removed one year previously, was delivered by forceps on August 1st of a living child after a somewhat difficult labour owing to pelvic contraction. I sutured a complete tear of the perineum which various circumstances had rendered unavoidable and during the next four days retention necessitated the regular use of the catheter. In spite of strict aseptic precautions a mild cystitis, characterised by hypogastric pain and tenderness and by stale, turbid, faintly acid urine, was noticed. There was no rise in temperature or acceleration of pulse, which both remained normal throughout, and the symptoms promptly yielded to salol, alkalies, and hyoscyamus. On August 24th, four days after the patient had been allowed up, she complained of headache, giddiness, great muscular weakness, and refused food. (Her appetite had hitherto been excellent.) When I saw her she looked weak and tremulous, the face was puffy, and the skin was harsh and dry. The temperature was 102·4° F.; there was severe pain in the left loin radiating down to the hypogastrium, also tenderness on deep palpation. There was no history of shivering. Micturition was frequent; the urine was dark, scanty, acid in reaction, and contained a large trace of albumin. The patient was ordered back to bed, placed on a milk diet, and salol and alkalies were administered. The pain and tenderness soon diminished. The temperature gradually came down, the evening record becoming normal five days later. At the same time the urine increased in quantity, the amount of albumin present was markedly less, and a careful examination failed to reveal casts or epithelial cells which had been found at the onset.

The renal symptoms noticed on August 24th can scarcely have been due to an ascending infection from the lower urinary apparatus, since the very mild cystitis had cleared up by the eighth day. Moreover, I believe cystitis to be not infrequently connected with wounds of the rectal mucous membrane. Neither can the events be attributed to sepsis, since the rent healed practically by first intention and no untoward symptoms were manifested during the whole course of the case till August 24th. Was the (!) pyelonephritis possibly due to an infection by bacillus coli invading a ureter injured by pressure?

I am, Sirs, yours faithfully,
V. A. CHATELAIN.
Goodmayes, Essex, Sept. 2nd, 1905.

A MOTILE ELEMENT RESEMBLING AMŒBA PROTEUS IN THE PRIMARY AND SECONDARY LESIONS OF SYPHILIS.

To the Editors of THE LANCET.

SIRS,—In order to see this element in an active state it is essential that the patient shall not have taken mercury, otherwise the motility, the most distinctive feature of the element, will be inhibited. The observations were made on excised primary chancres and secondary papules.

The chancres and papules are placed immediately after excision (under a general anæsthetic) in sterile normal saline solution. After two hours in this solution scrapings are made with the edge of a sharp knife from the deeper portions of the chancre, the more superficial surface epithelium being first removed and rejected. The deeper or cut surface of the papule is similarly scraped and the scrapings are suspended in a drop of sterile normal saline solution tinted with neutral red. The hanging drop preparation is examined on a cold stage. Small naked masses of protoplasm varying in size, unstained, of a greenish hue, with finely granular contents and without apparent nucleus, will be seen. On watching these, very active movements, such as the putting out of pseudopodia, rapid general alteration in contour and streaming of the protoplasm, will be readily observed. From two to five hours after excision of the syphilitic lesions all movement ceases and cannot be restarted by means of raising the temperature of these elements to 37° C. This is a preliminary communication.

We are, Sirs, yours faithfully,
T. P. BEDDOES, F.R.C.S. Eng.
W. E. DE KORTÉ, M.B. Lond.
The Bacteriological Laboratory, King's College, Sept. 2nd, 1905.

THE HONOUR OF THE MEDICAL PROFESSION.

To the Editors of THE LANCET.

SIRS,—Some time ago my attention was directed to the prospectus of the Bucci Medicine Syndicate, in which I was described as chairman-director. As the use of my name was entirely unauthorised and I had had no previous knowledge of the prospectus and had never had the remotest connexion with the concern I immediately instructed my solicitor, Mr. Sidney Newman, to deal with the question, with the result that two abject apologies were at once tendered by the proprietors of the business and an assurance proffered that the prospectus had been circulated privately only and to a most limited degree and that it had been forthwith entirely withdrawn. Endless inquiries failed to disprove these statements and to this date I have never heard of nor come across a copy of the document referred to except the single copy supplied by my informant.

Though my full identity is given on the circular, I have never in any form received any communication in this connexion. Neither comment nor complaint nor inquiry either from friends or critics has reached me and there is no evidence so far to lead me to suppose that this document has either deceived or injured any member of the public or medical profession, myself excepted. In these circumstances I considered it beneath my dignity to notice the matter in the press and I further felt that the issue of a "disclaimer" on my part, on a matter which the public would readily value at its true worth, might be regarded as superfluous and possibly as a disingenuous attempt to spread my name. I had assumed, I think not unnaturally, that my own honour was in my own keeping and that the medical profession would be safeguarded by the various agencies supported for their protection. The British Medical Association, however, has recently given the subject their attention and expressed the opinion that in the interests both of the medical profession and myself the case constituted a cause for a public disclaimer on my part, though they do not appear themselves to have taken any steps in the matter. Accordingly, with the sanction of this recommendation, I willingly put on record my repudiation of this syndicate both on behalf of the medical profession and myself and beg to ask the indulgence of due publicity.

May I be permitted to add that in the light of the explanations I have offered I do not feel that any apology is due from me for the reticent policy I have adopted.

I am, Sirs, yours faithfully,
DENNIS VINRACE.
South Kensington, S.W., August 24th, 1905.

INEBRIETY A DISEASE AND THEREFORE TO BE TREATED BY THE MEDICAL PROFESSION.

To the Editors of THE LANCET.

SIRS,—I have read with interest Mr. W. McAdam Eccles's letter in THE LANCET of August 26th, p. 628, and hail with delight the hope which he holds forth that for the future inebriety will be treated as a disease by those capable of dealing with it. I do not think that blame for the old and bad method of dealing with drunkards has been entirely due to the "clerical satellites" of quacks, as Mr. Eccles seems to suggest. As a member of the clerical profession I for one have felt for years past that we were dealing with a very serious problem in a very flippant and ineffective manner; I do not believe, I repeat, that the clergy should bear the whole brunt of the blame. Medical men themselves have held aloof from a preventive and curative work in which they should have been foremost, and I feel convinced that if any real advance is to be made in curing patients suffering from the disease of intemperance it will be made only on scientific lines by persons scientifically trained.

I am, Sirs, yours faithfully,
RICHARD FREE.
St. Cuthbert's Lodge, Millwall, E., August 31st, 1905.

ACIDURIA AND DEATH FOLLOWING THE ADMINISTRATION OF AN ANÆSTHETIC.

To the Editors of THE LANCET.

SIRS,—The two main facts noted in death following the administration of an anæsthetic appear to be the presence of a fatty liver and acetone in the urine. The question appears to have arisen whether the fat in the liver precedes or follows the administration of the anæsthetic. Dr. Leonard G. Guthrie considers that it precedes the administration and my pathological experience would lead me to believe that his view is the more likely to be correct. A liver considerably enlarged owing to the presence of fat is not uncommonly seen in children after death and is most frequently associated with some condition of sepsis. In such cases the amount of fat present may be very great, though it may be remarked that it is by no means in every case of septicæmia that there is a distinctly fatty liver, nor is it necessarily in the most intense septicæmia that there will be the most fat. It may be interesting to mention that only recently I made a post-mortem examination where it seemed to me that a typical example of a fatty liver occurring in a child was secondary to septic absorption from an abscess in the neck. Not until some hours after having completed the examination did I learn that 24 hours before death the child had been given an anæsthetic. Although I believe that a great excess of fat may appear in the liver very rapidly, it seems to me to be highly improbable that this liver, which extended three inches below the costal margin, had attained its abnormal size in the 24 hours of life which followed the administration of an anæsthetic.

The second point of interest that has been noticed in these cases of delayed death after an anæsthetic is the presence of acetone in the urine, and associated with this condition of the urine one of the most striking symptoms is vomiting. Acetonuria is, it is needless to say, a marked feature of the cases known as "recurrent vomiting" in children. Severe cases of this affection are not very often met with, but milder examples, which Dr. Guthrie speaks of under the popular name of "bilious attacks," are common. It does not seem to me, however, that a fatty liver is necessarily associated with acetonuria and recurrent vomiting in children. Fatal instances of this affection are rare but it has fallen to my lot to perform the necropsy on a case where death occurred. The urine contained acetone but although I did not examine the liver microscopically it was certainly not what could be called a fatty liver. It was not in any degree enlarged and presented no abnormal appearances to the naked eye. But even if it be allowed that microscopical examination may have shown in this case some excess of fat in the liver it seems to me to be difficult to believe that fat in the liver can have anything to do with a disease which lasts for years, as does recurrent vomiting. Not only does it seem to me to be very doubtful whether a fatty liver can play a part in the causation of acetonuria associated with recurrent vomiting, but the question arises whether it is an important factor in the causation of acetonuria, vomiting, and death after the administration of an anæsthetic. That a well-marked fatty liver may be present it is impossible to deny. I have already mentioned a case that has come under my own notice but before great stress is laid upon the presence of a fatty liver one must be sure that in virtually every fatal case the amount of fat in the liver is really definitely above what is commonly present.

I am, Sirs, yours faithfully,

Sept. 3rd, 1905. THEODORE FISHER.

THE SPA TREATMENT OF CIRCULATORY DISORDERS.

To the Editors of THE LANCET.

SIRS,—In his paper on the Spa Treatment of Circulatory Disorders in THE LANCET of August 5th, Dr. L. Williams gives many valuable hints as to the pathology and treatment of these affections but bases his verdict on Nauheim in special on wrong views regarding its climate, the physiological action of its springs, and the methods of treatment used there. I hope to conduce to a correct understanding of the facts by the following statements.

1. *Climate.*—From the end of May till the end of June and September again are the finest times of the season, which lasts from May 1st to Oct. 1st. During these months the temperature is equable, neither excessively hot nor disagreeably cool. September, more especially, is by no means rainy, as Dr. Williams believes, but, on the contrary, is noted for the constancy of fine weather which, in conjunction with the bracing qualities of the air peculiar in these latitudes at the end of summer and beginning of autumn, perhaps renders this month climatically the most invigorating one of the whole year. July and August have hot days here as everywhere in these latitudes but the proximity of the Taunus hills and the prevalence of easterly winds render the nights agreeably cool even then, and rarely does a spell of hot weather last more than a few days without being relieved by a change of weather; these "sudden and decided changes" are a distinct advantage then at this time of the year, whilst at others they are no more pronounced than anywhere else.

2. *Physiological action.*—The theory that the carbonic acid brine baths chiefly act by stimulating the heart to more energetic contractions and increasing blood pressure is antiquated and has been replaced by the theory that the action is chiefly due to lessening of peripheral resistances in the vessels. The fact is that in high blood pressure this is generally lowered by the baths, whilst only cases of abnormally low pressure and loss of arterial tension experience an increase of blood pressure and of vascular tension through the baths. To explain this monistically I have advanced the following theory: As is known, the action of the baths is twofold—(1) local, consisting in dilatation of the capillaries of the skin; this means decrease of peripheral resistance; (2) reflex by stimulation of the cutaneous sensory nerves, the stimulus acting on the centres of the vaso-motor and pneumogastric nerves; this brings about increase of arterial tension with consequent rise of blood pressure and slowing of the heart's action (stimulation of the vagus). In cardiac disorders, however, the diminished velocity of the current of the blood leads to an accumulation of carbonic acid gas in the blood; this, we know from physiology, stimulates the vaso-motor centres in the medulla and brings about arterio-spasm; hence in so many cardiac cases we meet with an excessively high blood pressure. Further, we know from physiology that the velocity of the circulation is the greater in a given section of the vascular system the greater the propulsive power at the beginning of the said section, and the less the resistance at its end be; the capillary dilatation reduces this resistance, thus accelerating the circulation. The acceleration leads to the elimination of the accumulated carbonic acid; this being eliminated the abnormal stimulus on the vaso-motor centre is abolished and consequently blood pressure falls in these cases. The stimulating action of the baths on the vaso-motor system therefore only comes into action so far as to increase an abnormally low tonus towards normal, but not beyond this. And practically this theory is corroborated by our seeing good results from the Nauheim baths in cases of high blood pressure as well as in cases of low blood pressure. The chief effect is to relieve the heart (1) by capillary dilatation in all cases; and (2) by removing arterial spasm in cases where it exists. There is no physiological basis for assuming that the heart is stimulated itself actively to more vigorous contractions. Even the re-establishment of lost arterial tone would not act as a stimulus but as a relief to the heart, because in normal tone the elasticity of the arterial walls constitutes an important driving power and thus the vessels resume their share in propelling the blood which during the stage of lost tension had devolved upon the heart. Only the temperature, therefore, in cool baths throws an initial strain upon the heart and stimulates it to stronger contractions by bringing about contraction of the cutaneous capillaries; but this we entirely command by regulating the temperature at will. Stimulation of the vagus reduces frequency *and force* of the systoles; that of the accelerans cordis increases both. Both centres can be stimulated through reflex from sensitive nerves; but if both be stimulated simultaneously the action of the *vagus prevails.* Digitalis causes slower *and stronger* beats; this latter, therefore can only be due to direct action on the *intra*-cardiac centres, which is all the more probable, as we know that these are the predominating factors in regulating the heart's action. Such action on the cardiac muscle, however, can only be possible either by a chemical substance contained in the blood (as is the case with digitalis) or *perhaps* by electrical stimulation, but not by a stimulus only applied to the surface of the body.

3. "THE *Nauheim method.*"—Baths and exercises, it is true, were originally the only method known at Nauheim of treating cardiac disease. But "tempora mutantur nos et mutamur in illis." There are upwards of 50 physicians now practising at Nauheim, and it would not seem quite illogical to conclude that some of them had the capacity of treating patients on their own lines and of evolving original methods other than those exclusively in vogue formerly. The action of hydro-electrical baths on the circulation was established beyond all doubt as far back as 1883 by Eulenburg by *exact* research and since then by others. I may say that my own recent investigations have led, in conjunction with the light thrown on the subject by former work, preliminarily at least, to an exact definition of the action of baths with the faradic or sinusoïdal alternating current on the circulation. Without any doubt they have the following influences: (1) stimulation of the cutaneous sensory nerves with effect on arterial tone; (2) acceleration of the circulation by rhythmic contractions of the systemic muscles; (3) potent effects on metabolism; and (4) a beneficial effect on the general nervous system. Besides these, the baths have *possibly* a direct action on the vessels and the heart, as they undoubtedly have on other internal organs (intestines, uterus, and bladder).

It would go beyond the scope of a letter to adduce all the physiological facts and practical experiences which help to show that a combination of hydro-electrical methods with the Nauheim baths is *the best* physical treatment for circulatory disorders at the present day. but as this combination took its origin at Nauheim I protest against the "baths and exercises" henceforth being called *the* Nauheim method unless some qualifying words be added. With regard to the exercises, I am, with Professor A. Hoffmann, of opinion that in combination with the baths they are generally contra-indicated.

A word about the Nauheim treatment at other places. There is, of course, no doubt about the possibility of it, but the fact that many different spas on the continent, as well as in England, are making energetic endeavours to gain a reputation in these methods goes to prove the efficacy of them if *judiciously* applied. It should not be forgotten that the different qualities of the Nauheim waters and the balneological technique are necessary to insure the effects. Physical treatment of cardiac disease, whether by mineral baths, by exercises, or by hydro-electrotherapy, or by any combination of these, is, I quite agree with Dr. Williams, not followed by miraculous results, and is in general only indicated in initial stages.

I am, Sirs, yours faithfully,
PAUL C. FRANZE, M.D.

The Electrological and Radiological Institute, Bad Nauheim
(Germany), August 29th, 1905.

RHEUMATISM AND CLIMATE: A QUERY.

To the Editors of THE LANCET.

SIRS,—I shall be grateful if any of your readers will kindly help me with advice. I have been engaged in wide and wild country practice for the last 14 years and have lately suffered more or less from rheumatism and have also been laid up with lumbago and sciatica. The least wetting or even a long tiring day causes slight recurrence of the trouble. I am at present in a damp climate with clay subsoil in the North of England and am afraid I shall have to make a change. For various reasons I require a bracing place and am fond of seaside or health resort practice. I am middle aged. I shall be very glad of suggestions as to the most suitable districts in which to look for a practice where I may have reasonable hope of escaping an insidious foe and at the same time making a living.

I am, Sirs, yours faithfully,
August 29th, 1905. PRACTITIONER.

THE METROPOLITAN ASYLUMS BOARD AND ITS ASSISTANT MEDICAL OFFICERS.

To the Editors of THE LANCET.

SIRS,—We thank Mr. Scovell for his prompt reply to our letter which appeared in THE LANCET of August 26th and are pleased to note that he considered the question one of sufficient importance to occupy the early attention of the Board. From the opinions which he has expressed we are forced to believe that the Board can neither be fully acquainted with the position of its medical officers nor with the working of the rules by which its institutions are governed. We trust that a thorough inquiry will place these matters in a true light, and until such inquiry has been made the object of our resigning will not have been attained and the position of the assistant medical officers under the Metropolitan Asylums Board will continue to be an extremely unsatisfactory one.

We are, Sirs, yours faithfully,
FRANCIS R. BARWELL.
GERARD A. HERKLOTS.
H. P. KENNARD.

Darenth Asylum, Dartford, Kent,
Sept. 5th, 1905.

NEW HOSPITAL FOR THE ROYAL CORNWALL SAILORS' HOME AT FALMOUTH.—A few years ago Sir Joseph Fayrer and other members of the medical profession urged on the subscribers of the Royal Cornwall Sailors' Home at Falmouth the necessity of providing a new hospital for that institution. The old building has been in existence about 50 years and it was quite impossible to bring it up to modern requirements. It was consequently decided to erect a new hospital and subscriptions were invited for that purpose. On August 24th Vice-Admiral Sir Lewis Beaumont, commanding Plymouth naval station, laid the foundation stone of the new building in the presence of a large assembly. The hospital will stand in a large garden and will consist of a men's ward for six beds, with two small wards for one bed and two beds respectively. The building will also contain an operating theatre, convalescent ward, nurses' rooms, and the usual offices. The estimated cost is £2500, of which about £1300 are still required.

THE SALE OR PURCHASE OF A MEDICAL PRACTICE.

(FROM A LEGAL CONTRIBUTOR.)

ALTHOUGH in the majority of instances the sale or purchase of a medical practice is a plain and straightforward transaction, cases sometimes occur which tend to put the young practitioner who is unfamiliar with the ways of the world upon his guard. Moreover, even in cases where everything is fair and above board, one who is unaccustomed to the perusal of legal documents may set his hand to some deed of which he does not understand the true meaning. In these circumstances it is apprehended that our readers may value a few notes upon the subject of agreements for the sale and purchase of a medical practice.

Advantages of an agreement in writing.—If a practice is to be sold the terms of the sale should be reduced into writing and the agreement executed with the least possible delay. In the case of May *v.* Thomson ((1882) 20 Ch. D. 705), the plaintiff, who wished to sell a medical practice with the lease of the house where it was carried on, placed it on the books of a medical agent. This led to negotiations with the defendant. The premiums asked for the practice and for the lease were stated in a letter from the agent to the defendant, but no time for completing the purchase was mentioned. The defendant replied in a letter to the agent accepting the terms offered and adding that he should be ready to pay the deposit money "on receipt of corrected agreement," and at the same time he wrote to the plaintiff personally, also accepting the terms offered and adding—"I shall trust you to give me the best introduction you can during three months and afterwards if necessary." The plaintiff replied thanking the defendant for acceding to his terms and saying that "it would be his aim as well as his duty to give him an effectual introduction to his patients." A formal agreement was drawn up and never signed, and after some further correspondence the defendant refused to complete the purchase. Upon an action being brought by the vendor to obtain an order for specific performance, the Court of Appeal held that inasmuch as the time for the commencement of the purchase was left uncertain and the stipulation as to three months' introduction was not agreed to, and as the parties contemplated a formal agreement, there was no binding contract between the parties and the action was dismissed.

Perhaps the most satisfactory method of explaining the incidents of a regular transfer of a medical practice is to set out the clauses of a form of agreement which may be signed by the vendor and purchaser, adding such explanatory notes as appear to be necessary. Certain observations of a general nature may first be made.

Ascertainment of the price.—The all-important question, What price is to be paid? must first be satisfactorily determined. The vendor will naturally seek to enhance the value of the practice while the purchaser will seek to decry it, and the basis of agreement will probably be the books which have been kept by the vendor. Both vendor and purchaser should exercise the utmost caution in the use of these books; the vendor because if it should transpire that the books are in any way misleading, or that there has been any *suppressio veri* in connexion with them, unpleasant consequences may follow, and the purchaser because books of account though honestly and accurately kept may nevertheless mislead a person who does not properly understand them.

Let us take for the sake of illustration an extreme case. Suppose the vendor were to produce books which showed gross receipts of £1000 a year for two or three years and the purchaser, relying upon the books, gave a sum of £2000 for the practice and afterwards discovered that the books had been "faked" for the purpose of enhancing the apparent value of the practice. In such a case the whole transaction might be set aside on the ground of fraud. Where, however, the books are honestly kept and the purchaser has been content to rely upon the figures contained in them in arriving at the conclusion that a fair price has been asked, he cannot be heard to complain if he is disappointed with the takings of the practice. For instance, supposing a large part of the takings which were entered in the books were derived from two or three wealthy patients. Suppose these patients had left the district before the sale of the transfer. It is an open question whether the vendor should have disclosed this fact; a right-minded vendor would assuredly do so. Nevertheless the careful purchaser ought to make inquiry with regard to them, for it must not be forgotten that the maxim *caveat emptor* applies to the sale of a practice just as it applies to the sale of wares and merchandise. We have mentioned one pitfall for the unwary; there are many others which may escape the notice of a man who is unaccustomed to books of account. The best advice that can be given is to recommend a would-be purchaser to employ an accountant who is skilled in such matters to audit the books.

Dealings with agents.—The vendor of a practice will usually employ an agent to procure him a purchaser upon the terms that the agent shall have a commission on the purchase price. A few observations as to the rights of an agent may here be made. Commission is payable when the transaction in respect of which it is claimed is a direct though not necessarily an immediate result of the agency (Bowstead's "Law of Principal and Agent," p. 177). So if a practitioner employs an agent to sell his practice, and before the agent introduces a purchaser the practitioner sells the practice by private treaty with a friend, the agent cannot have a commission. But an agent is entitled to his commission if he indirectly introduce a purchaser, as where, for instance, the purchaser gets to know of the practice being for sale through seeing an advertisement inserted in a newspaper by the agent. The agent is also entitled to commission if he introduces a purchaser and the purchaser subsequently goes off through no fault on the part of the agent. So if a practitioner decides to sell his practice and an agent introduces a purchaser who is willing to pay the vendor's price and the vendor then decides not to go further in the matter, in that case the agent is entitled to his commission.

Sale or lease of practitioner's house together with the practice.—In most cases where a practice changes hands the purchaser takes over the vendor's house either by way of purchase or by a lease for years. The fact that there is an agreement to buy or to take a lease is generally referred to in the agreement for the sale of the practice, but the conveyance or indenture of lease should be drawn up in a separate document to be executed at or about the time of the execution of the deed which transfers the practice. It is not proposed to consider the essential terms of a conveyance or lease in this article.

Agreement for the transfer of a practice.—The following are some of the more important clauses which (or variations of which) usually find their way into an agreement between the vendor and purchaser of a practice. Some of the clauses are taken from the Encyclopædia of Forms and Precedents (London: Butterworth and Co.) and others from "The Law of Medical Partnerships, &c." (1895), by Barnard and Stocker. In both of these publications complete forms will be found.

An agreement made the day of 1905. Between A B of No. 19, Raidfern Gardens, in the Borough of Kensington, in the County of London (hereinafter called the vendor), of the one part, and C. D. (hereinafter called the purchaser) of the other part. WHEREAS the vendor has for many years past carried on the profession or practice of a surgeon and apothecary at No 19, Raidfern Gardens aforesaid and is desirous of disposing of th[illegible] thereof And WHEREAS the purchaser is [illegible]ne at or for the price and upon the terms h[illegible] this Indenture witnesseth as follows.

If the purchaser is going to take over the house and surgery as well, either by way of purchase out-and-out or on lease from the vendor, mention is generally made of this fact in an additional recital.

1. *Vendor to make alterations:* The vendor shall within twelve calendar months from the sale hereof carry out and completely finish to the satisfaction of the purchaser the alterations specified in the schedule hereto to all that house and messuage known as No 19, Raidfern Gardens, in the Borough of Kensington, in the County of London, now occupied by the vendor, according to plans and specifications which have already been prepared and have been signed by the vendor and purchaser respectively. The vendor shall also before the day of put the said messuage and the outbuildings belonging thereto into thorough decorative repair to the satisfaction of the vendor.

The period of 12 months referred to in the foregoing paragraph is the period during which, by a covenant to which I shall presently refer, the vendor undertakes to give the purchaser an introduction to the practice. The repairing covenant above set out may be inserted in this agreement although the premises are sold or leased to the purchaser by a separate instrument.

2. *Sale of goodwill.*—The vendor shall sell and the purchaser shall buy the goodwill and interest of the vendor in the practice of a general medical practitioner heretofore carried on by the vendor at No. 1 Raidfern Gardens aforesaid and neighbourhood at the price of £ one half of which shall be paid on the day of and th balance thereof on the day of on which day the purchas shall be completed. [Provided always and it is hereby agreed an declared that nothing in these presents shall have effect to transfer t the purchaser any interest of the vendor in the appointment which h now holds as medical officer to the workhouse [or the friendly society], and provided further that nothing herein containe [illegible] in pursuance of an appointment] [illegible] clause).—In consideratio of the sum of £ as to £ [illegible] part thereof now paid to th vendor by the purchaser by way of deposit and part payment of th purchase money of the said practice (the receipt of which sum o £ the vendor doth hereby acknowledge) and as to £ th residue thereof to be secured and paid in the manner and at the time hereinafter mentioned, the vendor shall assign to the purchaser a from the day of [*here insert day of commencement of introduc tion*] all the goodwill and professional connexion of the vendor of an in the said practice now carried on by the vendor in and around No 19 Raidfern Gardens aforesaid and shall render to the purchaser as far a possible all the patients and customers of the said practice and th purchaser shall buy and acquire the same upon the terms herei mentioned.

Where there are appointments attached to the practice i is well that they should be specifically referred to in th agreement. The vendor cannot guarantee that the purchase shall receive such appointments if the purchaser resign them, and the vendor may desire to keep some of them in hi own hands. Any special arrangement with regard to the should be particularly mentioned in the agreement. With regard to the purchase money it is often more convenient to the purchaser to pay it by instalments. In that case the dates of each individual payment should be specially referred to in the agreement. The form which is now being discussed would only be suitable for the purposes of transferring a practice out and out; it would not be applicable to the taking in of a new partner. An arrangement of that kind would have to be embodied in a very different document.

3. *Assistance and introduction by the vendor.*—As from the date hereof the said practice shall be carried on by the purchaser for his own benefit but in and during a period of *twelve* months from the date hereof the vendor shall assist the purchaser in carrying on such practice [and shall use his best endeavours to secure for the purchaser the appointment of medical officer to the] and shall introduce the purchaser to all the vendor's patients and do all in his power to procure the full benefit of the said practice for the purchaser and to insure his success in carrying on and extending the same

3 (*a*). *Covenant to introduce purchaser*—The vendor shall continue to reside at No 19, Raidfern Gardens aforesaid from to , which period is called the period of introduction, and shall actively assist the purchaser in the conduct of the practice and so far as may be possible and consistent with professional etiquette shall introduce the purchaser to and endeavour to the utmost of the vendor's ability to secure for the purchaser the custom of all such persons as are or have been patients in connexion with the said practice and are still residing in or near No 19, Raidfern Gardens as aforesaid, and the vendor shall use his best endeavours to secure for the purchaser all the public and other medical appointments which the vendor now holds [with the exception hereinbefore mentioned] and which are, with the [illegible] estimated annual value of each such [illegible] schedule hereto, and the vendor shall b[illegible] from the work at the said practice and f[illegible] portion of the period of introduction not exceeding [illegible] days at any time and not exceeding weeks in the aggregate.

Inasmuch as the transfer of the goodwill takes place as from the date of the agreement, any debts due to the practice collected after that date shall belong to the purchaser. So much depends upon the introduction which the vendor gives that a clause is sometimes inserted for the protection of the purchaser if the vendor fails to give a proper introduction Sometimes a purchaser is given an option to terminate the time of introduction by some such clause as the following.—"Provided always that the purchaser shall have the option of terminating the period of introduction at any time on or after the day of on giving the vendor weeks notice in writing of his desire to terminate it."

4 *Remuneration for assistance*—As remuneration for such assistance the purchaser shall pay to the vendor half the net profits derived from the said practice (after deducting all outgoings and expenses in respect of work done) during the said period of twelve months

The term "outgoings" will include the rent of the house and taxes, the cost of purchasing drugs and instruments to be used in the practice, the wages of servants employed in the practice, and the cost of up-keep of horses, carriages, and motors.

5. *Deduction from purchase price if appointment not obtained.*—If the appointments referred to in paragraph 2 (*a*) or 3 hereof shall not be secured for the purchaser within the said period of twelve months the purchaser shall be at liberty to deduct from the balance of the said purchase money an amount equal to double the annual salary now paid in respect of such appointment.

If the purchase price has been calculated upon the basis that certain appointments shall go with the practice and it turns out that the vendor is unable to secure the reversion of these appointments to the purchaser it is only fair that the purchase price should be reduced.

6. *Restrictive covenant.*—The vendor shall not except as aforesaid practise as a physician, surgeon, accoucheur, or general practitioner (unless where he shall be *bona fide* called in to consultation by some other medical man) or as assistant to any medical practitioner within ten miles of No. 19, Raidfern Gardens [or attend any of his past or present patients] for ten years as from the date of these presents.

6 (a). *Restrictive covenant (another form).*—If the purchaser shall duly perform and observe the stipulations of these presents on his part to be performed and observed the vendor shall not at any time for the space of years after the commencement of the period of introduction, except as herein previously provided, exercise or carry on or be directly interested in exercising or carrying on upon his own account or in partnership with or as assistant to any other person the practice, profession, or business of physician, surgeon, accoucheur, or apothecary at any place within miles of No. 19, Raidfern Gardens, and if the vendor shall so practise within the limits aforesaid or in any way violate this provision he shall pay to the purchaser the sum [of £] [or of £ for every month or part of a month during which he shall violate this provision] as ascertained and liquidated damages and not by way of penalty.

The restrictive covenant is one of the most important in e agreement between the vendor and purchaser of a pracce. Without such a covenant being capable of enforcement would be idle for any man to buy a practice. It must, owever, be drawn with some care, for it involves a contract hich is in restraint of trade and is therefore contrary to aw, unless its terms are such as to be reasonably necessary or the protection of the purchaser without depriving the endor of his means of livelihood altogether. For instance, if medical practitioner were to enter into an agreement which revented him practising anywhere for the rest of his life, no ourt would compel him to carry out the agreement. So ong, however, as the covenant is limited either as to time or pace it will be enforced. For instance, a general practitioner in London could not interfere with a Liverpool practitioner, nor could an Irish practice compete with an English practice. It would, however, be reasonable in the case of a sale of a London practice to ask the vendor not to practise within ten miles of the house or within the county of London for a period of ten years. The following rule, which was laid down in the case of Horner *v.* Graves (7 Bing. 735), should be borne in mind: "The restraint must be only such as to afford a fair protection to the interests of the party in favour of whom it is given, and not so large as to interfere with the interests of the public."

The covenant, as expressed in our model clauses, is fairly wide, but questions do sometimes arise as to what constitutes "practising" within the proscribed limit. It would clearly be a breach of the bare covenant "not to practise" to enter into partnership with, or become assistant to, another practitioner. The latter point was decided in the case of Palmer *v.* Mallett ((1887) 36 Ch. D. 40). Assuming there is no proviso to the effect that *boná-fide* consulting practice shall be allowable it is difficult to say whether that class of practice would be regarded as a breach of the general covenant "not to practise." It is clearly safer to insert a special provision relating to consulting practice, for if it is not inserted and the purchaser desired to enforce his strict right it is apprehended that consulting practice might be prohibited. It will be noticed that in Clause 5 the words "or attend any of his past or present patients" are put in brackets. If these words are omitted there will be nothing to prevent the vendor seeing a former patient at some place outside the proscribed area.

7. *Collection of book debts.*—The purchaser shall be at liberty if he thinks fit to collect on behalf of the vendor all outstanding book debts in respect of the said practice up to the date hereof and the vendor shall not within calendar months from the date hereof commence legal or other proceedings for the recovery of any such debts.

Before the purchaser could sue a patient who owed money to the vendor it would be necessary for the vendor to give notice to the patient that he had assigned the debt in question. There need be no formality about this assignment.

8. *Discharge of book debts.*—The vendor shall pay and discharge all debts and liabilities in relation to the said practice subsisting on the day of , and the vendor shall pay and discharge all debts and liabilities which have accrued or been incurred since that date and mutual indemnities shall be given in respect thereof.

Suppose, for instance, the vendor had ordered certain drugs a month before the date of the agreement and the price of these drugs was still due and owing. The above clause would compel the vendor to pay the amount so due. In the absence of a clause in some such form as the above the purchaser might conceivably be held liable at the suit of the person who supplied the drugs.

9. *Books of account to be handed to the purchaser.*—The vendor shall hand over to the purchaser on the termination of period of introduction all the books of account relating to the said practice and such books shall become the property of the purchaser, but he shall permit the vendor, his solicitors, or agents to have access thereto at all reasonable times and to have the temporary use thereof at the purchaser's surgery or at any other place where the vendor may require the production of the same for the purpose of getting in the vendor's outstanding accounts.

10. *Drugs, &c.*—The purchase money hereinbefore mentioned shall include all such bottles, drugs, surgery fixtures, furnishing, and appliances (not being surgical instruments) as shall belong to the vendor and be used for the purposes of the said practice at the date last mentioned and shall not be expended during the period of introduction hereinafter mentioned.

11. *Execution of assignments.*—The vendor shall, if and when called upon by the purchaser, execute all proper assignments and other deeds for carrying this agreement into effect.

The assignments above referred to include the assignments of book debts which will enable a purchaser to sue for their recovery.

STAMPING OUT CONSUMPTION: WHAT THE POST OFFICE HAS DONE IN TEN YEARS.

(From a Correspondent.)

Should there be any doubt in the minds of workmen or their employers as to the possibility of stamping out the disease of consumption from any body of persons in whatever trade by adopting the methods recommended by modern science, that doubt ought to be for ever set at rest by a consideration of the following interesting little table compiled from the Postmaster-General's reports for the last ten years. Time was when the Post Office gave no space to the health of its employés in the annual blue book, but for the past ten years some five or six pages of tables and comments have been included. Contemporaneously with this, and indeed for some years prior to the commencement of this publication, there had been a deal of criticism, necessarily not supported by accurate figures, of the loss from a preventable disease, in such an easily controlled and specially selected community. This at length awakened the postal medical department to its duty in the matter and the figures compiled below will show with what excellent results.

The following table is compiled from figures extracted from the Postmaster General's Report for the year indicated and shows the loss from tuberculous disease among officers under the care of the official medical officer, as recorded in the reports for the years mentioned.

Year.	Staff.	Deaths	Retirements.	Total.	Loss per 1000 living.
1896 ...	62,362	86	67	153	2·4
1897 ...	76,966	72	80	152	1·9
1898 ...	79,121	70	87	157	1·9
1899 ...	82,172	62	83	145	1·8
1900 ...	84,305	53	90	143	1·6
1901 ...	87,242	61	93	154	1·7
1902 ...	91,402	53	119	172	1·8
1903 ...	96,862	52	82	134	1·3
1904 ...	100,762	60	119	179	1·7
1905 ...	118,541	73	123	196	1·7

The first thing that strikes us in glancing at this table is the remarkable decrease in the total loss, which represents, when taken over the 100,000 odd of the staff, a saving of a very large number of lives per annum. Perhaps, however, the cases of retirement do not now so certainly indicate imminent decease as they did ten years ago. For if we look again at the table we shall see a remarkable change in the relation between the number of retirements and the number of deaths. Whereas in 1896 the deaths exceeded by 19 the number of retirements, we notice that for all the remaining years the retirements exceed the deaths, the ratio of excess increasing as the years proceed. This is obviously the result of a deliberate policy to remove the infected persons from the service before death, and does indeed indicate that the employés tainted with consumption are now pensioned in the earlier stages. This policy has two excellent results: it gives the sufferer a better chance of the arrest of his disease and it removes a source of infection from the other employés. The ultimate and beneficent result is the diminution of the total loss as indicated in the final column.

But certain accessory agents have also been operating. First, there has been a good deal of educational literature circulated among the men and women which has resulted in a better appreciation of the value of fresh air, temperance, exercise, and absolute and minute cleanliness in all things. This was especially the case during and after the meeting of the great International Congress in London in 1901. In this year (October, 1901) the Postmaster-General issued, somewhat tardily it must be confessed, a prohibition against spitting. This was followed in 1903 by a lengthy instruction to all his administrative officers as to the proper methods of cleaning and ventilating the offices. Dry dusting was abolished and dry sweeping forbidden. A little later (1904) an exceedingly interesting circular setting forth the conditions of tuberculous infection, the means of prevention, and giving advice to sufferers how to act so that they should not be a danger to others, was printed on foolscap cards and hung in every office. All the new buildings now being erected and all the recently erected ones have been designed with a view to considering these things in the light of the modern knowledge of the disease. The net result has been a reduction of the total loss amounting in some years to nearly 50 per cent.

Such a result is exceedingly gratifying. It is satisfactory to those who first started the agitation for reform in 1895, it is satisfactory to the medical department that yielded to the representations, and it must be exceedingly satisfactory to the Postmaster-General himself. For, in addition to the good which accrues to his own department, he will have the satisfaction of feeling that his department has given a practical demonstration of the effectiveness of preventive measures that should do much to stimulate other large employers of labour and public bodies to do the same. It should also stimulate Lord Stanley to persist in the good work until pulmonary phthisis is as rare in the Post Office as small-pox. Eminent medical men have expressed the opinion that the disease can be practically eradicated from the Post Office. If so it should be done. The movement now afoot for the provision of a postal sanatorium should assist greatly in bringing about this desirable result.

HOMBURG.

THE PROBLEM OF MINERAL WATER HEALTH RESORTS.—WHAT SHOULD, AND WHAT DOES, DETERMINE THEIR POPULARITY.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

PART III.[1]

THE HOMBURG OF THE FUTURE: THE MEDICAL POSSIBILITIES.—THE NEW SPRING.—THE NEW BATHS AND METHODS.—DIET IN THE HOTELS.—EVER-INCREASING FACILITIES FOR THE TREATMENT OF PATIENTS.

Homburg, August, 1905.

As may be gathered from what has already been said, the future of Homburg depends on the manner in which its medical resources are appreciated and rendered available to an ever-increasing number of patients. These advantages have been multiplied notably of late years. The sanitation of the town, as already described, has now been brought up to a high standard of excellence. The efficacy and the usefulness of the waters in the treatment of disease were always admitted by those who were capable of forming an opinion on such a subject. But even in this respect there has been a recent startling and important improvement. Some years ago it was proposed to let a considerable part of the grounds in the park, which is between the Kurhaus and the mineral wells, to the golf club. The architect and antiquarian, Professor L. Jacobi, however, objected. He did not object to golf, but he insisted that the town should reserve the right to dig for water on the grounds, for there was historical evidence to show that the Romans had a valuable well on this site. Consequently a clause to this effect was introduced in the lease of the grounds to the golf club. A few years later the benefits derived from bathing in the mineral waters being more and more appreciated it became necessary to increase the supply of water. Thereupon it was decided to bore on the historical spot. Nothing was known as to the quality of the water likely to be obtained; it was only known that it had been used by the Romans for making salt. After digging to a considerable depth not only was mineral water obtained but it proved to be richer in its mineral constituents than any of the other wells in use. Whereas the most popular water—that of the Elisabeth spring—contains 11·032 grammes of salts in 1000 grammes of water, the new spring contained 14·269. The advantage of the new spring, which in reality is so old a spring that it had fallen into disuse, is that a smaller quantity of water will produce the same effect. Thus, for instance, roughly speaking, it will suffice to take two glasses of the Landgrafenbrunnen, the name given to the new spring, instead of three glasses of the Elisabethenbrunnen. There are consequently less gas absorbed, less distension, and less work for the heart. As it contains a larger quantity of magnesia as well as more salt it has a stronger aperient effect and may be used more advantageously in cases of obstinate constipation and for reducing fat. In this respect it can be placed side by side with the Marienbad waters. Then, as there are no sulphates, it is not so likely to produce depression. Other salt springs which very effectively reduce fat too often cause weakness. On the other hand, the Landgrafenbrunnen is not so easy to absorb and therefore when the patient has a delicate digestion he will have to fall back upon the Elisabethenbrunnen. Here, in any case, are the analyses of these two springs made by Professor Dr. H. Fresenius who is one of the greatest authorities in Germany:—

	In 1000 parts by weight of water.	
	Landgrafen-brunnen 1904.	Elisabethen brunnen 1901.
Sodium chloride (NaCl)	9·878044 ...	7·767251
Potassium ,, (KCl)	0·368389 ...	0·272864
Lithium ,, (LiCl)	0·020748 ...	0·015136
Ammonium chloride (NH_4Cl)	0·002594 ...	0·010648
Calcium ,, ($CaCl_2$)	1·760640 ...	1·281842
Sodium bromide (NaBr)	0·004135 ...	0·002954
Sodium iodide (NaI)	0·000018 ...	0·000032
Barium sulphate ($BaSO_4$)	0·001557 ...	0·001020
Strontium ,, ($SrSO_4$)	0·043435 ...	0·018033
Bicarbonate of strontium [$SrO(CO_2)_2$] ...	0·004741 ...	—
,, calcium [$CaO(CO_2)_2$] ...	0·974873 ...	0·802482
,, magnesium ([$MgO(CO_2)_2$]	1·108505 ...	0·780704
,, iron [$FeO(CO_2)_2$]	0·065196 ...	0·031527
,, manganese [$MnO(CO_2)_2$]	0·001738 ...	0·001753
Calcium arsenate [$Ca_3(AsO_4)_2$]	0·000130 ...	0·000199
,, phosphate [$Ca_3(PO_4)_2$]	0·000334 ...	0·000814
Silica (SiO_2)	0·034627 ...	0·025616
Total	14·269704 ...	11·032674
Free carbonic acid gas (CO_2)	1·834179 ...	2·300613
Total, including gas (CO_2) ...	16·103883 ...	13·333287

The local practitioners insist that the new spring can be compared with those of Carlsbad and Marienbad. Actual experience shows that its use is to be recommended notably for excessive corpulence and that the effect is not exhausting to the circulation or to the nervous system. This is probably due to the fact that the water does not interfere to the same extent with the assimilation of the food. Dr. Baumstark of Homburg insists, for instance, that the neutral salts contained in the waters are easily absorbed—that is to say, a portion of the salts are taken up by the blood—therefore the watery evacuations do not contain food products that should be absorbed as nutriment. He argues that physiological action within the body due to the secretions of the glands, the liver, or the mucous membrane of the stomach depends to a large extent on osmosis. This is increased if the blood contains neutral salts such as those provided by the Homburg waters and Dr. Baumstark urges that this would not occur where the salts are of such a nature that they cannot so easily be absorbed.

It would be difficult to find a place where there is such a variety of waters as at *Homburg*. Not only is the result of taking the water free from debilitating effects for the reasons given above but perhaps also because they contain a small proportion of iron. If, however, this does not in itself suffice there are likewise two chalybeate springs.

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[1] Parts I. and II. appeared in THE LANCET of August 12th (p. 484) and 26th (p. 629) 1905.

The Luisenbrunnen is a mild, easily digested iron water which contains a small quantity of sulphuretted hydrogen but no chloride of calcium. This perhaps explains the fact that it does not excite or produce headaches. Then there is the Stahlbrunnen which contains much more salt and more iron; it is a very strong tonic but does not produce constipation. Thus it is possible to stimulate and to strengthen while ridding the system of superfluous fat. Dr. Fr. Hoeber, in a small book on the waters of Homburg, says that:—

> To sum up, we have seen that saline waters are almost entirely absorbed and that they can diminish the weight of the body because the nutritious substances introduced into the human system are more quickly consumed; but we have also seen that if given in smaller doses they promote the assimilation of albuminates and thus help nutrition and facilitate the reception of nourishing food. In a word, the great advantage of the mineral springs, rich in chlorides and poor in sulphates, is that, according to the will of the physician, they may promote as well the regressive as the progressive metamorphoses of the body, and that according to their administration and the diet observed during their use they can increase or diminish the weight of the body. This is the reason why the Homburg waters have in many cases apparently quite opposite effects; this, too, is the reason why we see here, on the one hand, stout and pasty-looking men relieved from the excess of weight, leaving the place rejuvenated and with recovered elasticity, and why, on the other hand, we see tender and delicate-looking ladies of tall and thin frame returning to their homes with a healthy complexion, firmer in muscles, and increased in weight.

Dr. Hoeber also urges that delicate patients suffering from anæmia or torpidity of circulation who are advised to take the iron waters at St. Moritz or at some other high altitude should first stay, if only for a fortnight, at a bracing place which combines the invigorating effect of dry mountain air with a mild climate, so that the patient may thus prepare himself for the rough and more trying effect of the high mountain resorts. Homburg is about half-way between England and the Swiss mountain stations. Its climate is very dry because the nearest rivers, the Rhine and the Main, are too far off and the brooks in the neighbourhood are too small and shallow for the evaporation of water to produce mist or damp. Then there is very little rain and it is rapidly absorbed by the soil. The neighbouring mountains and vast forests give a low summer temperature and a stimulating atmosphere. It is an admirable half-way house between, for instance, the mild moist climates of the southern coasts of England and the high altitudes and rigorous climate of the Engadine or of Davos.

Dr. C. Weber, who is one of the leading physicians at Homburg, expressed his surprise that there were not more cases of heart disease sent to Homburg: the wells were in such a perfect condition, they were so rich in carbonic acid gas, and it had been often demonstrated that baths in such waters were very useful in diseases due to insufficiency of heart action or to increased tension of the blood (arteriosclerosis). But many patients had been kept away last year by the motor race which was held in June and because in August there were too many gaieties and the cost of living in some of the hotels was too high. Yet no health resort more faithfully fulfilled its promises so far as the efficacy of its waters and baths was concerned. There has been, however, difficulties in regard to diet. Some hotel-keepers did not take an intelligent interest in the patients and did not readily provide the diet prescribed. Though this was often cheaper than the usual hotel fare an extra charge would be made. Now, however, the hotel-keepers are beginning to understand their true interests better. The 15 active practitioners of Homburg have met and after much discussion they agreed upon four dietary tables with three subsections each. These have been drawn up and printed. They are given to the patients and by the patients to the hotel-keepers, and as they are the same, though coming from different medical attendants, the respective cooks are getting familiar with them and know better what to do. The four diet tables are for gout and kindred diseases, for gastric disorders, for chronic obstruction, and for diabetes. These are matters that will be taken in hand more and more carefully by all the hotel and lodging-house keepers as they realise that on the cure of the patients depends the prosperity of Homburg. Therein lies the future of the town.

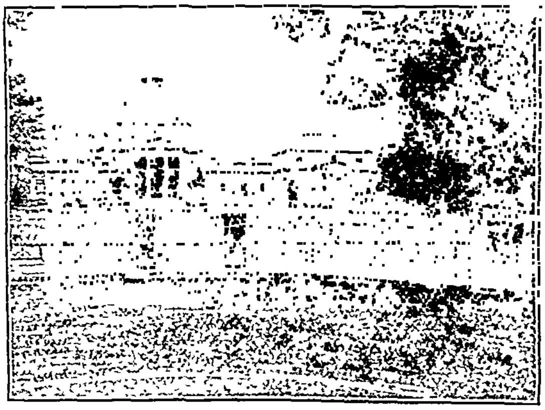
Dr. Weber also pointed out to me the newly introduced thermal-mud treatment. This is sometimes known as the fango treatment. The clay heavily charged with silicate found close to the Homburg springs is dried by exposure to the air and then ground to fine powder. To this hot mineral water is added till a sort of potters' clay is produced. It is then placed like a poultice on the affected limb. The temperature is generally from 115° to 140° F. and being a bad conductor the mud preserves the heat for a long time, so that the mud poultice can be applied for from 25 to 40 minutes. After that the patient stays 15 or 20 minutes in a mineral bath. The following analysis of the Homburg thermal mud has been made by Dr. A. Rüdiger:—

Silica (SiO_2)	37·400
Alumina (Al_2O_3)	13·776
Ferric oxide (Fe_2O_3)	3·612
Lime (CaO)	0·566
Magnesia (MgO)	0·904
Potash (K_2O)	0·526
Soda (Na_2O)	2·820
Sulphuric anhydride (SO_3)	0·290
Chlorine (Cl)	0·310
Organic and volatile substances	4·520
Water	35·276
	100·000

No demonstration has yet been given to show if any of these constituents penetrate and enter the general circulation of the patients, but researches are now being carried forward with a view of ascertaining whether the mud contains radio-active substances. In any case it gives good results in the treatment of several complaints and notably of chronic rheumatism, gouty articular deposits, and pleural and other effusions.

It is at the Kaiser Wilhelmsbad that these mud poultices are to be obtained. This is a palatial building and was constructed in 1890 (see Fig. 1). Here there are 48 separate rooms for the mineral baths. There are also vapour baths, electric baths, a swimming bath, and a room for massage and for gymnastics. For the mineral-water baths the Schwarz method is applied. The bath is made of metal, probably copper or brass. In this the water from the springs is admitted in its natural and cold condition. Had the water been previously heated it would have lost its carbonic acid gas. The temperature is raised at the moment the bath is going to be used by steam coils that pass underneath and outside the bath. Then there are also mud baths. These are made with peat taken from the Rhön mountains, which is torn asunder and reduced to small particles. It is then mixed with the mineral-water and warmed. All this implies the use of machinery and a considerable amount of labour. The baths are luxuriously fitted up, well warmed in the colder months of the year, and an elaborate treatment may be here followed with every comfort.

FIG. 1.



The Kaiser Wilhelmsbad, where the mineral water, mud, and other baths are given. The inclosure in the foreground protects and leads down to the Kaiserbrunnen spring.

Close at hand, in the identical building where the first roulette table was established, there is an institute for mechano-therapeutics. This has been established by Dr. Gustav Hamel, and he has there 35 different machines giving 60 different kinds of movement. Large windows open out on to a broad balcony or terrace with two pine trees growing through the flooring. Beyond a thick cluster of trees hides this from view. When the weather is fine carpets are laid out here and the patients can sit in the open air. Thus as the machines expand their chests and induce deep breathing they absorb the pure out-door air loaded with the balsamic perfume of the pine trees. Dr. Hamel has come to an agreement with the medical practitioners of the town that he will not in any way compete with them. He will not practise medicine in the ordinary sense of the term but will only treat by mechano-therapeutics those patients who are sent to him by the medical practitioners of Homburg.

From all these details it will be seen that the town of Homburg is admirably equipped for the treatment of a large variety of diseases. By nature it is favoured in every way. The money and the art brought to bear by the Blanc brothers have created not only a splendid Kurhaus, with its theatre, its vast concert rooms, and reading rooms, but has surrounded it by a most beautiful park. Here the bands play, here idlers while away their time with golf or tennis, the patients sip the waters, and the more thoughtful may read in the open air in the midst of beautiful scenery (see Fig. 2). From this centre a great variety of paths and roads lead to low hills or to mountains some 3000 feet high. Patients with feeble hearts can here take graduated exercise on level ground or by climbing. Those who have a taste for natural sciences—botany, entomology, geology—can pursue their studies in the Taunus mountains. Though undoubtedly a large proportion of the people who frequent Homburg have more money than brains, still there are a few professors and men of intellect who need the waters. Perhaps it is in the provision of intellectual occupations and diversions that there is the most need for improvement and some innovations. Rambling clubs, for instance, might be established with competent scientific guides to explain something of the botany, zoology, or geology that can be gleaned in the walks and excursions which are so numerous and varied round and about Homburg.

FIG. 2.

View from the Kurhaus terrace of the pleasure gardens and park where the mineral springs are situated.

In a word, the citizens of Homburg must strive to efface from their memories the recollection of the extravagant, reckless, ignorant, wealthy, dissipated crowds that used to fling their money away in the hotels and on the roulette tables. If some such people still come to Homburg it must be borne in mind that they come not to gamble but rather as penitents punished for over-indulgence and seeking to remedy by drinking the waters the evil wrought in the past. Such persons do not want to revert to their former extravagances and if they find themselves surrounded by temptations to this effect then they will go in preference to other health stations that have a better comprehension of their medical mission. Such, then, is the future of Homburg It will become more and more a place where all the inhabitants will grow in the understanding that it is their duty in life to help, each in his particular line, to cure patients coming from all parts of the world. Homburg has no other claim for public patronage than that arising from the number of cures effected. In the past Homburg was a pleasure resort. In the present it suffers from the traditions then created. In the future it must efface those traditions and give itself up wholly to the noble mission of placing its great natural resources at the service of suffering humanity.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Infants in Elementary Schools.

THE feeling against children under five years of age being allowed to attend the public elementary schools seems to be spreading. The medical officer of health of Bradford says that from three to five years is the age when children are most susceptible to measles and when it is most fatal. If they were not allowed to attend school under five years of age there would be a smaller mortality from this disease and from whooping-cough, less defective eyesight, and more room for older pupils. The medical officer of Oldham takes much the same view and also says that school life, especially among the infants, is greatly responsible for the prevalence of certain infectious diseases. The chairman of the Barrow education committee says that the exclusion of these children from school would lessen the cost of education by £2000, a sum equalling a rate of 2*d.* in the £. At a recent meeting of the Sunderland education committee it was decided by 18 against 2 not to admit children under five years of age. The chairman said that the schools ought not to be used as crèches, while another member "deplored the continual weakening of parental responsibilities" and said that it was not the ratepayers' duty to provide nurseries for infants, although infants might be in some ways far better in school than in the slums. If the mothers were free to give proper attention to the children, if they were wishful and sufficiently instructed to look after them properly, they would be the right people to have charge of their own children, but take the average of poor women in the "mean streets" and the slums and one could scarcely contend that the children would be better at home than at school, considerations of epidemic disease apart.

Railway Ambulance Work.

On August 24th, at the London-road station, Mr. E. Chapman, M.P., presented the Royds Ambulance Shield to the Newton Hyde team, the winners of the annual competition. The shield is the gift of Colonel Royds, M.P., and is competed for yearly by teams representing the various depôts on the Great Central Railway. With the shield is given a money prize of £5, the second and third teams receiving £3 and £2 from the Sir Edward Watkin Meritorious Conduct Fund. The second team this year was the Hull and the third the Barnetby (engineers' department). There are already more than 1000 servants of the company competent and ready to render first aid to the injured. The movement has grown rapidly and is still growing. Six years ago only three teams competed for the Great Central prize, while this year there were 18. This movement deserves every encouragement. It is an indication of kindliness and humane feeling on the part of the men, which the instruction converts into a practical, skilled, and disciplined agency for good, while the morally elevating effect on the men is by no means the least of the benefits that this ambulance work brings in its train.

The Grocer's Mistake.

One of those unfortunate little mistakes which cause death was inquired into by the Manchester county coroner on August 23rd. A woman in Gorton went to a grocer's shop for some castor oil. By mistake she was served with camphorated oil instead, and after drinking it was taken ill and died. When the grocer found out his mistake he ran to her house and said he had given her the wrong oil, but when told she had taken it he added that it would do her no harm. She died shortly afterwards. Mr. G. A. Wolfendale, who made a post-mortem examination, said there were traces of the oil in the stomach. His opinion was that death was due to cardiac syncope, accelerated by irritation of the stomach, due to the presence of camphor. Mr. W. B. Rigby agreed in the main with Mr. Wolfendale's evidence, but thought the fatty condition of the heart was sufficient to cause death. He said there seemed to be none of the symptoms of camphor poisoning. "There would be an intense burning of the throat," he pointed out, but the deceased did not complain of such pain. He rather thought, however, that death had been accelerated by the camphor. The camphorated oil would probably cause much less burning in the throat than camphor dissolved in spirit. The verdict was death by misadventure, and the coroner advised the grocer to be more careful in future. No doubt he will be, but such accidents are too frequent and show that the sale of poisons is often left in unsafe hands.

Hospital Sunday and Saturday Fund.

The amount collected for the Hospital Sunday and Saturday Fund in Manchester and Salford allows this year for the distribution of £7500 among the various medical charities. The apportionment is as follows:—

	£	s.	d.		£	s.	d.
Children's Hospital	1243	3	2	Hospital for Skin Diseases	145	17	2
Royal Infirmary	1215	13	9	Ear Hospital	54	15	4
Sick Poor and Private Nursing Institution	737	2	2	Christie's Hospital (Cancer Pavilion)	81	1	10
Hospital for Incurables	521	15	11	Victoria Dental Hospital	61	11	3
Salford Royal Hospital	523	8	9	Holme Dispensary	52	6	11
Ancoats Hospital	499	12	2	Lock Hospital	43	10	4
Southern and Maternity Hospital	433	19	8	Chorlton-on-Medlock Dispensary	25	17	6
Royal Eye Hospital	457	2	0	Homœopathic Institution	8	11	10
Northern (late Clinical) Hospital	431	15	11				
St. Mary's Hospital	414	15	4				
Hospital for Consumption	343	13	9		£7500	0	0

Pure Milk for Leeds.

An experiment is to be tried at Leeds which will be watched with interest. An establishment for the supply of pure milk, run at a loss, is to be opened. It is in the heart of Leeds, surrounded by the poor, is the property of the corporation but the expenses of the scheme are being borne by a voluntary fund to which the Lord Mayor has contributed. The provision of pure milk direct from the farm, if carried out successfully, will be a priceless boon, but it would be unfortunate if what looks like the element of charity in the scheme should do anything to sap the sense of responsibility and the self respect of the parents.

Suicide Epidemic.

Manchester and the district around have had to chronicle an unusual number of suicides lately. A Salford publican 29 years of age, who was slightly in debt, from which he could easily have been extricated, was found with his throat cut and "on a barrel was found a bottle and a tumbler containing ammonia." In the same district a commercial traveller shot himself because an appointment which he expected had been deferred, while he had, it seems, some hallucinations or fancies about his health. The verdict was, of course, "temporary insanity," but the unfortunate man had arranged his affairs in a letter to the coroner and expressed a wish to be cremated. Another case was that of a man, aged 71 years, who had been in an asylum and whose relatives had been cautioned as to his being suicidal. He was found in a claypit. The jury added a rider to the verdict to the effect that he ought to have been more closely attended, but medical men with experience in the care of suicidal patients know that no amount of attention will ever avert such catastrophes. These cases were the tragedies of one week end.

Sept. 4th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Hospital News.

BY the will of Mrs. John Ponca of Erdington several charitable institutions benefit. I understand that the Birmingham General Hospital and the Queen's Hospital will each receive £10,000.—Arrangements are being made for the opening in connexion with the Guest Hospital and Dudley Dispensary of a branch for the treatment of diseases of the eye. The branch will be maintained by a special fund and the in-patients will be treated at the Guest Hospital while the out-patients will go to the dispensary. The patients will be under the care of Mr. B. H. St. Clair Roberts.—At the last meeting of the Hanley, Stoke, Fenton, and Longton joint hospital board a letter was read from the Local Government Board sanctioning the borrowing of £1334 for the provision of a new mortuary and water storage tank at the hospital. The letter proceeded to state that the Board regretted the decision of the joint board not to provide accommodation for enteric fever. It pointed out that enteric fever was in the majority of cases a far more formidable disease than scarlet fever, that the mortality caused by it was greatest among persons in the prime of life, that the chances of recovery of the patient depend largely upon his receiving proper nursing and diet; and that infection frequently spread from one member of a family to another under the conditions of accommodation and nursing which were met with in households of the poorer classes. The Board found from the reports of the Registrar-General that in the Stoke registration district, which corresponded with the area of the joint hospital district, in the five years ending 1904, 174 deaths from enteric fever were registered against 149 from scarlet fever. It appeared to the Board, therefore, that in reserving its hospital for scarlet fever and diphtheria, to the exclusion of enteric fever, the joint hospital board was not making the best use of the accommodation which it possessed in the health interests of the district. Replying to a question, Dr. C. H. Phillips said that the number of patients in the hospital had never exceeded 120, whereas the accommodation was about 160 beds. He suggested that they should use one 24-bed pavilion for cases of enteric fever and he thought that they would have sufficient accommodation for other cases. It was decided to refer the matter to the chairman's consulting committee for further consideration. During the quarter 103 patients had been admitted into the hospital—viz., 46 suffering from scarlet fever, 55 from diphtheria, and six from combined diseases. Nine deaths had occurred from diphtheria and two from combined diseases.—The annual meeting of the supporters of the Corbett Hospital, Stourbridge, has recently been held. During the year 624 cases had been examined and 355 patients had been admitted to the hospital. The hospital premises have been enlarged by the addition of a sterilising chamber. The medical officers in their report state that the demands on the resources of the hospital have so increased that they regret their inability to cope with them. They wish to see not merely increased accommodation for patients but the establishment of a convalescent home in the country to which patients could be sent from the hospital. The financial report shows that while the income is practically unchanged there had been last year £350 less expenditure.

The Small-pox Epidemic at Nuneaton.

Another outbreak of small-pox has occurred at Nuneaton, the second this year and the third within 18 months. The outbreak is traced by the medical officer of health to a schoolboy, but where the lad contracted the disease he has been unable to find out. The number of cases notified up to the present is 40 and of these only three were vaccinated. The outbreak has been almost entirely confined to children, only three adults having been affected. No less than 19 cases were attributable to the schoolboy who seems to have initiated the epidemic. All possible precautions are being taken by the medical authorities to limit the spread of the infection. A house-to-house visitation is being energetically made throughout the affected area by a county council health visitor and a school attendance officer. The vaccination officer acting under instructions of the board of guardians is also visiting each house and vaccinating the inmates. The workhouse is closed except to urgent cases and inmates' leave of absence is suspended. No visiting is allowed at the General Hospital and the public open-air bath has been closed. The sanitary committee of the district council has decided to remove the sand from a pit in the Nuneaton recreation ground where many of the children down with small-pox had been in the habit of playing. Unfortunately difficulties have been put in the way of the medical authorities by parents not merely neglecting to notify cases but wilfully suppressing all information about them. Cases have been brought to their notice by anonymous communications and their work, in consequence of the great difficulty they have experienced in unearthing cases, has literally occupied them night and day. Police proceedings have been taken in several instances and fines summarily inflicted. Luckily the epidemic is a mild one, only two cases, so far, being of the confluent variety.

Birmingham and Day Nurseries.

Now that the local educational authorities have discretionary power to refuse the admission of children under five years of age to their schools, attention is being directed to the question of creches or day nurseries for such children. Many of the schools in Birmingham have been specially adapted for the reception of small children and it is probable that for some time at least children under five and over three years of age will not be excluded. There are already two creches in Birmingham, the result of philanthropic effort, and although small, being only able to accommodate an insignificant proportion of the infant population in the immediate district in which they are situated, they have done, and are still accomplishing, a valuable work. The advantages offered are readily sought and evidence is not wanting to show that there would be a real demand for such provision if made in the most congested and poorest quarters of the city where oftener than elsewhere women are the bread-winners. The subject was referred to by the medical officer of health in a special report last year, but without his making any recommendation. It has also been brought before the health committee, but no action has as yet been taken. In view of the infantile mortality and the decreasing birth-rate many in Birmingham think that some such provision should be made, but the general feeling is that it should emanate from a private rather than a public source. The question may, in the near future, reach a more acute stage in Coventry than in Birmingham, for the Coventry city council has confirmed the recommendation of the sanitary committee that the education committee, in view of the extensive prevalence of infectious disease in infants' schools during the last few years and on the grounds of the general health of children, should be urged to do its utmost to discourage the attendance of children under the age of five years at its schools.

The Royal Commission on the Care and Control of the Feeble-minded.

At the last meeting of the Stoke-on-Trent board of guardians a letter was received from the Local Government Board stating that the Royal Commission on the Care and Control of the Feeble-minded had appointed two medical men to make an inquiry respecting the number of the mentally defective in the union of Stoke and in several unions of Somersetshire. Dr. W. A. Potts of Birmingham will make the inquiry in the Stoke-on-Trent union. The inmates of the Poor-law institutions, workhouses, infirmaries, casual wards, and schools will be examined with a view of noting and classifying the mentally defective therein. Inquiries will also be made from medical officers and relieving officers as to the same classes comprised among those receiving out-relief.

The Health of Worcester.

The medical officer of health of Worcester in his report upon the second quarter of the year records that the birth-rate of 24·22 per 1000 of the population was 3·3 per 1000 below the average rate of the ten preceding second quarters, while the death-rate of 13·85 was 4·21 per 1000 less than the average of the ten preceding quarters. The deaths of infants under one year numbered 51, which had only been once exceeded during the ten preceding second quarters and was ten in excess of the average number. The infantile death-rate per 1000 births was 4·5 above the average.

Sept. 5th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Report of the Medical Officer of Health for the Year 1904: Health of Liverpool.

THE area of the city comprises 14,909 acres, or a little more than 23 square miles, with an estimated population of 723,430. The birth-rate continues high—namely, 33·5 per 1000 of the population. A diagram in the report shows how the birth-rate of Liverpool has exceeded that of England and Wales during the last 40 years. The death-rate of the city for the year was 21·9 per 1000 of the population, being 2·1 per 1000 higher than that of the preceding year. The increase in the death-rate was entirely owing to the increase in deaths of infants and children below five years of age, the deaths at other age-periods having been below the average. The year 1904 was characterised by an excessive mortality from infantile diarrhœa during the months of July, August, and September, the temperature being very high in July and the rainfall lower than the average during that and the preceding month. The deaths of over 1500 infants during July, August, and September were registered as being due to choleraic diarrhœa and allied causes. Great attention has been given to the milk depôts. The members of the medical staff of the Children's Infirmary and other medical men of the city have made use of the depôts as a means of lessening sickness amongst infants requiring their attention. The more dangerous forms of zymotic disease have shown a decrease. Representatives of the health committee were invited by the London County Council to attend a conference upon the subject of the spread of small-pox by vagrants and the preventive or remedial measures to be adopted. Alderman Roberts and the medical officer of health (Dr. E. W. Hope) attended the conference on behalf of the committee on Nov. 10th, 1904. The conference, which was somewhat prolonged, resulted in resolutions being passed as to the detention, cleansing, and vaccination of tramps. Ultimately these matters were referred to a subcommittee, upon which Alderman Roberts was selected to represent the city of Liverpool. Typhus fever has continued to appear from time to time, although to a relatively trifling extent as compared with its prevalence in former years. With regard to tuberculosis some interesting tables will be found in the report illustrating the remarkable decline in pulmonary tuberculosis owing to the sanitary measures adopted during the last 20 years. The voluntary notification of pulmonary tuberculosis by the medical attendant originated in 1901 has been persevered with and the help of the sanitary authority has thus been available in those forms of the disease in which it can be of use. Instructions for the guidance of tuberculous persons are issued through proper channels. Owing to the prevalence of infectious sickness of various kinds amongst the pupils it was found necessary from time to time during the year to close a considerable number of schools. The greatest sufferers were those attending the infants' schools and the babies' classes. It is not in the interests of health for very young children to be sent to school. On the contrary, there is every reason to believe that injury results from the proceeding. A large number of schools were examined under the terms of the resolution of the education committee, which occupied a considerable amount of the time of the staff. Reference is also made to the working of the Midwives Act. The health committee approved of an application being made to Parliament for additional powers in regard to certain important sanitary measures, notably to facilitate dealing with nuisances and conditions injurious to health arising from noises made by animals in confinement; to prevent the continued occupation of cellar dwellings; for checking the spread of ringworm and for the sanitation of hairdressing saloons; for dealing more effectively with stables; for the better lighting, ventilation, and cleanliness of restaurants and places where food is prepared for consumption; for improved sanitary conveniences in lock-up shops; and for checking nuisance arising from smoke from steamers on the river, hitherto not under control. From time to time considerable anxiety was occasioned by the difficulties in the way of dealing adequately in the interests of the public health with certain parts of the area of the Rivington watershed. The section of the watershed known as the Lever Park threatens to be a source of danger to the community of Liverpool and will require careful consideration to insure the protection of the community from conditions which in almost innumerable instances have been proved to be the source of dangerous outbreaks of typhoid fever. The President of the Local Government Board received a deputation on May 13th, 1904, on the subject of a quinquennial census. Dr. R. Caton and Dr. Hope represented the health committee of Liverpool upon the deputation. The deputation, which was a very large one, represented generally the sanitary interests of the country and was unanimous in urging upon the President the necessity for a quinquennial census. From the report of the medical officer of health for the week ending August 26th, 1905, it is gratifying to know that Liverpool is steadily improving in its health conditions. During the week only 280 deaths were registered, showing a decrease of 130 on the corresponding week of last year, and representing a death-rate of 19·9 per 1000 of the population. The number of births during the same period was 497, being equivalent to a rate of 35·3 per 1000. Only 233 cases of zymotic disease were reported and the deaths therefrom numbered 97, as compared with 209 from the same cause last year.

A New Department at the David Lewis Northern Hospital.

A new department for "orthopædic gymnastics and massage" has been created at the David Lewis Northern Hospital, to which Dr. W. H. Broad (who is devoting himself specially to the practice of massage after a course of instruction in Sweden) has been appointed surgeon in charge. Through the generosity of Mr. Levy, one of the David Lewis trustees, a room has been fitted up at the hospital containing several "exercise machines."

Conference of Lancashire and other Unions.

A conference of representatives of Lancashire, Westmorland, Cumberland, and Cheshire Poor-law unions was held on Sept. 1st in the town hall, Lancaster, under the presidency of Sir John T. Hibbert who quoted statistics showing the increase of vagrancy in the North-western Poor-law district. The meeting favoured the establishment of farm and labour colonies for the accommodation of tramps and a committee to be appointed from the different boards of guardians to further such a scheme was approved of.

The Spread of Asiatic Cholera.

The customary strict precautions taken by the port sanitary authorities of Liverpool are never relaxed and are efficient for dealing with any situation which might arise. The flow of cases of cholera is from east to west and in the opinion of Dr. Hope, the medical officer of health, the first point of difficulty in England will be Hull.

Beri-beri in Liverpool.

The German steamer *Forsteck*, which arrived in the Mersey on Sept. 2nd, had on board five Chinese sailors who were said to be suffering from beri-beri. All were removed to the tropical diseases ward of the Royal Southern Hospital.

Sept. 5th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Newcastle-upon-Tyne: Opening of New Nurses' Home.

THE first stage in the opening of the new infirmary at Newcastle took place when the new nurses' home was recently started. It is now many years since the old infirmary ceased to be able to house its nurses and the majority of them have been sleeping out in the old nursing home, but even this accommodation was insufficient and some had to be lodged in the hostel of the Young Women's Christian Association. The new home has accommodation for 104 nurses, but at present it is only partially occupied, the sisters still retaining their rooms in the old building. In the new home each nurse has a bedroom to herself and these are very tastefully and substantially equipped. The sitting and dining rooms are on the ground floor; they are large, light, airy, and properly furnished. The new infirmary is connected to the home by a covered way, the entrance to the latter being through a large conservatory which will form a very useful addition to the recreation room. Throughout the building the electric light is fitted and a lift connects the various floors in addition to the staircases. Already the place has lost its dreary aspect, for apart from its being inhabited the shrubs and planted borders round about are looking quite smart. The nurses themselves are thoroughly satisfied with their new quarters though at present it means that they have a walk of about 20 minutes night and morning through a not very salubrious part of the town, for the home is about three-quarters of a mile from the old infirmary. They have to make an early start, as breakfast is ready at 6.15 A.M. and they must be on duty by 7. In the evening they reach the home about 9.30 and the lights have to be out by 10.30. Sir Riley Lord, the chairman of the building committee, presided at the opening and was supported, among others, by the Mayor of Newcastle (Alderman J. Baxter Ellis), the Sheriff of Newcastle, Lord Armstrong, Sir George Hare Philipson, Dr. D. Drummond, and Dr. G. H. Hume. The chairman, on behalf of the building committee, officially handed over the home to Lord Armstrong who, as chairman of the management committee, represented that body. At the close of the proceedings the Mayor gave a donation of £5 towards furnishing the nurses' library.

Sunderland Infirmary: Appointment of Honorary Physician; Annual Report.

By the death of Dr. James Murphy two vacancies were virtually caused in the staff of the infirmary, for Dr. William Robinson, who was appointed to the vacancy in the surgical side, was himself one of the honorary physicians. There were four candidates for the vacancy on the medical side—Dr. G. B. Morgan, jun., Mr. A. Ayre Smith, Dr. H. K. Wallace, and Dr. J. Chalmers. The first vote was as follows: Dr. Morgan, 17; Dr. Chalmers, 12; Dr. Wallace, 3; and Mr. Smith, 2. Another vote resulted as follows: Dr. Morgan, 18; and Dr. Chalmers, 16. Dr. Morgan was therefore elected. The 111th report of the Sunderland Infirmary shows that a total number of 11,333 patients were treated at the hospital during 1904, an increase of 606 over those treated in 1903. Of this number 3172 were in-patients and 8161 out-patients. The average stay in hospital was 21 days and the cost per head was £2 18*s.*, while the cost per bed occupied works out at £49 14*s.* 11*d.* The ordinary income, though increased to £10,623, as compared with £10,279 for the previous year, does not quite reach the total expenditure. Funds are not yet forthcoming for the provision of a children's hospital in connexion with the infirmary, though several substantial donations have been received. It seems a great pity that a hospital in which so much work is done does not give more details of its labours, for there is not one word in the report as to the nature of the medical work done nor is there any information that would be interesting to the student of vital statistics.

Central Midwives Board: Newcastle Centre.

At the recent examination held in the Lying-in Hospital at Newcastle-upon-Tyne there were nine candidates of whom two were unsuccessful. The training of the candidates is carried on at the Lying-in Hospital where the nurses attend personally 20 cases, mostly, of course, in the extern charity. Last year there were 800 cases attended and this number is yearly increasing, for there is no other similar charity in the neighbourhood.

Sept. 5th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Infants' Milk Depôt in Glasgow.

A DEPÔT for the preparation of milk suitable for infants was opened in Glasgow in June, 1904. It has been in operation for a year and a report on the work done during the first six months is now published. The milk is getting into the hands of that section of the people whom it is desired to reach and now the dairymen in various localities in consequence of the demand are applying for the specially prepared milk in greater measure than the institution is able to supply it. These dairymen are all anxious to become distributors. The charges for a supply of this milk are payable in advance and the terms are for infants under three months 2*d.* per day, under six months 2½*d.* per day (six-ounce bottles), and over six months 3*d.* per day (seven-ounce bottles). The central depôt is open from 11 A.M. to 6 P.M. on week days and a two days' supply of milk is given out on Saturdays. The milk is supplied in bottles in a basket, each bottle containing sufficient milk for one meal, the amount varying with the age of the child. Infants under two months of age receive nine bottles per day, while older children receive fewer bottles as they are fed less frequently. Breakages are charged at the rate of 1*d.* per bottle and damages to the baskets must be made good. Every person using the milk is supplied with a teat and mothers are warned that on no account must a bottle be opened until the infant is ready to be fed. It is impressed upon the parents that the milk must never be used in preference to that of a healthy mother, which is the best of all foods for young infants. A leaflet is also issued to the purchasers bearing instructions as to the hours of feeding, the heating of the milk, and the cleansing of the bottles after use. During the first six months 314 cases were entered at the depôt, and of these at the end of that period 176 remained on the register. Of those who did not continue taking the milk 44 children left within a week's time, 11 within two weeks, 14 within four weeks, 18 continued till the third month, 11 to the fourth month, and five over four months. It is satisfactory to note that a large majority of the children are in the early months, 84 of the total being under a month at entry, and 54 being under two months. As was to be expected, the largest proportion of the children is drawn from the districts in the immediate neighbourhood of the depôt, but with the increase in number of the distributing dairies those living at a greater distance should have no difficulty in obtaining a regular supply of the milk. Up to the end of December, 1904, only two distributing dairies in addition to the depôt were in operation, but at the date of writing there are nine such distributing centres. At the depôt a register is kept containing a carefully prepared record of the essential facts appertaining to each child. Some difficulty has been found in obtaining information regarding those who are supplied through the distributing dairies but in this respect much valuable assistance has been given by the Charity Organisation Society in the visitation of households to which milk is being sent. This is regarded as a most essential part of the work if it is to have any educational value. As the value of this institution becomes more recognised by that section of the people for whom it is intended it is to be expected that a change for the better will take place in the infantile mortality in the city.

The Dangers of Shellfish.

In the early part of the summer the medical officer of health of Glasgow issued a report dealing with the dangers of eating shellfish gathered from infected areas of the shore and especially warning trippers who, from ignorance, were likely to be the worst sinners. Such a warning was not given needlessly, as is evident from the fact that during the last fortnight in Glasgow six cases of enteric fever, due to the eating of raw mussels, have been reported. In four of the cases the shellfish were gathered at an east coast town and in the other two at a Clyde watering-place.

Dunoon Cottage Hospital.

This hospital has been in existence for 20 years and in that time it has done excellent work. Owing to the increase of population in the district it was found that the hospital could not meet all the demands made on it. A bazaar has been held to raise funds for the hospital and the directors were fortunate in getting Princess Louise to open it. The sum aimed at was £4000. The amount realised by the bazaar was £2909 12*s.* 4*d.* and this with a donation of £1000 from Mr. Younger of Benmore and £500 from Mr. Coats of Paisley makes a total of £4409 12*s.* 4*d.* The directors have not decided whether they will extend the present hospital or rebuild on another site.

Sept. 5th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Salaries of Dispensary Medical Officers

THE inquiry recently conducted by Sir Acheson MacCullagh, Local Government Board inspector, into the salaries of the medical officers of the Tullamore union was one of more than usual interest. A consensus of opinion was expressed by the guardians that the present salaries were inadequate and that a suitable increase in them was debarred by Clause 6 of the Amending Act to the Local Government Board Act. That clause provides that any increase given to the medical men over the salaries they receive in what is known as the standard year should be borne altogether by the local ratepayers. It was said that this clause was rushed through Parliament and Mr. J. S. McArdle of Dublin, who attended the general meeting of the Irish Medical Association at Killarney, said that it was the chief obstacle in the settlement of suitable salaries for the dispensary medical officers. In the ordinary course the Treasury would defray half the amount of any increase and if this was done the Poor-law guardians would pay the remaining half. Now they cannot afford to do so. Mr. G. A. Moorhead, who has practised in that district for many years, deposed on oath that £100 per year went in connexion with his official duties, leaving him £50 and the emoluments of his practice to live upon. The other medical officers of the union gave similar testimony and at the conclusion of the meeting a resolution was passed that under the existing conditions—inadequate salary, absence of promotion, and uncertainty of pensions—it was impossible to attract the best men to the Irish Poor-law medical service.

Belfast District Lunatic Asylum.

Dr. W. Graham has just published, as resident medical superintendent, the seventy-fifth annual report of the Belfast District Asylum for the year ending Dec. 31st, 1904. The total number of patients under treatment was for the 12 months 1325—that is 633 males and 692 females. There were 100 deaths and 154 discharges and the admissions showed an increase of 12 as compared with the previous year. 79 patients were during the year transferred from the Belfast workhouse, making a total of 673 received from that institution during the past seven years. Dr. Graham says:—

> It is interesting to note—as illustrating the mental and physical characteristics during the past seven years of these workhouse cases—that, apart from the low recovery-rate and high death-rate, there is actually an average of 53 per. cent. yet remaining of those admitted, while in the year 1900, when the total admissions from the entire district were 379—one-half of which (183) were received from the workhouse—the number of workhouse cases yet remaining is 107, as compared with 32 received direct from the patients' own homes. In other words, of the 139 patients remaining from the 379 admitted 107 are transfers from the workhouse and 32 are direct admissions. The influence of these transferred cases in reducing the recovery rate of the asylum is thus clearly evident.

Dr. Graham points out that an asylum is not the proper place for the education and training of idiots and imbeciles, and although the attention of the Government has been drawn to the necessity of a better provision for such cases so far no relief has been obtained. The percentage of recoveries during the year, calculated on the admissions, is 41·0, as compared with 33·5 for the preceding year. The death-rate was 9·5 per cent., calculated on the total number under treatment, the principal feature in the mortality being again the large and increasing number of deaths—23—due to general paralysis of the insane. Nine deaths were due to phthisis and four to tuberculosis. There were no deaths from accident or suicide. The most important event of the year was the purchase in August of two farms adjoining the asylum and consisting of about 54 acres, by the acquisition of which the county road becomes the natural boundary of the asylum estate. As a result the villa colony runs no risk of encroachment from other buildings. The gross expenditure for the financial year ended March 31st, 1905, amounted to £23,958 7*s.* 8*d.*, being a net capitation cost of £21 4*s*, or £1702 13*s.* 2*d.* less than the preceding year. Of the entire expenditure £10,489 0*s.* 9*d.* have been defrayed by the Government contribution of 4*s.* per week per head and £1610 2*s.* 7*d.* have been received from farm produce, paying patients, and miscellaneous sources, leaving £11,859 4*s.* 4*d.* to be paid by the city rates, or £11 4*s.* 7*d.* as the average annual expense of each patient chargeable to the city. The "memorandum of inspection" (made by Sir G. P. O'Farrell, inspector of lunatics) and a series of 30 tables are appended, all of which give interesting particulars (medical and otherwise) concerning the asylum and its inmates. Special mention is made of the original work done in the pathological laboratory of the asylum by Dr. R. A. L. Graham.

The Rainfall in August.

The August of 1905 will long be remembered in Ireland owing to the extraordinary deluge of rain which occurred on Friday and Saturday, 25th and 26th of that month In the 24 hours ending at nine o'clock in the morning on August 26th the rainfall gauges at Trinity College, Dublin, showed that 3·3 inches of rain had fallen, while at Greystones, co Wicklow, the record was 3·4 inches. On no previous occasion within the last 40 years have three inches of rain fallen within 24 hours in Dublin. As a result, Little Bray (through which the river Dargle, a mountain stream, flows) was flooded out and an immense amount of damage was done, the people being obliged to fly from their houses in the village. A relief fund has been started for them. In the north of Ireland it rained continuously for 39 hours, the record being 2·95 inches. The total rainfall in Ulster for August, 1905, was 7·82 inches, which fell on 21 days, the corresponding amount in 1904 being 4·73 inches. As a result of the great spate considerable damage was done in the districts flooded by the river Bann and the river Lagan, but, on the other hand, it proved of much value to the places where water was becoming short in amount. For example, the quantity of water now in store in the Belfast reservoirs is slightly in excess of 1904, while previously to August 25th it was much lower.

Sept. 5th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Accidents to Workmen in Tongking.

A COMMISSION has recently been appointed at Hanoi to hold an inquiry and to initiate legislation on the subject of accidents in connexion with their employment happening to wage-earning Europeans and natives. The president of this commission is a magistrate of high rank and the members include delegates of various local undertakings, tradesmen nominated by the chambers of commerce, an agriculturist nominated by the chamber of agriculture, and M. Leroy des Barres, a professor in the school of medicine at Hanoi. Administrative officials and a high mandarin will also take part in the proceedings.

Hydrophobia communicated by Licking with the Tongue of a Rabid Dog.

At a recent meeting of the Société Médicale des Hôpitaux de Lyon M. Paviot and M. Nicolas described a case showing the danger of being licked by a rabid animal. The holder of a small farm, a man 36 years of age, had a bitch which was bitten on July 3rd, 1904, and died from hydrophobia on a date which the patient estimated as being between July 14th and 17th. This bitch was suckling a puppy, which was at that time three weeks old, and about a month afterwards it presented the same symptoms as its mother—namely, aversion to water, laryngeal spasm which prevented deglutition, convulsions, and finally paralysis; the animal did not drink and had no propensity to bite; it was killed by the patient about August 15th. The patient was perfectly certain that he had never been bitten by any of his dogs but he had several times been licked by them on his hands, the skin of which was quite sound according to his statements; he might not, however, have remembered all the circumstances and it was probable that the skin might have been cracked. The patient having no suspicion of danger did not speak of the matter and was not treated by Pasteur's method. His health remained excellent until on Sept. 22nd, exactly five weeks after the death of the dog, he had a restless night and suffered from vomiting, diarrhœa, distaste for food, and epigastric pain. At the same time he had symptoms of nervous irritability, anxiety, and distress. A medical man who was sent for thought at first that the case might be of gastric origin, but on the second and third days the symptoms included terror at the sight of liquids and became characteristic of the disease. On further inquiry the medical man was told about the dogs and the patient was sent to the antirabic institute at Lyons, where he died in 48 hours with convulsive attacks of extreme violence. Rabbits which were inoculated with his cerebro-spinal fluid or with portions of his central nervous system (cerebrum, cerebellum, and bulb) all showed characteristic symptoms and all died from hydrophobia after an interval varying from 15 to 20 days. The inference was that a person who has been licked by a dog which was either rabid or suspected of rabies ought to consider himself in danger if the animal's saliva has come in contact with fissures in the skin or even with newly shaven surfaces.

Hygroscopic Substances as Dust Preventers.

M. Philibert Delair has recently suggested a new method by which the dust that settles on floors may be prevented from rising. He recommends that floors should be wetted with a solution of chloride of magnesium, a very hygroscopic salt which will cause the floor to remain damp for some time; the dust is thereby moistened and can be swept up without rising in the air as usual. Two applications of a solution of chloride of magnesium at an interval of some days will render a floor capable of fixing the dust for six months. Floors treated in this way preserve for a long time a remarkably clean appearance as if they had been newly washed.

The Workmen's Compensation Act.

A section of the Workmen's Compensation Act (*loi sur les accidents du travail*) states that whenever an examination by a medical expert is ordered to be made, whether by a magistrate or by the courts, the expert shall not be a medical man who has either attended the patient or is in the service of the employer or is connected with the assurance company to which the employer belongs. The appeal court at Besançon has recently enforced this enactment and has ordered a fresh examination by an expert.

Baths and Hydrotherapy in the Treatment of Mental Disease.

At the congress of alienists and neurologists held from August 1st to 7th M. Pailhas reviewed the historical aspect of the subject at considerable length and then made some practical recommendations. For the stage of excitement he advised lukewarm or hot applications, including long-continued baths at a temperature from 28° to 34° C. (from 82° to 93° F.). The systematic use of permanent baths must be exceptional. In mania with violence and acute delirium the stimulating action of cool or cold baths of short duration and cold wet packs, either plain or with mustard, gave better results than lukewarm or hot baths, which were depressing. Wet packing had the advantage that the patient remained in bed. In hyperpyrexia and in acute alcoholic delirium M. Pailhas recommended baths, either cool or cold, and wet packing under careful medical supervision. In insane patients with a tendency to rheumatism, gout, or plethora, the hydrotherapeutic methods should be such as to promote perspiration. In general paralysis and the mental troubles associated with cardiac or pulmonary disease hydrotherapy was contra-indicated if it was likely to cause congestion of the affected organs or to interfere with their functions. In prolonged subacute conditions some stimulating cold or cool applications (douche baths, hip baths, and affusion) were sometimes found to be better than sedative lukewarm or hot applications. For chronic conditions ordinary baths and cleansing baths with soap formed the best treatment. For the prevention of insomnia warm baths and wet packing were advisable. Local applications, such as wet packing, foot-baths, and sitz baths, were beneficial in the treatment of nervous and mental irritability.

The Repair of Wounds in Cartilage.

At a recent meeting of the Academy of Sciences M. Cornil and M. Coudray described phenomena which they had observed in the repair of wounds in cartilage. In their first series of experiments they made narrow incisions with a bistoury in the depth of the *poulie fémorale* of dogs aged from 15 to 18 months, aseptic precautions being used. No repair took place even after the lapse of a month. The same experiments were then repeated on much younger dogs—namely, from seven weeks to three months old, and the results were now very different, for cicatrisation took place in the same manner as it does in the costal cartilages. The cicatrisation, which was at first fibrinous, afterwards becoming cellular and finally cartilaginous, seemed to be due to the fact that during the period from birth to the age of at least three and a half months the superficial layer of the cartilages was provided with blood vessels and behaved as a vascular tissue. Incision of a cartilage necessarily opened these vessels and it was they which supplied the reparative elements.

Sept. 4th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Surgery in the Russo-Japanese War.

UNDER the heading of "Surgical Experiences in the Russo-Japanese War" the *Deutsche Medicinische Wochenschrift* in a recent issue publishes an article by Staff-Surgeon Dr. Schäfer who accompanied the Russian forces. He begins with the interesting statement that the majority of the wounded on the Russian side seemed at first sight to be mild cases and the surgeons were surprised to find that bullets might enter vital organs without causing any more injury than if the tissue were perforated by a small needle. This first impression was, however, not justified by the results, for complications, such as empyema, peritonitis, &c., made their appearance in the course of a few days. The opinions held by individual surgeons with respect to the prognosis of wounds differed very much, for those who were at work on the battlefield were inclined to regard the Japanese rifle as a comparatively merciful weapon, whilst those who were engaged in the base hospitals and who examined the wounded a few days later when the above complications had developed came to quite a different conclusion. Statistical tables show that the number of men killed at once compared with the number of wounded was relatively smaller than in the South African war. The penetrating power of the modern rifle bullet is so enormous that the human body only offers a very small resistance and the track of a bullet may therefore be of great length. A single bullet may traverse the left shoulder, the chest, and the right arm, so that the act of respiration causes air to pass into, and out of, a wound involving the head of the humerus. Similarly, fæces and synovial fluid have issued from a wound in the thigh. The new pattern of Japanese rifle (1897, Arusaka) has a bore of 6·5 millimetres. As the Japanese bullets have a high velocity and are cased with a steel mantle, which tends to prevent distortion, they did not cause any great amount of bruising in and around the wound; the orifices of entrance and exit were very small, and the case often presented the appearance of a mere penetrating wound, so that the surgeons were liable to be misled by the slightness of the external appearances, and were then often astonished to find by radiography that there were extensive destruction of the bones and much production of splinters, together with fissures leading into the joints. Dr. Schäfer says that the utility of radiography has become remarkably evident in this war and that it is very desirable that army medical officers should be provided with portable Roentgen apparatus of the pattern issued to the German contingent in the Chinese expedition. Simple perforations of bone were rather rare, and it was difficult to say why in some cases the bullets had an explosive action and in others not; probably the distance from which a bullet had been fired was an essential factor. The work of the Russian surgeons on the battlefield was limited to first aid and the application of bandages, as they had been previously instructed to abstain as much as possible from operations. They were rather disappointed by this order but Dr. Schäfer is of opinion that it was a very reasonable one, for on the battlefield it is hardly possible to give due attention to the minutiæ of a surgical operation, and cases in which an operation cannot be postponed till the patient is conveyed to hospital are not very common. Surgeons who had served from the beginning of the campaign told Dr. Schäfer that they had not seen any case where an operation could not be postponed. Immediate operations might become necessary, especially in the case of profuse hæmorrhage from large arteries, but owing to the small size of the wounds of entry and exit the hæmorrhage stopped spontaneously as a rule, so that the temporary application of a caoutchouc bandage was sufficient. Tracheotomy and urethrotomy were seldom performed on the battlefield; tracheotomy was once performed on a Japanese who was wounded in the foot and had attempted to commit suicide by cutting his throat with his own sword to escape capture by the Russians. The number of amputations was relatively small, being 322 among 63,346 wounded, or 0·5 per cent. The conservative method was generally adopted in wounds of the extremities which had a marked tendency to heal. In wounds of the skull, however, operative measures at an early stage are to be recommended, for spontaneous recovery is rare when the cranial bones contain a cavity filled with broken-down brain substance and splinters of bone. In these cases it is a mistake to wait until alarming symptoms have developed. Primary laparotomy was seldom necessary; when the patients came to the hospital either adhesions had formed or general septicæmia had become established. Aneurysms were often met with; the question when this condition is to be operated on is not yet settled. Rifle or shrapnel bullets as a rule do not cause infection of the tissues to nearly the same extent as splinters of shell do; the latter have also a special tendency to bring about gangrenous emphysema (*Gasphlegmon*)—a condition which is invariably fatal.

Sept. 4th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Clinics at the Policlinico of Rome.

THE work of equipping the various clinics at the Policlinico is proceeding so satisfactorily that there is every hope of its being completed before the opening of the approaching winter session. The old medical clinic at Santo Spirito will shortly be vacated by Professor Baccelli and handed over to the Ministry of Public Works to be demolished and to make room for the fine boulevards along the western bank of the Tiber, the completion of which it has so long obstructed. Professor Durante's clinic in the Via Garibaldi has already been abandoned to the Ministry of the Interior and will in future form part of the school for training the city police. The new buildings at the Policlinico provide ample space for these two clinics as well as for the clinics of special medical pathology, of obstetrics, of ophthalmology, of oto-laryngology, and of pediatry. This concentration of different departments under one roof will prove an immense boon to the Roman medical student whose time has hitherto been sadly wasted in traversing the long distances which separated them under the old *régime*, and will likewise help greatly to reduce expenditure by lessening administrative expenses. This noble hospital, so complete in every respect and so admirably equipped as it now is for teaching purposes, adds one more to the many advantages which Rome possesses for the study of medicine—advantages, by the way, which have been utilised by the foreign student or foreign post-graduate to a singularly small extent. There is certainly no lack of distinguished men on the teaching staff, eminent alike for original research and for teaching ability—as witness the names of Todaro in anatomy, Luciani in physiology, Marchiafava and Bignami in pathology, Baccelli in medicine, and Durante and Postemski in surgery; the class-rooms and laboratories are admirably equipped and are open to all comers on payment of relatively small fees; and there is a wealth of material in hospital and dead-house available for clinical and scientific purposes. When to these facilities for study are added the delights of residence in Rome, its social and intellectual advantages, and the attraction of its unequalled treasures, archæological, literary, and artistic, it is a surprising fact that a British or an American student scarcely ever enters the precincts of its University or is ever to be found in the wards of its hospitals. The time has certainly come when Rome might fitly take a more prominent place in the estimation of the many English-speaking students who frequent continental medical schools and who at present turn their steps by preference to the crowded clinics of Paris, Berlin, or Vienna.

A Medical Political Party.

The increase in the number of medical men returned as deputies to the present Italian Parliament has led to the proposal that these members should unite to form a Parliamentary medical party prepared to sink their differences on general politics and to present a united front whenever any subject came up for discussion involving the many grave problems of public sanitation or the legitimate interests of the medical profession. This suggestion has taken concrete form in the shape of the "Fascio Medico Parlamentare," a body which consists at present of 30 members, including, amongst others, the names of Baccelli, Casciani, Queirolo, Rummo, Sanarelli, Santini, and Santoliquido, all men of position and influence in Parliament and in the profession. (One misses, however, the name of Celli.) In November next it proposes to hold at Rome a "General Sanitary Congress for the Promotion of Professional Interests," inviting all the *medici condotti*, the sanitary officers, pharmacists, and veterinary surgeons of the kingdom to participate in it. This congress will be the first of its kind called together under the auspices of a medical political party and, it is anticipated, will prove most useful by bringing the whole sanitary service of the country into contact with its representatives in Parliament. The mode of working of the new political party will be closely watched by the medical profession not only in Italy but in other countries where its interests and those of public sanitation are neglected by the legislatures even more than they are here. Much has already been effected in this direction by the individual efforts of a few medical deputies such as Bossi and Celli; much more may fairly be expected from the united action of the united medical party. Even in general politics its numbers would be already sufficient to insure respect for its views; in strictly medical questions its special knowledge should make its influence in the Chamber of Deputies supreme.

August 25th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Panama Canal Work Stopped.

IT is reported that active engineering operations on the Isthmus of Panama are to be suspended for a period of six months. This is partly on account of the necessity for the erection of quarters, tracks, wharves, &c., and the installation of suitable machinery of many sorts, but more especially in order to permit the work of sanitation to be pushed more energetically. It has become evident that this task is one of much greater magnitude than had been supposed and that it must be carried out with the greatest thoroughness before the actual work of digging can be performed in a satisfactory way. Chief Sanitary Officer Colonel Gorgas has already accomplished much and with the added opportunities now given him will no doubt obtain results as notable as those he achieved in Cuba.

The Study of Tropical Diseases.

The new territorial possessions of the United States have greatly stimulated interest in the study of tropical diseases and conditions of life. The current medical literature contains many contributions on such subjects and at the recent meeting of the American Medical Association it was proposed to establish a section on tropical diseases.

The Decreasing Birth-rate in America.

Much amusement has been caused by a recent action of the self-styled prophet, Elijah Dowie, who is the leader of a religious sect that has a very extensive settlement at Zion city, Illinois. Dowie has not only announced that every marriage among his followers must have his written authorisation before it can be solemnised, but has also issued a command that every married couple shall add one child to the population of Zion city every year. This is seconding President Roosevelt's anti-race-suicide campaign with a vengeance. The Census Bureau has issued an interesting bulletin dealing with the proportion of children in the United States. It does not attempt to estimate the actual birth-rate but indicates the proportion of children under five years of age to the number of women in the child-bearing period at different times in the country's history. These figures appear to show that since 1860 there has been a steady decrease in the birth-rate, for in 1860 the proportion of children to 1000 potential mothers was 634, while in 1900 it was only 474. The two States with the largest proportion of children were North Dakota and Indian Territory and the State with the smallest relative number of children was Massachusetts with only one-half of the percentage of North Dakota. In 1900 the proportion of children in cities was only two-thirds as great as in the country districts. The foreign-born women exhibit a much greater fecundity than the native-born.

Music for the Insane.

The effect of music as a mental sedative was recently tested on 400 patients of the asylum for the insane at Dunning, Illinois. Many of them were from the violent wards but during the two hours that the experiment lasted they manifested the greatest decorum and from the first number on the programme to the last they listened with rapt attention and frequent applause.

Disease among New York School Children.

A very unfortunate condition of affairs has been revealed by an investigation recently conducted by the health department of New York city. Early in the spring an official inquiry was made to ascertain how many of the pupils in the public schools left their homes either wholly breakfastless or insufficiently fed. The information obtained indicated so deplorable a state of affairs that the inquiry was extended in order to obtain some idea of the actual state of health of these children. Four schools were selected from the poorer districts, but not from the worst quarters, in order that average results might be secured, and 100 inspectors were appointed to make complete physical examinations of the children who attended them. It was found that 6294 children of the 13,941 examined required medical attention in one way or another. Bad teeth, defective vision, and swollen cervical glands were the commonest defects, more than 3000 instances of each condition being discovered. A large proportion of the children considered dull by their teachers were found to be affected with either poor sight or hearing or both. The fact that almost every other child in the schools should be in need of medical treatment is a terrible reflection on the conditions of city life, and extensive plans have already been made for a system by means of which every child found defective in any way will be followed up until it is known that the parents have secured proper treatment for the sufferer.

Typhoid Fever in New York and Elsewhere.

The seasonal outbreak of typhoid fever promises to be of unusual severity all over the country this year. New York has been unusually unfortunate in this respect for during the two weeks ending August 19th 500 cases had been reported, whereas for the corresponding period of 1904 there were much less than half that number. 300 of the cases this year occurred in the borough of Brooklyn where the water-supply seems to be infected seriously. Washington reports over 300 cases since the beginning of July and Philadelphia has also been the seat of a notable epidemic.

The Epidemic of Yellow Fever.

The situation in New Orleans has changed greatly for the better since the officials of the United States Public Health and Marine Hospital Service took charge, and already some of the experts are predicting that the disease will be stamped out within a month. The epidemic has in many respects resembled that of 1878 but it is now beginning to differ from this in the effectiveness of the sanitary measures. The quarantines are being enforced with more reason and less violence now that the people are beginning to realise the correctness of the mosquito theory. Sunday, August 20th, was sulphur day and by common consent all householders of Southern Louisiana fumigated their dwellings with brimstone or pyrethrum, so that very few mosquitoes are left alive in the towns. The chief obstacles now to be conquered lie in the ignorance and hostile attitude of the Italians. These refuse to carry out the instructions of the officials both as regards the care of the sick and the sanitary regulations, and in numerous instances the necessary measures have had to be enforced by violence. The number of cases so far has reached a total of over 1500, with a mortality of about 16 per cent., but it is believed that the acme of the epidemic has been passed.

August 28th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Opportunities offered for Inoculation against Plague.

IN the two cities of Calcutta and Bombay the inhabitants have every opportunity offered to them of protecting themselves against plague by the process of inoculation. In Bombay inoculation is done at the ten municipal dispensaries by qualified medical men who have been specially instructed, facilities are given for persons to be inoculated in their own homes, and for females a lady operator can be secured if desired. In Calcutta the four district offices are utilised and the operation is done by the officers of the plague department (qualified English medical men). In neither city have the people taken advantage of this protection except to a small extent. In the olden days those who were inoculated avoided some of the vexatious restrictions of the plague regulations and since these have been nearly all withdrawn the native of India apparently cannot understand what benefit he will derive from it. An excellent scheme has been adopted by the Mill Owners' Association in Bombay for furthering inoculation amongst the mill hands. They will first of all be instructed concerning inoculation and its advantages. Those who will take advantage of it will be allowed a day's leave and a policy for one year of Rs.50 in the case of death from plague. The Bombay mills employ 78,000 people. The mill owners have found how disastrous the scourge has been to them, not only in money but in trained hands.

The Present Small Mortality from Plague.

The returns of deaths from plague are now of little interest. For the week ending July 22nd 1122 deaths were reported and in the week ending July 29th only 1024 deaths occurred. The latter numbers were distributed as follows: Bombay Presidency, 615; Burmah, 147; Punjab, 128; and Mysore State, 68. The town of Moulmein in Burmah has become infected and has had to be declared an infected port. There are now 13 districts in Burmah slightly infected so that when the time comes for the revival of the infection the prospects in this province will be very gloomy.

Mad Dogs.

The Seistan mission was much troubled by mad dogs and I now hear that a similar trouble continues in Baluchistan. No fewer than seven men of the 32nd Lancers have been bitten while at Loralai and have had to be sent to the Kasauli Institute for treatment.

Profits on the Manufacture of Quinine.

The Madras Government is reported to have made profits on the manufacture of quinine last year to the extent of Rs.33,000. The output of sulphate was 12.920 pounds and the cost of production and manufacture was about Rs.11

per pound. As the price obtained for it was over Rs.13 the profit is explained. More than 2,000,000 seven-grain packets were supplied to post offices for convenience of distribution and sale at one pice (a farthing) a packet.

Further Concessions for the Indian Medical Service.[1]

A Royal Warrant recently published in the *Gazette* of India amends rules of promotion and precedence in the Indian Medical Service. The director-general will hold the substantive rank of surgeon-general but may rank as lieutenant-general when approved by the Secretary of State. The director-general goes on the retired list at 62 years of age. A captain shall be promoted to the rank of major on completing 12 years' full-pay service but this period may be reduced by six months in the case of an officer who produces satisfactory evidence of knowledge which is likely to increase his efficiency. This article of the warrant means that modest men will have to push themselves forward and to urge their own claims. Another substitution in the previous warrant is that "except as otherwise herein provided a major shall be promoted to the rank of lieutenant-colonel on completing eight years' full-pay service in rank of major." An addition to previous Article 10 is: "An officer below the rank of colonel who may be appointed as an honorary physician or surgeon after retirement from service shall be granted the honorary rank of colonel."

The Report on the Sanitary Condition of Simla.

A further report on the sanitary condition of Simla has been presented. From it I learn: "It is commonly reported that 90 per cent. of the milk consumed in Simla is brought in daily from villages in the neighbourhood. The villagers keep their cows in byres, filthy and unventilated, situated outside municipal limits in native States. It is impossible to inspect and regulate these cow byres. The villagers carry their milk in vessels open to contamination. They often wash these in dirty pools from which they also probably take water to increase the quantity of milk by dilution." This description does not announce a discovery because the same conditions exist all over India. There can be no guarantee for a supply of pure milk until the dairy and distributing agency are placed wholly under British control. The report goes on to say: "For many years Simla had only three sewers in which all the night-soil of the Main Bazar, Chota Simla, and Boileauganj were discharged. This entailed the carriage from long distances of receptacles on the heads of the sweepers. To lessen their work the sweepers often emptied the contents of the receptacles into any handy ravine." This description also expresses a similar condition prevalent over very many parts of India, including the towns. It appears that there is a hospital for natives in Simla to which small-pox patients and those suffering from infectious diseases are taken. This hospital is situated above the new cemetery close to private residences and to a collection of native houses. The Sanitary Investigation Committee further reports that the rate of filtration of the drinking water is too rapid for absolute safety; that the laundry system is dangerous; that all the bazaars are greatly overcrowded with an average of 17 inmates per house compared with an average of five inmates per house in the big towns of the Punjab; and that the private habits of natives are a standing menace to the sanitary wellbeing of the station and that the harbouring of enormous hordes of pack animals at particular places in Simla with no provision for keeping such places clean is a permanent source of pollution. These accounts simply bring to light the absence of forethought and neglect of action anticipatory of the growth of such insanitary conditions. They should have been expected and provided against. Even with their eyes wide open the authorities allow these things to develop. It is the same all over India. Large sums of money are spent on education but the children are allowed to grow up in filth. At the same time as this report is issued about the insanitary state of Simla vital statistics are published apparently with the object of showing what a healthy station it is. With a native population of some 30,000 the rate of mortality is put down at 13·7 per 1000 per annum. This is absurd and obviously shows that the system for the registration of deaths is on a par with the sanitary state of the station.

Cholera in Madras.

The cholera epidemic in Madras city is steadily increasing, the total number of attacks since the middle of July being 1500, with about 1000 deaths. Many cases have occurred amongst the European and Eurasian populations and a European cholera ward has had to be fitted up in one of the hospitals.

Obituary.

I regret to have to record the death of Dr. C. H. Cayley, one of the divisional health officers of Bombay. It appears that some little time ago he hurt one of his fingers, the injury being apparently of comparatively little importance, but tetanus developed and, notwithstanding that an operation was performed, he died after a few days' illness. Dr. Cayley was one of the English medical men who came out several years ago for plague work but was subsequently elected by the Bombay municipality as one of its health officers.

August 17th.

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[1] This information has been published in the Students' Number of THE LANCET (Sept. 2nd, 1905, p. 716), but in view of the particular circulation of that number we think it may well be repeated.—ED. L.

Obituary.

FARQUHAR MATHESON, M.B., C.M. ABERD., J.P.

Dr. Farquhar Matheson, who died on August 23rd at Soho-square, was born at Dornie, Kintail, Ross-shire, in May, 1840. Educated at the Universities of Glasgow and Aberdeen he graduated M.B., C.M. at the latter in 1868 and after holding appointments in several provincial towns he came to London in 1870 and eventually became surgeon to the Royal Ear Hospital, an appointment which he held till the time of his death. Dr. Matheson took special interest in Scottish affairs and in aiding Scottish students entering the universities. As honorary surgeon to the Royal Scottish Hospital, honorary secretary of the Highland Society, ex-president of the Gaelic Society of London, and surgeon to the London Scottish Volunteers, he devoted a great part of his time to the interests of Scotsmen in London. He was J.P. for the county of Middlesex and took an active part in the affairs of the Westminster district. The funeral took place at Lochalsh, Ross-shire, on August 29th, with Highland honours.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Bernhard Heinrich Laehr who may be looked upon as the *doyen* of German alienist physicians, having been born in 1820. He was especially eminent as an organiser of asylums and founded the *Allgemeine Zeitschrift für Psychiatrie.*—Dr. Karl Schweigger, formerly professor of ophthalmology in the University of Berlin, at the age of 75 years. His student days were spent in Erlangen and Halle and his first teaching post was under Professor Krukenberg, the Halle professor of internal medicine. He afterwards worked for many years under Heinrich Müller in Würzburg and von Graefe in Berlin. He also travelled a great deal, visiting ophthalmological clinics in Utrecht, London, and America and was appointed to succeed his old master von Graefe in 1871. His published works include a well-known "Manual of Ophthalmology," "Lectures on the Ophthalmoscope," and "Researches on Strabismus." He was for many years editor of the *Archiv für Augenheilkunde.* He was a great operator and introduced various ophthalmic operations or modifications of such. He was forced to retire from active work some six years ago by the state of his health.—Dr. Otto von Büngner, director of the Hanau Hospital and formerly assistant in von Volkmann's Surgical Clinic in Halle. He was 47 years of age.—Dr. Paul Schubert, an eminent authority on school hygiene. He died at Nürnberg and was in his fifty-sixth year.—Dr. Adam Kunkel, professor of pharmacology in Würzburg at the age of 57 years.

LLANWRTYD WELLS, CENTRAL WALES.—With a view to the obtaining of powers for further development negotiations are now in progress for forming this health resort into an urban district. At a meeting of the Breconshire county council dealing with the matter it was contended that the development of this spa meant the development of Breconshire.

Medical News.

Foreign University Intelligence.—*Florence:* Dr. Domenico Taddei of Padua has been recognised as *privat-docent* of External Pathology.—*Freiburg:* Dr. Adolf Oberst has been recognised as *privat-docent* of Surgery.—*Halle:* Dr. Gabriel Anton has been offered the chair of Mental Diseases and Neurology in succession to the late Professor Wernicke.—*Königsberg:* Dr. Otto Voss has been recognised as *privat-docent* of Ear Diseases.—*Leipsic:* Dr. Sudhoff, whose writings on Paracelsus are well known, has been appointed Extraordinary Professor of the History of Medicine. The chair is endowed by the widow of Dr. Theodor Puschmann in memory of her husband, the eminent medical historian.

Bubonic Plague in Peru.—Mr. Consul-General St. John, in a despatch from Lima to the Foreign Office, writes: "Bubonic plague exists at present in an endemic form in a number of places on the coast of Peru Since the first cases were reported in May, 1903, to the end of 1904, 1110 cases were reported, of which 558 terminated fatally. Many more cases must have escaped detection, as there has always been an extreme disinclination on the part of the poorer classes to avail themselves of the medical assistance given in the lazarettos, although it is considered that in the Lima lazaretto especially the treatment has been successful. The Lima local administration deserves credit for the manner in which it has coped with the evil, but the hygienic condition of all the towns still leaves a good deal to be desired. Sanitary stations have been established at Paita, Callao, and Ilo for the disinfection of ships by the Clayton apparatus. Quarantine is practically abolished unless deaths or suspicious cases have occurred during the voyage. Owing to the existence of the plague all along the coast and small-pox in the south passengers are compelled to observe various regulations as regards medical examination, the disinfection of luggage, and vaccination."

The Prevention of Anthrax among Wool-Sorters.—The *Engineer* of August 25th contains a long and copiously illustrated description of some new mechanical and structural arrangements which have been made in certain woollen factories with a view to the prevention of anthrax among the operatives. This disease is well known to run a very short course and to be extremely fatal, although cases of recovery have sometimes been recorded in our columns. The instructions issued by the Home Office state that anthrax is rare among the sheep of Great Britain and Australia, but that in China, Persia, Turkey, Russia, the East Indies, and many other parts of the world the disease is common. Infected fleeces, which may not differ from others in appearance, are often shipped to Great Britain. The wool from animals which have died from the disease is often packed with good wool and may infect the whole bale. These are termed "fallen" fleeces and it is in handling them that the strictest precautions must be taken. The wool-sorting rules therefore provide that the bales shall only be opened for the purpose of sorting by men skilled in judging the quality and condition of the material. The hair of the Angora or Cashmere goat, the llama, the alpaca, and the camel must be opened over a fan producing a downward draught in a room specially set apart for the purpose, quite separate and distinct from the sorting room, or from any room in which work other than opening is carried on. The most dangerous varieties, such as Van, mohair, and Persian, may only be opened after being thoroughly steeped in water and all damaged wool or "fallen" fleeces must, when opened, be damped with a disinfectant. The opening screen must not be less in area than 12 square feet and both its length and breadth must be at least three and a quarter feet. The velocity of the exhaust draught at any point of the screen within 18 inches of the centre must not be less than 150 linear feet per minute. The sorting room, exclusive of portions screened off, must provide an air space of at least 1000 cubic feet for each person employed. The dust carried by the exhaust draught from the opening screen and sorting boards must be discharged into a properly constructed settling chamber or receptacle and not into the open air. In the sorting room of Messrs. Firth, Crossley and Company, of Bradford, some improvements have recently been carried out by the Sun Fan Company, Limited. The sorting boards are ranged round two sides of the room, which is well lighted from the roof, and ample space is provided to the rear of the sorters for the "skeps" containing the sorted wool. Beneath the sorting benches runs the exhausting shaft, gradually increasing in diameter towards the fan so as to obtain a uniform draught from each board. The fan chamber, the settling chamber, and the opening room are partitioned off at one end of the sorting room. The settling chamber is of such dimensions and height that the dust falls slowly to the floor, none escaping at the turret outlet fixed on the roof. With a view to further reducing the possibility of discharging dust into the outside air the use of the cyclone dust collector has been adopted by Messrs. Matthews and Yates, Limited, of Manchester. It has been found that dust collectors which strain the air through filters of cloth or similar material not only set up considerable resistance to be overcome by the fan but in addition are difficult to clean and soon become quite choked in consequence.

Literary Intelligence.—A Life of Sir Henry Vane, at which Dr. William W. Ireland has been working for more than four years, will be published in October by Eveleigh Nash, London.

Death of a Centenarian.—Mrs. Amelia Oliver died at Newquay, Cornwall, on August 28th, aged 101 years.

BOOKS, ETC., RECEIVED.

Arnold, Edward, 41 and 43, Maddox-street, Bond-street, W.

Practical Physiology. By A. P. Beddard, M.A., M.D.; Leonard Hill, M.B., F.R.S.; J. S. Edkins, M.A., M.B.; J. J. R. Macleod, M.B.; and M. S. Pembrey, M.A., M.D. Second edition. Price 12s. 6d. net.

Ash and Co., Limited, Henry-street, Tooley-street, S.E.

Guy's Hospital Nursing Guide, Handbook of Nurses' League, and Register of Nurses Trained at Guy's Hospital. 1905. Third issue. Price 1s. 6d.

Baillière, Tindall, and Cox, 8, Henrietta-street, Covent Garden, W.C.

Cattle Tuberculosis. A Practical Guide to the Agriculturist and Inspector. By Harold Sessions, F.R.C.V.S., F.H.A.S., F.R.G.S., formerly Lecturer, Oxford University Extension and Sussex County Agricultural College. Second edition. Price 3s. net.

Caxton Press, Limited, 15, Furnival-street, Holborn, E.C.

The Bodie Book. Hypnotism, Electricity, Mental Suggestion, Magnetic Touch, Clairvoyance, Telepathy. By Walford Bodie, F.R.M.S., M.R.S.A., &c. (Fellow of the Royal Meteorological Society, Member of the Royal Society of Arts, Freeman of the City of London, Fellow of the Royal Colonial Institute, M.D. and C.M. Barrett College, Ph.D. and D.Sc. Chicago College of Medicine and Surgery). Price 2s. 6d.

Clark, R. and R., Limited, Brandon-street, Edinburgh.

Clinical Studies. A Quarterly Journal of Clinical Medicine. By Byrom Bramwell, M.D., F.R.C.P.E., F.R.S.E., Physician to the Edinburgh Royal Infirmary, Lecturer on Clinical Medicine in the School of the Royal Colleges, Edinburgh. Vol. III. Price 9s.

Falconer, John, 53, Upper Sackville-street, Dublin.

Transactions of the Royal Academy of Medicine in Ireland. Vol. XXIII. Edited by James Craig, M.D., F.R.C.P.I., General Secretary; Physician to the Meath Hospital and County Dublin Infirmary. Price not stated.

Fischer, Gustav, Jena.

Beiträge zur Typhusforschung. Von Dr. J. Borntraeger, Regierungsund Medizinalrat in Düsseldorf, Dr. Lentz, Kreisassistenzarzt in Idar a.d.Nahe. Dr. Julius Tietz in Idar a.d.Nahe, Stabsarzt Dr. Seige in Saarlouis und Stabsarzt Dr. Vagedes in Berlin. Abdruck aus dem Klinischen Jahrbuch. Vierzehnter Band. Price M.3.

Glaisher, Henry J., 57, Wigmore street, Cavendish-square, W.

A Plea for the More Energetic Treatment of the Insane. By Charles Williams, L.R.C.P., L.R.C.S., L.S.A., formerly Resident Assistant Medical Officer, Heigham Hall Asylum; Junior Medical Officer, Shaftesbury House Asylum, &c. Price 1s. 6d. net.

Griffin, Charles, and Company, Limited, Exeter-street, Strand, W.C.

Smoke Abatement: A Manual for the Use of Manufacturers, Inspectors, Medical Officers of Health, Engineers, and others. By William Nicholson, Chief Smoke Inspector to the Sheffield Corporation. Price 6s. net.

Clinical Diagnosis: The Bacteriological, Chemical, and Microscopical Evidences of Disease. By Rudolf v. Jaksch, M.D., Professor of Special Pathology and Therapeutics Director of the Medical Clinic in the German University of Prague, Ordinary Member of the Supreme Sanitary Council Fifth English edition Based upon the fifth German edition, but containing additional Matter and Illustrations Edited by Archibald E. Garrod, M.A., M.D., F.R.C.P., Assistant Physician to, and Lecturer on Chemical Pathology at, St. Bartholomew's Hospital. Price 24s. net.

HEBERT, MADAME M H, *Guardian* Office, Sheerness

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Statistical Tables of the Patients under Treatment in the Wards of St Bartholomew's Hospital during 1904 By the Medical Registrars, P Horton Smith Hartley, M D Cantab, F R C P, T J Horder, M D, and the Surgical Registrar, G E Gask, F R C S Price not stated

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication*

BIRT, A C, M R.C S, L R C P, has been re appointed to the Skin Department at St Thomas's Hospital

BLETSOE, J H, M B B S Lond, M R.C S, L R C P, has been appointed Resident House Surgeon at St Thomas's Hospital

BULLEY, F M, M A Cantab, M R C S L R C P, has been appointed House Physician to Out-patients at St Thomas's Hospital

COTTON, R H, M R C S, L R C P, has been appointed to the Throat Department at St Thomas's Hospital

COUTTS, D K, M B, B S Lond, M R C S, L R C P, has been appointed Resident House Surgeon at St Thomas's Hospital

COX, R J H, M R C S L R C P, has been re appointed to the Throat Department at St Thomas's Hospital

CROSSLEY, LEONARD, M D Edin, has been appointed Senior Resident Medical Officer to the Royal National Hospital for Consumption, Ventnor, Isle of Wight

DEAN, H R, B A, M B, B Ch Oxon, M R C S L R C P, has been re appointed Resident House Physician at St Thomas's Hospital

DREW, J H M B, B S Lond M R C S, L R C P, has been appointed House Surgeon to Out patients at St Thomas's Hospital

DREW, JOHN, M D Glasg, has been appointed Certifying Surgeon under the Factory and Workshop Act for the Stirling District of the county of Stirling

ELLIS, FRANCIS H, B A, M B, B C Cantab, M R C S Eng L R C P Lond has been appointed Assistant Resident Medical Officer at the London Open air Sanatorium Pinewood Wokingham Berks

EYRE, C R B M R C S, inted Junior Ophthalmic House Surgeo

FALK, H, B A Cantab, M B P, has been appointed House Surgeon t as's Hospital

GRAY, H T, B A Cantab, M R C S, L R C P, has been appointed House Surgeon to Out-patients at St Thomas's Hospital

GREENWOOD T PARKER M D, B Sc, has been appointed Assistant Medical Officer at the County Asylum, Radcliffe, Notts

HOOKER, A W, M B, B S Lond, M R C S L R C P, has been appointed House Surgeon to Out patients at St Thomas's Hospital

INMAN, A C, M A, M B, B Ch Oxon, has been re appointed Resident House Physician at St Thomas's Hospital

KEMP, FREDERICK W, M B, B Ch Durh, M R C S Eng, L R C P Lond, has been appointed Junior House Surgeon at the Radcliffe Infirmary, Oxford

KISCH, H A, M R C S, L R C P has been appointed Junior Casualty Officer at St Thomas's Hospital

KNOWLES, THOMAS, M D Edin, has been appointed Certifying Surgeon under the Factory and Workshop Act for the Gargrave District of the county of York

LANGLEY, G J, M B, B S Lond, has been appointed Resident House Physician at St Thomas's Hospital

LECKY, H C, M B, B Ch Oxon, has been appointed House Physician at the Radcliffe Infirmary, Oxford.

MACKENZIE, JOHN W, M D Edin, has been appointed Assistant Member of the Medical Staff of the Northern Infirmary, Inverness.

McDERMID, PETER, M B, Ch B, has been appointed Junior Physician to the Lancashire County Asylum, Winwick

MEEK W O, M R C S, L R C P, has been appointed House Physician

MORGAN, L R C P, has been appoin mas's Hospital.

MOSSOP, E E, M B, B S Lond, M R C S L R C P, has been appointed Senior Obstetric House Physician at St Thomas's Hospital

NEAVE, SHEFFIELD, M R C P Lond, M R C S Eng, has been appointed Assistant Physician to the North Eastern Hospital for Children

NORBURY, L E C, M B, B S Lond, M R C S, L R C P, has been appointed Resident House Surgeon at St Thomas's Hospital

NORWOOD, WILLIAM L, L R C P, L R C S Edin, L F P S Glasg has been appointed Certifying Surgeon under the Factory and Workshop Act for the Bellanagh District of the county of Cavan

PARRY, E W M R C S, L R C P, has been appointed Senior Casualty Officer at St Thomas's Hospital

PRICE, FREDERICK W, M B, M R C P, has been appointed Medical Registrar to Westminster Hospital

PULLIN, THOMAS H S, M D St And, F R C S Edin, M R C S Eng, L S A, has been re appointed Medical Officer of Health of Sidmouth, Devon, for three years

REEDE, AUGUSTUS KEPPEL, L R C P, L R C S Edin, L A.H Dub has been appointed Medical Officer and Public Vaccinator for the Upottery and Dunkeswell Districts by the Honiton (Devon) Board of Guardians

RICHMOND, JAMES R MARR L S A, has been appointed Medical Officer of Health for the West Penwith (Cornwall) Rural District

ROUTLEY EDWIN W, M D Brux, D P H Cantab, M R.C S Eng, L R C P Lond, has been appointed Medical Officer of Health of Aldershot and Medical Superintendent of the Isolation Hospital, North Town, Aldershot

SINGTON, H S, M R C S, L R C P, has been appointed to the Ear Department at St Thomas's Hospital

THOMPSON, R J C, M R C S, L R C P, has been appointed Resident House Surgeon at St Thomas's Hospital

WARD, W C A, M R C S, L R C P, has been appointed to the Skin Department at St Thomas's Hospital

WRIGHT, F R E, M B Lond, M R C S, L R C P, D P H, has been appointed Senior Ophthalmic House Surgeon at St Thomas's Hospital

WYATT, J M, M R C S, L R C P has been appointed Junior Obstetric House Physician at St Thomas's Hospital

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM GENERAL DISPENSARY —Resident Surgeon Salary £150 per annum, with rooms, fire, lights, and attendance

BRIGHTON, HOVE AND PRESTON DISPENSARY —House Surgeon Salary £160, with rooms, coals, gas, and attendance

BRIGHTON THROAT AND EAR HOSPITAL, Church street, Queen's road —Non resident House Surgeon for six months, renewable Salary at rate of £75 per annum

CARMARTHENSHIRE INFIRMARY —Resident Medical Officer, unmarried Salary £100 per annum, with apartments, board, attendance washing &c

CROYDON GENERAL HOSPITAL —Senior and Junior House Surgeons Salary, senior position £105, junior position £60, with board, laundry, and residence

DARLINGTON HOSPITAL AND DISPENSARY —House Surgeon, unmarried Salary £120 with board and lodging

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S E —Eight qualified Clinical Assistants

GLASGOW DISTRICT ASYLUM Woodilee Lenzie —Junior Assistant Medical Officer Salary £125 per annum, with board apartments, and washing

GREAT NORTHERN CENTRAL HOSPITAL Holloway —Senior House Surgeon, Senior House Physician, Two Junior House Surgeons, and One Junior House Physician for six months Salary of senior officers at rate of £60 per annum and of junior officers at rate of £30 per annum with board and residence

HAMPSTEAD GENERAL HOSPITAL —Resident Medical Officer for six months Salary at rate of £120 per annum

HASTINGS, ST LEONARDS AND EAST SUSSEX HOSPITAL —Assistant House Surgeon Honorarium 10 guineas for six months, with residence, board and washing

HEREFORDSHIRE GENERAL HOSPITAL—House Surgeon Salary £100 per annum, with board, apartments and washing

LEEDS CITY OF, INFECTIOUS DISEASES HOSPITAL AND SANATORIUM —Resident Medical Officer Commencing salary £150 a year, with board, lodging, and washing

LIVERPOOL, CITY OF, FAZAKERLEY HOSPITAL FOR INFECTIOUS DISEASES. —Medical Superintendent Salary £400 per annum, increasing to £600 with house, coal, and lighting

LIVERPOOL DAVID LEWIS NORTHERN HOSPITAL —House Surgeon Salary £60, with board and residence

LIVERPOOL INFIRMARY FOR CHILDREN —Assistant House Surgeon for six months Salary £30 with board and lodging

LONDON TEMPERANCE HOSPITAL—Assistant Resident Medical Officer for six months Honorarium at rate of 50 guineas per annum, with board and residence

MAIDSTONE KENT COUNTY OPHTHALMIC HOSPITAL —House Surgeon. Salary £100, with board

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer for the Crossley Sanatorium, Delamere Forest, Cheshire. Salary £50 per annum, with board, apartments, and laundry.

MELBOURNE, UNIVERSITY OF.—Professor of Anatomy. Salary £800.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Anæsthetist. Honorarium 25 guineas per annum. Also Assistant Physician. Also House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon for six months. Salary of House Physician and House Surgeon at rate of £[illegible] a year, and Assistant House Physician and Assistant House Surgeon at rate of £20 a year.

NORTHAMPTON GENERAL HOSPITAL.—Assistant House Surgeon. Salary £50 a year, with apartments, board, washing, and attendance.

READING, ROYAL BERKSHIRE HOSPITAL.—House Physician for six months. Salary £[illegible] per annum, with board, lodging, and washing. Also House Surgeon. Salary £[illegible] per annum, with board, lodging, and washing. Also Assistant House Surgeon. Salary £60 per annum, with board, lodging, and washing.

ROCHDALE INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry.

ROYAL DENTAL HOSPITAL AND LONDON SCHOOL OF DENTAL SURGERY, Leicester-square.—Lecturer on Dental Surgery and Pathology.

ROYAL DENTAL HOSPITAL, Leicester-square.—Morning House Anæsthetist. Honorarium £50 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House Physician for six months. Salary at rate of £[illegible] per annum, with board, lodging, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS EYE HOSPITAL), City-road, E.C.—Senior House Surgeon. Salary at rate of £100 a year, with board and residence.

SUNDERLAND, MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and laundry.

TOTTENHAM HOSPITAL, London, N.—Honorary Anæsthetist.

WREXHAM INFIRMARY.—Honorary Ophthalmic and Oral Surgeon.

Births, Marriages, and Deaths.

BIRTHS.

COAD.—On Sept. 1st, at Elgin-avenue, Maida-vale, W., the wife of Dr. Stanley Coad, of a daughter.

FULLER.—On Sept. 1st, at Crescent-road, Crouch End, the wife of J. R. Fuller, M.D., B.S., of a daughter.

HINDS.—On Sept. 2nd, at Tennyson-road, Worthing, the wife of Frank Hinds, M.D., of a son.

HODGSON.—On Sept. 3rd, at Westcliff-on-Sea, Essex, the wife of Victor James Hodgson, M.R.C.S., L.R.C.P., D.P.H. Camb., of a daughter.

PARKER.—On August [illegible]th, at Hillside, Mooi River, Natal, the wife of Anthony Scott Parker, M.B. Edin., of a son.

TWEEDY.—On August 31st, at Abbey House, Kenilworth, the wife of Reginald Carlyon Tweedy, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

BOREHAM—BRAMSDON.—On Sept. 2nd, at Christ Church, Bloomsbury, H. W. Boreham, M.B., Ch.B., of Blaby, Leicestershire, only son of the late W. Tedman Boreham, M.D., of Teignmouth, to Edith, second daughter of the late J. Bramsdon, of Bromley, Kent.

DE ZILWA—SACHS.—On August 12th, at Park Chapel, Arlington-road, Regent's-park, N.W., by the Rev. E. J. Dukes, Lucian Arnold Emmanuel de Zilwa, M.B., B.Sc. Lond., to Charlotte Eleanor (Lena), eldest daughter of Mrs. Sachs and of the late John Sachs, of Chancery-lane and Camden Town. No cards.

HARMAN—CHAMBERLAIN.—On Sept. [illegible]th, at the Church of The Messiah, Birmingham, N. Bishop Harman, F.R.C.S., of Harley-street, London, to Katherine Chamberlain, M.B., third daughter of Arthur Chamberlain, Esq., of Moor Green Hall, Birmingham.

HAY—GROVES.—On August [illegible]th, at Holy Trinity Church, Weymouth, by the Rev. Canon Weldon, D.D., Archibald Gilchrist Hay, M.A., M.D., to Mabel Constance, daughter of Sir John Grove.

MORISON—SIMONSEN.—On Sept. 5th, 1905, at Greenside Parish Church, Rutherford Morison, 14, Saville-row, Newcastle-on-Tyne, to Lili Simonsen, Mandal, Norway.

SPURRIER—CATO.—On Sept. 2nd, at All Saints Church, Upper Norwood, by the Rev. W. [illegible], Harry Spurrier, M.B., B.Ch. Cantab., M.R.C.S., L.R.C.P., to Mary, daughter of Wilson Robert Cato.

DEATHS.

GALLWEY.—On August [illegible]th, at Suffolk-place, Pall Mall, London, S.W., Mathew [illegible] Gallwey, late Colonel, Royal Army Medical Corps.

HOWELL.—On Sept. [illegible]th, at the Old Vicarage, Wandsworth, Thomas Symonds Howell, M.R.C.S. Eng., L.S.A., aged [illegible].

LITTLEJOHN.—On Sept. [illegible]th, at Buckland-crescent, Hampstead, Thomas Herbert Littlejohn, F.R.C.S. Edin.

MARKHAM SKERRITT.—On Sept. 2nd, at Ivor House, Durdham Park, Clifton, [illegible], after a very brief illness, [illegible] only daughter of E. and M. D. Markham Skerritt, aged [illegible] years.

McCONAGHY.—On Sept. 2nd, 1905, at [illegible], [illegible] Surgeon-General William McConaghy, M.D., Indian Medical Service.

THOMSON.—On Sept. [illegible], at Bourne End, William Francis Thomson, L.R.C.P., M.R.C.S., L.S.A.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

RIDERS TO THE VERDICTS OF CORONERS' JURIES.

THERE is at least one serious wrong for which the law provides no remedy. That wrong is of very frequent incidence on members of the medical profession. It is that of an unjust judgment pronounced by what is, in outward semblance, a judicial court, in the form of what is known as a "rider" to the verdict of a coroner's jury. The "rider" to a verdict of a coroner's jury cannot be quashed, as the verdict itself can. It is merely an irresponsible statement made by a jury, to which coroners give an importance not legally belonging to it by accepting it. Such "riders," however false and harmful, cannot be dealt with as slanders, owing to the protection of "privilege." Moreover, a newspaper is privileged in publishing them and if it publishes any reasonable explanation or contradiction sent for publication no action will succeed against the newspaper. The following is an example of the annoyance to which medical men may be subjected by reckless "riders." On August 23rd Mr. W. Linford Brown (city coroner) held an inquest at Exeter police-court on the death of Jane Baker. Mrs. Baker died suddenly from apoplexy and a medical man was sent for, but according to the evidence the medical man's wife called down to the messenger to go for Mrs. Baker's own medical attendant. Certain members of the jury expressed great indignation that the medical man did not go at once and ultimately, without giving the medical man, who was not present, any opportunity to explain, a "rider" was added to the verdict of "Death from natural causes" to the effect that "the jury were of opinion that Dr. H—— should have attended." The coroner, in the course of his remarks, is reported to have said: "If the statement of the refusal to attend was correct and the refusal was made with Dr. H——'s knowledge, it was a case of very great neglect of moral duty unless the doctor's own bodily health was such that he could not have gone." The medical man first heard of this "rider" from a patient, after the account of the inquest had been published all over the neighbourhood. His explanation, which he then published, was a simple one. He was out when sent for and his wife offered to tell him of the summons when he came in, an offer which was refused. The sensational paragraph recording the inquest has been read by many more persons than will read the medical man's modest little letter of explanation.

QUAINT SYMPTOMATOLOGY.

To the Editor of THE LANCET.

SIRS,—The mother of a boy who suffers from fits said to me the other day in describing his symptoms: "he loses conscientiousness and can't speak to you, but he foments at the mouth." These fits are evidently epileptic and the "loss of conscientiousness" may be unintentionally but accurately diagnosed, for we know of that moral deterioration commonly found in such cases. I am, Sirs, yours faithfully,

E. S.

TWO QUEER QUESTIONS.

WE have received letters asking us the following two queer questions: 1. "Would you mind mentioning, if not too much trouble, the best works on crepitation or bronchitis, the cheaper the better if valuable." 2. "I am desirous of establishing a mail-order business for a hair wash made from four different chemicals, one of which is poison. I am not a registered chemist or druggist and I wish to know if I could be prosecuted for selling such a hair wash. . . . If I omit the poison and prepare the hair wash from non-poisonous chemicals solely would I be safe?" The answer to the questions is, of course, respectively: 1. Consult a medical man; 2. Consult a solicitor; but lest our correspondents should think that we are replying curtly to save ourselves trouble we will add a few words concerning the mental attitude of the writers, which seems to us quite interesting. We are, of course, constantly asked similar questions, but these two are typical of the position into which ignorant people are betrayed. Each writes an absolutely polite letter asking, as a small favour, information from us which each appears to think that it will be quite reasonable for us to give him. Each will be surprised to find that any exception can be taken to their action in addressing us. Yet the first of our correspondents is trying to get from a medical paper gratuitous medical information, and the second wants a hint on how, having no qualification whatever either as medical man or druggist, he can sell a medical application, possibly poisonous in its nature. An evening paper has recently ceased to exist in the pages of which there were wont to appear week by week columns of the most eccentric and sometimes the most mischievous advice to the public upon medical matters. The editor of this paper would have doubtless felt justified in encouraging the gentleman with "crepitation" to heal himself by the aid of a book, and in instructing the vendor of a hair wash (the ingredients of which can be varied without respect to therapeutics) how to get at the public with the least risk of the law's interference. But the mantle of the Echo has not fallen upon us, we do not dare so greatly. We must refuse to help the first writer to kill himself and the second writer to kill the public.

"INFAMOUS CONDUCT"

To the Editors of THE LANCET

SIRS,—"Inquirer" raises a point of great interest in THE LANCET of August 19th when he asks what constitutes "infamous conduct" in a professional sense. Roughly speaking, a man may lose his diplomas from committing a felony to giving a laudatory testimonial in favour of a proprietary medicine. In the absence of a specific ruling on the matter by the General Medical Council the practitioner might fall back upon the by laws of the licensing body *from which he received* qualifications to practise. Unfortunately for his guidance the universities and colleges follow dissimilar lines in supplying their alumni with extra professional information. For instance, of the surgical bodies the English College gives its Members a copy of the by laws on admission, the Irish College will permit a Licentiate to see a copy of the by laws on making personal application at the College, but the Scotch body only gives its by laws to Fellows.

I am, Sirs, yours faithfully,
August 26th, 1905 S WESLEY WILSON

To the Editors of THE LANCET

SIRS —Whilst agreeing with "An Expert" that the General Medical Council suffers from a certain amount of haziness in its decisions, still I might be allowed to point out that such is impossible to avoid as each case has to be judged upon its own particular merits, and a law like that of the Medes and Persians would be inapplicable. However, notwithstanding this, "An Expert" would be doing a public service if he would tabulate the decisions which have been given already.

I am, Sirs, yours faithfully,
Sept 4th, 1905 INQUIRER

A POINT UNDER THE MIDWIVES ACT

To the Editors of THE LANCET.

SIRS,—A few evenings ago I was called to a house being told it was for a confinement, but for which I had not been engaged. On arriving at the house I was informed that the child had been born some hours before I was sent for and that the case had been conducted by a woman who had not complied with the requirements of the last Midwives Act. The woman told me she had sent for me "to see that everything was all right." This is similar to a case I had a few days previously. I shall be much obliged if you would inform me through your columns whether this is legal conduct on the part of the women. If it is not I should like to know what penalty they are liable to and also what course you would advise the medical man to pursue. Thanking you in anticipation,

I am, Sirs, yours faithfully,
August 23rd, 1905 LANCS

*** The Midwives Act, so far as it at present applies, prevents a woman not registered under the Act from calling herself a midwife or using any title implying either registration or special qualification to practise midwifery. On and after April, 1910, penalties are prescribed for any woman not registered who habitually and for gain attends women in childbirth. This, it will be seen, will not make it penal for one woman to deliver another, nor for her to accept a reward for doing so in an isolated instance, but, to put it in other words, will forbid an uncertified woman to practise as a midwife. The woman described in the letter of "Lancs" is apparently liable to no penalty upon the facts stated by him —ED L

"A SANITARY PELVISETTE"

WE have received from Mr F Michaels an appliance to which he has given the above name. It is shortly a shaped piece of indiarubber with tapes which is to be used in combination with a pad of some absorbent material in cases of ordinary or profuse menstruation or other vaginal discharges. The inventor claims that as it is waterproof there is no possibility of the patient's linen being soiled, that it can readily be detached or cleansed, that it may be used for pathological discharges and may be sterilised by boiling, that no chafing or discomfort accompanies its use, and that it dispenses with the use of diapers and towels. In our opinion, for ordinary purposes there is no advantage in having any impermeable cover to the diaper or pad used in menstruation, and we think that it is far more cleanly simply to use some material which can be burnt when finished with. The apparatus may be useful in cases of very profuse menstruation or of pathological discharges but in that case we consider that the india rubber prolongations of the cover to which the tapes are attached are too short and that there is a risk of the tapes getting soiled. If these were made longer it is possible that some people might like to use it instead of the ordinary diaper.

SANITATION AT ST HELENA

IN the annual report of St Helena recently issued the governor points out several sanitary improvements which have been effected in the island during 1904. Chief among them is the new system of drainage and water supply installed at Jamestown. Apparently it was needed, for during the operations of building and excavation revelations were made of the most deplorable drainage arrangements previously existing. "Pipes of various sizes and of different quality, badly jointed if jointed at all and laid regardless of line or gradient, frequently having the fall the wrong way, and often half full of solid matter." Such is the picture drawn by the governor himself. The main drainage was completed at the end of the year and connected with a number of the larger properties, including all the Government buildings. The work of connecting the rest of the houses is in progress. The improved health of the prisoners is no doubt due to this new water system and to the substitution of a pavement of concrete for the old cobble stones in the gaol yard. The death rate for the year is the lowest recorded since 1897, the decrease in the number of cases of beri beri from nine in 1903 to two in 1904 being most satisfactory. An epidemic of enteric fever was attributed to probable contamination of the water supply owing to the heavy floods which took place in April, when the water swept down from the highlands, carrying soil and crops with it and doing considerable damage to the new works in course of construction. The colonial surgeon, Dr W J J Arnold, is indefatigable in his efforts to improve the sanitary condition of the colony. The old earth floors are gradually being abandoned and sufficient means of ventilation are insisted on. The great drawback to the success of the colony is that while possessing a civil population of 3453 it has no industry. Efforts are being made to work the flax plant, which, as well as the *Furcraea* aloe, thrives in St Helena. The cultivation of several varieties of trees of which the seeds were sent from Kew Gardens was attempted but the only successful result was in the eucalyptus, of which there are several species in the island. The mean temperature recorded for last year was 60 40°, and as the governor states in his report "the highlands of St Helena possess a climate that is in no sense tropical. The sun is never really too hot. In fact, it is difficult to believe that St Helena is in the tropics when one reaches the high grass lands."

THE TREATMENT OF MEDICAL MEN AT HARROGATE BATHS

To the Editors of THE LANCET

SIRS,—I shall be glad if you will kindly insert a few comments in reply to the letter on this subject in THE LANCET of August 19th, and allow me to condemn at the outset this method of flying into public print over such an isolated case when a private letter of protest to the manager would have amply met the case. I may say that I had a West-end physician visiting me last week and simply by mentioning my name to the manager he was shown every courtesy and personally conducted round the baths by Mr Buckland and given every facility of trying the baths during his stay. Now I take it that it is a matter of profit or loss (at least the corporation look upon it as such) and I fail to see why, just because the writer is a medical man and has served his country for 27 years (not for love alone!) he should be entitled to come year after year and partake of the waters and baths free. It is a different matter when a medical man in active practice gets this privilege (and a great privilege it is) that he in turn can send patients for the cure and thereby greatly assist the success of the baths, which, might I add, will certainly compare favourably with any of those in or out of England.

I am, Sirs, yours faithfully,
Harrogate, August, 1905 D B, L R C P Lond, M R C S Eng

VOLUNTEER MEDICAL OFFICERS

To the Editors of THE LANCET

SIRS,—Why are surgeons of Volunteer corps, who have obtained the necessary certificate of proficiency, superseded by a Royal Army Medical Corps man for examining and reporting on the fitness of recruits (Volunteers) under Mr Arnold Forster's latest regulation? Is it that the proficiency examination is not considered sufficient to qualify them for the work or because the War Office authorities desire to pass a gratuitous affront upon them?

I am, Sirs, yours faithfully,
August 29th, 1905 SURGEON CAPT VOL CERTIF

"WIRELESS" ELECTRIC BATTERY

THIS apparatus consists of a battery of dry cells and a small induction coil contained in a nickel case, contact being established by sliding one of the ends of the case outwards. On grasping the case and pulling the cover outwards the effects of an interrupted current are felt, the intensity increasing as the cover is pulled. The apparatus may thus conveniently be employed for the application of a faradic current to various parts of the body. Although the battery may be called, strictly speaking, "wireless" since there is no wire, yet the case itself serves the purpose of a wire. There are no electro-magnetic waves propagated in the ether as the title might imply. But the apparatus is ingenious. It is made by the Wireless Battery Company, of 80A, Southwark street, London, S E

WANTED—A HOME

To the Editors of THE LANCET

SIRS,—I would be much obliged if any of your readers could tell me of a home for a youth, aged 20 years, who is mentally weak. He is not quite an idiot—can speak and behave sensibly but is subject to violent outbreaks of temper and might be dangerous at these times. His people are fairly well off and wish to pay £80 to £100 a year for his charge.

I am, Sirs, yours faithfully,
Sept 2nd, 1905 W H G

◆

H W L—The bottle enclosed by our correspondent would certainly safeguard a person from taking by misadventure any poison kept in such a bottle, but, as we have said upon many previous occasions, the commonest instances of poisoning by misadventure are those in which carbolic acid, oxalic acid, cyanide of potassium, and other poisons used in the arts or for domestic purposes, are kept in bottles which have previously held whisky, ginger-beer, or other more or less innocent fluids.

H. A.—The wording of the paragraph is ridiculous and it is most improbable that either of the two persons whose names are mentioned have had anything to do with its insertion.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (11th).—London (2 P.M.). St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.). Royal Ear (2 P.M.).

TUESDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (13th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.).

THURSDAY (14th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.). Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.).

FRIDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.). Throat, Golden-square (9.30 A.M.). City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (16th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (11th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M. Dr. Arthur: Skiagraphy.

TUESDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Dr. C. O. Hawthorne: Clinique. (Medical.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M. Dr. Shuter: Anæsthetics.

WEDNESDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Mr. J. Clarke: Clinique. (Surgical.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—3 P.M. Mr. Bidwell: Intestinal Surgery.

THURSDAY (14th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M. Dr. Arthur: Skiagraphy.

FRIDAY (15th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, (22, Chenies-street, W.C.).—4 P.M. Mr. M. Yearsley: Clinique. (Ear.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M. Dr. Shuter: Anæsthetics. 4.30 P.M. Mr. Bidwell: Intestinal Surgery.

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IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

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Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

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METEOROLOGICAL READINGS.

(Taken daily at noon by Steward's Instruments.)

THE LANCET Office, Sept. 7th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks
Sept. 1	30·21	N.W.	...	105	64	54	53	57	Overcast
" 2	29·84	W.	0·02	94	69	57	58	61	Cloudy
" 3	29·89	W.	...	118	75	59	59	64	Cloudy
" 4	30·05	W.	...	115	72	60	61	64	Cloudy
" 5	29·94	S.W.	...	106	70	53	61	63	Cloudy
" 6	29·70	N.E.	0·07	83	70	63	64	66	Raining
" 7	29·57	S.W.	0·17	81	64	59	59	63	Cloudy

During the week marked copies of the following newspapers have been received:—*Yorkshire Post, Liverpool Daily Post, Surrey Advertiser, Presbyterian, Belfast News Letter, Oldham Standard, Buxton Herald, &c.*

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A Lecture

ON

ANGINA PECTORIS AND ALLIED CONDITIONS.

Delivered at the Medical Graduates' College and Polyclinic, London, on May 23rd, 1905,

BY THOMAS OLIVER, M.A.DURH., M.D.GLASG., LL.D., F.R.C.P. LOND.

PHYSICIAN TO THE ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE.

GENTLEMEN,—Although it is difficult to compare different varieties of pain with each other it is generally admitted that one of the most painful affections man can suffer from is angina pectoris. Not a disease in the usual acceptation of the term but simply a group of symptoms and therefore entirely subjective, the pain over the præcordial region in angina pectoris comes without warning, is paroxysmal in character, and of varying severity. For much that we know of the malady we are indebted to such of the older writers as Morgagni, Heberden, Jenner, and John Hunter; in recent times to Gairdner, Broadbent, Osler, Lauder Brunton, Gibson, and Douglas Powell in this country, and to Huchard and Rosenbach abroad. Heberden, who wrote in 1768, gives an accurate account of the spasmodic seizure and draws attention to the usual circumstances in which it occurs. It is the accompanying sense of angor or anguish and the knowledge that it frequently ends in death that make angina pectoris such a dreaded illness.

A definition of angina pectoris is difficult owing to the fact that being symptomatic we only know it as it is described by patients. Pain and angor are the main symptoms and yet there are cases in which neither pain nor anguish is a prominent feature. All præcordial pain, even though it persists for a time, or comes and goes, is not angina, nor are attacks of præcordial pain accompanied by distressing palpitation angina, even though by their recurrence they render life miserable. If there is one circumstance more than another which is characteristic of angina pectoris it is the feeling of impending dissolution, the mental anguish, or angor animi, of which most patients complain. This angor exercises an unnerving influence upon the patient so far as his immediate feelings and his future welfare are concerned. What usually happens in the seizure is something like this:—A man past the middle term of life, who looks the picture of health and is in possession of all his faculties, who has reached that stage of life in which he is doing his best work, estimated from a worldly standpoint, rises one morning from the breakfast table, not having eaten more heartily than has been his wont, and is proceeding to business when he has his first attack of angina pectoris. He is not conscious of having hurried, but it may be that his way lies slightly uphill and that on this particular occasion he is facing a stronger wind than usual, or without this, when all at once he is seized with pain over the sternum which obliges him to stop and stand where he is; he has no difficulty of breathing, but he has the sensation that if he were to attempt to take another step it would be his last one. Just at this point the pain gradually or quickly subsides, perspiration breaks out, and the individual, although relieved from pain, feels that he has received a shock, for he is shattered in his nervous system. This, the first, attack of angina pectoris is for that patient the forerunner of others, in one of which he will probably die, or it may be that the seizure just described does not entirely disappear but the pain remits only to return, or it does not remit at all and the patient dies in this his first and only seizure. It is not often given to medical men to see a patient during the seizure, nor is the attack quite the same in every individual. In the few cases which have come under my observation the face has sometimes been pale and of an ashy-grey colour; in other patients there has been not pallor but flushing of the face; the pulse in one or two instances has suddenly ceased to be felt in the radial arteries, while in other patients it has been small and somewhat irregular, or, if slow at first, it has soon afterwards become accelerated, but unsteady and flickering. Sometimes the patient looks as if he would faint but just at this point a cold perspiration breaks out and, although this is followed by relief to pain, there yet remain an indescribable sense of shakiness and a feeling of insecurity.

VARIETIES OF ANGINA PECTORIS.

Since in some patients who have suffered from angina pectoris an organic lesion of the heart, of the aorta, or coronary arteries is found after death and in others who have suffered for years and who have recovered no well-defined organic lesion probably exists, it is customary to divide cases of angina pectoris into organic and functional or, as they are sometimes called, true angina pectoris and false or pseudo-angina. In the true form the lesions generally found are aortitis, syphilitic or otherwise, diseased coronary arteries, myocarditis, fatty degeneration, and valvular disease; while under the functional form are included the purely neurosal types met with in young females or in women close upon the menopause; also both in men and women those forms that are reflex from abnormal conditions of the stomach and abdomen; toxic forms in women from diseased conditions of the thyroid and in men from the excessive use of tobacco or as a consequence of the combined influence of high living and the free use of alcohol. To these may be added the vaso-motor type described by Nothnagel and which is closely related to the neurosal. In addition to the above there are cases in which all sorts of attitudes are assumed by the patient to obtain relief and in which, although præcordial pain is a feature, yet it is not accompanied by anguish and still the attack may end in death. There is a particular form of cardiac disease attended by an indescribable sensation over the heart not amounting to pain and not necessarily accompanied by palpitation or a sense of difficulty of breathing to which Sir William Gairdner, "recognising its pathological significance and alliance with the painful angina of Heberden," gave the name of *angina sine dolore.* This comparatively speaking painless and ill-defined type of angina is found associated with varying forms of cardiac disease that end in death and as the attacks keep recurring they impress themselves upon the patient, creating not so much a feeling of anguish as one of cardiac oppression and insecurity which he cannot define. In the more aggravated forms of angina sine dolore the patient during his short and unrefreshing slumbers utters a sharp and sudden cry as if in pain. This half-consciously uttered cry, for pain is probably absent, is the outcome of a feeling of pressure about the chest, for the breathing is observed to be somewhat gasping or quickened, and yet there is not sufficient evidence of pulmonary or pleural disease to explain the rapid breathing, the restlessness and the agony which are as truly anginal in character as some of the more classic attacks with which we are familiar.

In these latter remarks I have drawn a picture often furnished by patients in the terminal stage of such varying forms of cardiac disease as dilated heart, adherent pericardium and aneurysm of the first part of the arch of the aorta, and yet the lesions found in such patients post mortem throw frequently just as little light upon the nature of the attacks as the conditions found in pure angina. Besides, we have all seen patients for long the subjects of severe præcordial pain gradually lose the pain and death come preceded by signs of dilated heart and cardiac failure.

SYMPTOMATOLOGY.

There are, as Osler truly remarks, three elements which play an important part in angina pectoris—viz., muscular exertion, mental emotion, and digestive disturbances. Movement of any kind increases the liability to pain owing to the extra strain which is thrown upon the heart, but when the attacks have been recurrent a time arrives when they are apt to come on without any exertion at all. Facing a cold wind is apt to induce a painful seizure, especially if the way is up hill and any extra effort is being put forth. As for the influence of mental emotion allusion need only be made to the case of the distinguished surgeon and anatomist John Hunter in order to recognise the power of mental excitement and worry for harm. Worry equally brings on præcordial pains in pseudo-angina. In many patients a distended state of the stomach with gastro-intestinal disturbance seems to be related in some way or other to the attacks of severe pain. During the paroxysm the face may be either pale or flushed. In one patient whom I saw with Mr. G. H. Norris of Gateshead, and in whom the slightest movement is sufficient to bring on violent pain, there are almost contemporaneously with the præcordial pain flushing of the face and a distressing sense of throbbing in the back of the head and neck. Respiration may be quickened. Usually, however, there is no difficulty of breathing; the patients tell us afterwards that in the attack there was no feeling of the need of air. The pulse varies. In one patient I have felt the pulse suddenly cease in the radial artery and observed the face become extremely pale; in others the pulse becomes quick and small, or it is hard to the finger. Huchard lays stress upon the inequality of the radial pulses in the absence of intrathoracic aneurysm as an important physical sign of angina. Should the patient be out of doors and walking when the attack comes on he is obliged to remain standing, leaning upon any object that may be conveniently at hand; he is unwilling to stir on account of the feeling of impending death.

Usually the sternal pain is extremely severe, but there are attacks of angina in which the real character of the seizure may be overlooked owing to pain not being a prominent symptom. Its place is taken by a slight fainting feeling. Consciousness, however, is seldom lost unless it be in the final seizure when death comes through syncope. Complaint is frequently made of a sense of oppression in, or of a heavy weight lying upon, the chest. Patients point to the manubrium sterni and the præcordium as the parts of the chest where pain is most acutely felt. From here the pain, which may be of a boring or burning character, may radiate down both arms, usually the left. It is just when the pain is becoming almost unbearable that it begins to decline and there steals over the forehead a cold and unpleasant perspiration which extends to the arms and legs. Osler states that perspiration usually occurs in the hysterical forms of angina but I have observed it in true angina pectoris, also in pseudo-anginal seizures affecting men addicted to the over-use of alcohol and tobacco. Occasionally a bruit may be heard over the cardiac area; the first sound may be muffled or the second sound accentuated at the aortic orifice, but in a large number of patients there is nothing that is distinctive to be detected over the cardiac area. It is in those forms of angina pectoris in which pain is not a prominent feature that there is often observed a degree of difficulty of breathing and probably, in addition to the cardiac, some pulmonary lesion, such as œdema of the lung. A very large number of patients after an attack of angina belch up flatus with considerable relief, and to such an extent does this follow, as well as a sense of gastric discomfort often precede, the attack that many of the patients regard the condition of the stomach as the cause of the epigastric origin of the sternal pain.

In regard to these gastric crises in angina pectoris it is important to remember that the pain over the stomach, like that over the præcordium, is induced by movement. The stomach pain may come on suddenly with exertion and disappear just as suddenly with repose; it is in no way related to the taking of food. During the attack the face is pale and an unpleasant sense of mental anguish is experienced. The opinion is held by some writers that when the pain takes its origin below the diaphragm it is less dangerous. I am not prepared to say that the origin, the location of pain, or its radiation is of itself necessarily a criterion of danger. In the majority of patients the pain is situated at the manubrium sterni; from here it may radiate in many directions. At the present time I have under my care a man, aged 56 years, who had his first attack of angina pectoris three months ago. The pain seized him at mid sternum when out walking and radiated down both arms. Since then the pain has followed the same line of distribution; it is always worse from the elbows to the fingers and it is usually followed by considerable numbness of the fingers of the left hand. If he stands still and remains upright it gradually disappears. Between the attacks of pain the radial pulses are frequently unequal, the right pulse being stronger than the left. In another patient who was under the care of my colleague, Dr. John Clay, the pains which commenced over the sternum at a level of the second costal cartilage were at first extremely transient but as they recurred they lasted longer, ten minutes or more. As this man's illness only lasted 12 days I will briefly detail the symptoms. Pain kept recurring at irregular intervals. Absent for one whole day, it might seize him several times in an hour. During the attacks there was no dyspnœa but there was considerable flatulent distension of the stomach which was relieved by eructation. He was the subject of dyspepsia and suffered from constipation. So pronounced were the gastric and intestinal symptoms that it was a question as to how far the cause of the pain and of the attacks generally was not really situated in the abdomen, for, while the man looked extremely well (the pulse being regular, the heart normal, and the urine healthy), there was marked distension of the abdomen with considerable gurgling. During a seizure he would sit on a chair or walk about contrary to what one usually observes in angina vera. There was no sweating, dyspnœa, or pallor of the face; the pulse was not altered in rate or rhythm. Dr. Clay treated him with amyl nitrite inhalations and potassium iodide. 24 hours after this line of treatment was begun the patient died in the following circumstances. During a severe paroxysm of pain his wife broke a capsule of amyl nitrite and gave it to him. Shortly afterwards she left the room and on her return she found her husband had got out of bed and was standing by the fire. He told her that the capsule had given him immediate relief and that he now felt quite well. He returned to bed and, covering himself with the clothes, seemed to be very quiet. On his wife uncovering his face she found him dead.

So pronounced, as already stated, were the abdominal symptoms that the case was thought to be possibly one of a slowly developing intestinal obstruction with pain referred to the sternum. At the necropsy there was nothing detected in the alimentary canal. The cavities of the heart were filled with blood; the myocardium appeared to be healthy; there were a few small atheromatous patches on the aorta, but the endothelial covering was intact. The mouths of the coronary arteries were atheromatous and rigid from calcareous deposit. These arteries in their course showed here and there little bead-like thickenings and at places the vessels were occluded. On microscopical examination the muscle of the heart showed nothing definite; the coronary arteries were thickened and atheromatous and at places had undergone calcareous degeneration.

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The pain in pseudo-angina may be extremely severe. The personal element enters into the matter of pain in pseudo-angina far more than it does in true angina. Although women are more liable to pseudo-angina than men yet the affection is by no means exclusively confined to them, nor in women is it necessarily related to menstruation, although at the menopause, owing to the fact that vaso-motor disturbances are more likely at this epoch to arise, there is perhaps a greater liability to seizures then. In a very large percentage of cases of pseudo-angina no cardiac lesions can be detected but there is probably some inherited weakness of the nervous system which finds its expression in neurosis. Accompanying, the præcordial pain and its radiation down the left arm there is often a choking sensation felt in the throat akin to globus. During the attack the face is flushed and there is considerable throbbing of the heart and blood-vessels. Either as a cause of the attacks or in consequence of them many of the patients, especially women, are found to indulge rather freely in alcohol or in drugs that have a stimulating or narcotising influence.

Nothnagel has described a vaso-motor type of angina in which palpitation, præcordial pain, a feeling of faintness, coldness of the extremities, lividity, and perspiration are the main features. Anything that suddenly induces a contraction of the peripheral arteries, such as plunging the arms into cold water, will bring on an attack by imposing an extra strain upon the heart for the time being. In the same way influences operating from within and acting upon the vaso-motor centre may produce an attack by constriction of the peripheral arteries. It is probably thus that in many women impressions originating within the brain or impulses proceeding from the abdominal cavity explain pseudo anginal seizures. A distended stomach or deranged digestion, either by mechanically placing the heart at a disadvantage or reflexly through irritation of the vagal nerves, may induce an attack.

Over and above these come those cases in which toxæmia is apparently the largest contributing element. I refer to the influence of excessive tobacco smoking in men with or without indulgence in alcohol and to the possible influence of disordered or diseased states of the thyroid or other ductless glands in women. As men get older a change creeps over the body so that action and reaction to certain foods, stimulants and narcotics, &c., become altered. It is thus, I believe, that what in the young man is tachycardia as the result of the excessive use of tobacco is replaced in the middle-aged by the equally distressing but more painful attacks of pseudo-angina. It is unnecessary to do more than simply allude to the part played by sexual excess in the production of præcordial pain both in men and women.

PATHOLOGY OF ANGINA PECTORIS.

There are few maladies in which it is more difficult to separate the purely functional condition from the organic state than angina pectoris. The pathology of the malady has still to be written. From the time of Heberden in 1768, and the death of John Hunter in 1793, until to-day the opinion has prevailed that angina pectoris is due to a diseased condition of the coronary arteries. The opportunities of making post-mortem examinations in angina pectoris are not many, for it is not a malady that comes frequently before us in hospital practice. It is extremely rare in the Newcastle-upon-Tyne Royal Infirmary. In my own practice where angina has terminated fatally the pathological lesions which I have found have been extreme fatty degeneration of the cardiac muscle, atheromatous thickening and calcification of the coronary arteries with patchy myocarditis, atheroma, and dilatation of the aorta, the atheroma encroaching upon the mouths of the coronary arteries. There is the opinion that spasm of the coronary arteries is the cause of the severe pain in angina but blood vessels that have undergone sclerotic changes or calcification must surely be less liable to spasmodic constriction than arteries which still retain a healthy musculature. Spasm of muscle we know may be induced by the sudden cutting off of its blood-supply; hence it is that spasm of the muscle fibres of the heart has been advanced as an explanation of the severe pain. We have no definite information as to the sensitiveness of the healthy myocardium but in the traumatic cardiac cases which I have seen and in which the pericardium was torn, the heart did not appear to be particularly sensitive to touch or pain. The heart in this respect, however, is not different from other internal organs in health. Let any organ become diseased and there arises a sensitiveness to pain of which the individual had not been hitherto aware. Muscular fibre in an ordinary way may from the point of view of pain be insensitive to touch and pricking, and yet the same muscle in a state of spasm can become extremely painful, as witness the intestinal contractions in colic and the muscular spasms in the stomach in constricted pylorus.

Cardiac muscular fibre, physiologically speaking, occupies a position between voluntary and involuntary muscle and while it cannot be thrown into a state of tetanic spasm like ordinary striped muscular fibre, yet when an abnormal contraction akin to spasm is induced it might possibly assume the character of the prolonged muscular contraction observed in involuntary muscle. The heart can be thrown into a state of fibrillary tremor, but we do not know to what extent this is a painful condition. It can be nothing, at any rate, like a prolonged spasm of the heart muscle acting against great resistance.

A narrowing or blocking of the coronary arteries deserves attention. That arteries can become the seat of painful contraction or colic few will deny. In migraine the arteries on the affected brow can be felt to be hard, contracted, and painful. When an artery is suddenly blocked pain is experienced. It is thus that we seek to explain the dull pain in the back when infarction of the kidneys or of the spleen has taken place. I can recall the case of a young married woman who a few hours after her confinement was suddenly seized with excruciating pain in the left leg owing to blocking of the popliteal artery. In this patient the pain was widely distributed over the upper half of the limb. The case reminded me at the time of what occurs in horses when the main artery of a limb is suddenly blocked by a clot. The animal immediately stops and then falls down in great suffering. The artery need not be blocked by a clot; it may be only the seat of spasm. This is known as "intermittent claudication," a term introduced by Charcot. In the attack the muscles of the affected limb are hard and rigid. It is therefore taught that blocking of a coronary artery by inducing ischæmia causes spasm of the cardiac muscle akin to that observed in horses in "intermittent claudication."

It is difficult to see how calcification of the coronary arteries which has existed for years can become the cause of the sudden development of such acute symptoms as we find in angina pectoris. The same thing applies to dental caries and the pain of toothache. Calcification with partial or complete obliteration of a coronary artery is so frequently found after death in angina pectoris that the two must stand related in some way to each other. It is therefore maintained that during life when all was tranquil and no special demands were made upon the organ the heart received a sufficient supply of blood for the work it had to do. It was only when a sudden strain was imposed upon the heart that the amount of blood delivered to it became insufficient and the organ, unable to cope with the increased burden, became the seat of pain. Is it possible that strain of such a character can bring about the excruciating pain of angina pectoris and explain, too, the absence of difficulty of breathing in these cases?

We can recall instances where albuminuria has suddenly developed, where the heart was presumably healthy, and where, owing to sudden constriction of the peripheral arteries, an intensely unpleasant pain, with a feeling as if the chest would burst, has been experienced, but with this painful oppression there has usually been difficulty of breathing. In some respects the attack resembles angina pectoris, but even though relieved by amyl nitrite inhalations we do not call such an attack angina pectoris.

The sudden blocking of a comparatively speaking healthy coronary artery, a periarteritis, or an acutely contracted state of the blood-vessel would be much more likely to cause acute pain than a lesion of the wall of the vessel that had existed for years. It may be that it is this vaso-motor spasm of coronary arteries which underlies the occurrence of pseudo-anginal seizures in persons before middle age and in neurotic subjects. It is more than likely that spasm of the heart muscle induced by sudden narrowing or blocking of the coronary arteries is a cause of the pain in angina. If the pain in angina pectoris is not due to spasm of the cardiac muscle or to constriction of the coronary arteries, then it must come from the nerves of the aorta, from those of the heart, or of the coronary arteries. Most sufferers refer the pain of angina pectoris primarily to the manubrium sterni. From here it may diffuse itself down both arms, usually the left, through nerve connexions with the brachial plexus. The heart not only contains a large amount of intrinsic nervous ganglionic material but receives branches from the vagus and the accelerator nerves of the sympathetic. Huchard is of the opinion that the heart itself is the starting point of the pain. From here the impulses travel to the medulla oblongata, thence they are reflected by intercostal nerves and the brachial plexus as manifestations of pain. The stimulus also reaches the vagal centre and gives rise to inhibitory impulses which, travelling to the heart, slow the beat of that organ and render its movements intermittent. Huchard maintains that the sense of constriction and of impending death is explained by the inhibited heart's action; whereas Sansom is of the opinion that the pain is due to involvement of the sympathetic fibres and that the feeling of impending dissolution depends upon some influence exercised by the vagi. In pseudo-angina, on the other hand, the point of departure often is irritation of an intercostal, a peripheral, or visceral nerve. From these nerves the impulses pass to the medulla and are reflected by the vagi or accelerator nerves, hence the slowing or quickening of the heart's action.

Viewed in the abstract, pain may be regarded as a consequence of inefficiency or over-stimulation of an organ; it may be the result of a demand made upon an organ to which demand it is impossible to react on account of some inherent weakness. Some writers, therefore, seek to explain the pain of angina pectoris by the imposition of a sudden strain upon a weak heart and inability on the part of the coronary arteries to carry a sufficient amount of blood to the overburdened organ. Although both the vagi and the accelerator nerves are different in their functions it is known that there are afferent fibres in the vagi, which in abnormal circumstances may carry upwards impulses that become translated into pain, there are almost contemporaneously with the præcordial pain flushing of the face and a distressing sense of throbbing in the back of the head and neck. Respiration may be quickened. Usually, however, there is no difficulty of breathing; the patients tell us afterwards that in the attack there was no feeling of the need of air. The pulse varies. In one patient I have felt the pulse suddenly cease in the radial artery and observed the face become extremely pale; in others the pulse becomes quick and small, or it is hard to the finger. Huchard lays stress upon the inequality of the radial pulses in the absence of intrathoracic aneurysm as an important physical sign of angina. Should the patient be out of doors and walking when the attack comes on he is obliged to remain standing, leaning upon any object that may be conveniently at hand; he is unwilling to stir on account of the feeling of impending death.

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It is well in all cases of angina pectoris to inform the relatives of the serious nature of the seizures. In conversation with the patient and in trying to get him to moderate his occupation and alter his course of life the occasion might present itself of gently hinting to him that the attacks are attended with a certain amount of danger. Before doing this, however, the medical man ought to form some estimate of the nervous constitution of his patient and be guided thereby as to the advisability of imparting or withholding this information.

PNEUMOTHORAX IN TUBERCULOUS SUBJECTS.[1]

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PNEUMOTHORAX has been variously estimated as occurring in from 3 to 10 per cent. of all cases of phthisis. C. T. Williams[2] even found that it was present in 10 per cent. of necropsies on consumptives. Pneumothorax, in by far the majority of cases, perhaps 80 to 90 per cent. of the total,[3] is due to pulmonary tuberculosis. It is possible even that some of the cases of "spontaneous pneumothorax arising in apparently healthy persons" (spontaneous non-tuberculous pneumothorax, as Fussell and Riesman[4] call it), in which recovery nearly always takes place, may in reality be connected with tuberculosis, in so far as they may be due to the rupture of an adherent emphysematous bulla, resulting from an old local tuberculous lesion. At present I shall only consider pneumothorax occurring in decidedly tuberculous subjects, but in order to give an idea of the average gravity of cases of pneumothorax I will first give a quotation from Dr. J. L. Morse's conclusions in his Analysis of 51 Cases of Pneumothorax.[5] "The cases which recover," says this author, "are practically all serous. They usually die later, however, from pulmonary tuberculosis. The pneumothorax is the direct cause of death in 60 per cent. 80 per cent. of all cases die in less than a year and only 10 per cent. live over five years."

Doubtless a very large proportion of cases of pneumothorax occurring in tuberculous subjects may be called "terminal," inasmuch as if the pneumothorax is not itself the direct cause of death the tuberculous disease is far advanced and death occurs in the course of a few weeks or months. In regard to prognosis, however, every case must be judged on its own merits, and examples are not rarely met with in which the clinical course is quite different. It is possible, indeed, that in some cases of pneumothorax occurring in tuberculous subjects the onset of the pneumothorax may be due (as in some cases of "spontaneous" pneumothorax in apparently healthy persons), not to an active tuberculous lesion, but to the rupture of an adherent emphysema bulla, connected with a local obsolete tuberculous process, probably in the upper part of the lung; it may, in fact, be due to the results of scarring, though the tuberculous disease may be advancing elsewhere in the lungs and may or may not subsequently lead to the death of the patient after his recovery from the pneumothorax. In some other cases when the pneumothorax commences during a short period of high fever the rupture of the lung may be due to counter-infection with other (non-tuberculous) microbes, producing softening of a subpleural tuberculous nodule.

I shall now give some clinical examples of pneumothorax in tuberculous subjects—it will not be necessary to give examples of the well-known rapidly fatal "terminal" cases—and shall then proceed to the general subject of clinical symptoms and treatment.

CASE 1.—This is an example of pneumothorax supervening in a grave case of pulmonary tuberculosis with high fever, the pneumothorax becoming converted first into a hydro-pneumothorax and then into a chronic hydrothorax, death supervening in about a year. The patient, a young unmarried woman, aged 25 years, was admitted under my care into Mount Vernon Hospital on Feb. 29th, 1904, with a history pointing to pulmonary tuberculosis of one and a half years' duration. There had been slight hæmoptysis two weeks before admission. Her mother had died from consumption. After admission there was at first much fever. On the morning of March 1st the temperature reached 105° F., with a pulse of 124, and respirations of 40 per minute. On the right side of the chest there was deficient movement, the resonance was impaired all over and there was considerable crepitation over the upper part in front and down to the base behind. There was likewise impairment of resonance over the upper part of the left lung. Tubercle bacilli were found present in the scanty expectoration. Examination of the abdomen and urine showed nothing abnormal. On the evening of March 6th the patient felt a sudden pain in the right hinder part of the thorax which apparently indicated the commencement of the pneumothorax. The pain followed immediately after a fit of coughing. On examination the respirations were found to be 60 per minute and shallow and the pulse was weak and 160 per minute. The right side of the chest was hyper-resonant nearly all over and there was amphoric breathing to be heard at the lower part and a very distinct bell sound ("bruit d'airain") was obtained in the axillary region. The heart was displaced to the left and the liver dulness was apparently diminished. A hypodermic injection of morphine sulphate (grain ¼) with atropine sulphate (grain $\frac{1}{15}$) was given and the patient obtained sleep during the night. On the morning of March 7th she felt better and the pulse was 150 and the respirations were 60 per minute. A succussion splash on March 16th indicated the commencement of fluid effusion into the pneumothorax. On the morning of the 16th the pulse was 104 and the respirations were 28. The temperature at that time oscillated between about 100° and 101° F., but after the 21st it generally remained below 100°. On the 29th the cardiac apex beat was felt in the fifth intercostal space in the left nipple line, so that the heart was nearly in its normal position. On the right side of the chest the breath sounds were diminished and slightly amphoric in character; there was an imperfect bell sound and the cough sound was amphoric in character, a succussion splash could just be obtained but there was no marked dulness to percussion—at all events, with the patient in the sitting position. There were doubtless still a layer of air between the right lung and the chest wall and slight pleural effusion. Afterwards there was increase of the pleural effusion and on April 9th examination by the Roentgen rays showed a dark shadow due to the fluid in the right pleura reaching up to the level of the ninth rib in the scapular line behind. No succussion splash was obtained after May 17th, and the hydropneumothorax had doubtless by that time become converted into a hydrothorax. When the patient left the hospital on June 20th she still had all the signs of a right pleural effusion reaching up to the scapula behind. By the exploratory syringe (June 13th) the effusion was shown to be serous but slightly turbid. During the last two weeks in the hospital she was up about five hours daily and was allowed to walk about the corridor. She had gained weight since April, but her temperature was often somewhat raised in the evenings and the pulse varied from 84 to 100 per minute. I heard that she died in the latter part of January, 1905.

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It is fortunate for us that in the ordinary course of life the nerve impulses which are constantly streaming up through the spinal cord from our internal organs are not painful. Were such impulses to come regularly within our cognisance we would make an effort to suppress them and thus derange the harmony of visceral functional activity. Owing to the close association at their entrance in the spinal cord of the sympathetic nerves coming from the heart and those coming from the skin of the inner side of the arm and hand, an unduly exalted state of activity on the part of the sympathetic fibres may so influence by apposition the sensory nerves coming from the inner side of the left arm, the hand, and little finger that the individual hitherto only conscious of painful impressions entering here as coming from the arm and hand refers the feeling of pain in angina pectoris to the arm and hand. A similar explanation applies to the pain behind the upper part of the sternum. We have discussed as causes of the pain in angina pectoris spasm of the cardiac muscle, blocking of the coronary arteries, and diseased conditions of the nerves of the coronary plexus. In one patient who was under the care of Dr. F. W. Mott and in whom the pain in the anginal seizures extended down both arms there was found distinct inflammation of the nerves that accompanied the right and left coronary arteries. By means of the sympathetic branches of the coronary nerves Dr. Mott is of the opinion that painful impressions were conveyed through the stellate ganglion and the ganglion on the posterior root to the spinal cord where, as they enter at the same level as the nerves that carry upwards impulses from the skin of the inner side of the left arm and hand, the pain had been referred to the limb as well as to the heart and sternum.

How are we to reconcile the true and the false forms of angina? Sometimes it is comparatively easy to make a diagnosis of angina vera; at other times it is difficult to separate the true from the false. All of us can remember patients who suffered from pseudo-angina years ago and who at the end of two decades are still alive and free from seizures. We can equally recall other patients who similarly suffered and who after years of freedom from attacks have ultimately succumbed to some degenerative form of cardiac disease, such as dilatation of the heart and cardiac failure. When these attacks occurred we called them pseudo-angina, we regarded them as functional or reflex, we treated them as such, and their disappearance for years rather confirmed than weakened our diagnosis. But as the years rolled on did time not show that some of these so-called functional attacks must have been the glimmering of what was to follow and that the storms which passed over the heart and cardiac nerves did there and then leave some structural trace behind? In other words, was the deranged function of years ago a fleeting phenomenon or did it lead to the establishment of structural changes that silently progressed and ultimately ended in angina sine dolore? I am not aware of an authentic case of angina pectoris in which after death there has not been found some lesion in the heart or its vessels. Structural changes have invariably been found and these have always borne the mark of time. They ar never recent. It is therefore no suddenly induced morbi condition that underlies angina vera. This circumstanc removes angina pectoris from the category of functiona disorder whatever may be said of pseudo-angina. Huchar regards pseudo-angina as a neuralgia of the cardiac plexu or as a vaso-motor neurosis and the point we have to conside is, Does the false form or pseudo-angina ever merge itsel into and become angina vera? Recurrent gastralgia an flatulence for example may for years be but the expression o a functional disorder of the stomach but the termination i frequently a constricted pylorus or carcinoma. Should perchance, such a stomach be examined in the precancerou stage of the illness, no altered structure would be found an the diagnosis of a functional disorder would be therefor confirmed. We can scarcely regard such a painful and fata affection as angina pectoris as a simple neuralgia. Neuralgi we are told does not kill, but does it never kill? May it no be largely a question of the particular nerve affected and it central relations? Can it be truly said of angina pectori that the pain itself cannot become a cause of death b exhaustion of the nerve centres and lowering of the blood pressure to induce syncope? To Parry, angina pectoris was a form of syncope or fainting differing from ordinary syncope in being preceded by an unusual degree of pain over the region of the heart. Parry called the malady "syncope anginosa." It is true that in most of the attacks consciousness is not lost, but there are degrees of syncope and, besides, there are the facts of the syncope of the fatal seizure and of a patient sometimes dying in his first and only attack. Patients who have suffered from severe præcordial paroxysms which have ceased to be painful occasionally develop attacks of faintness, in one of which they die. Time will not permit of me dealing with such interesting questions as the relation of age, sex, and heredity to angina pectoris.

PROGNOSIS AND TREATMENT.

For patients suffering from pseudo-angina much can be done. To them a good prognosis can usually be given. In all cases of angina, whether true or false, attention ought to be directed to the state of the stomach and bowels. Dyspeptic troubles must be rectified and medicines given to check decomposition of food, to prevent flatulence, and to correct constipation. Tobacco smoking must be entirely prohibited with some people and reduced to a minimum with others. A similar remark applies to the use of alcohol.

The prognosis of angina vera, on the other hand, is grave and yet in some instances by appropriate treatment considerable relief can be obtained, impending attacks warded off or shortened, and life prolonged. Once a patient is the subject of well-marked angina pectoris that individual is living, as it were, on the edge of a precipice. At any moment and without warning the final attack may come. All sources of worry and anxiety should as far as possible be removed from the patient. Of all drugs that give relief there is none that can compare for immediate action and efficacy with nitrite of amyl and medicines of this class. Inhalation of a few drops of amyl nitrite will in many instances cut short an attack. We are indebted to Sir Lauder Brunton for the employment of this drug in angina pectoris. It is an illustration of what humanity has gained by the application of the experimental method to medicine. By the influence of amyl nitrite as a vaso-dilator the peripheral arteries are opened up, the circulation rendered easier, and the strain removed from the heart. Where there are signs of a failing heart behind the peripheral arterial constriction I think it is often desirable to combine digitalis or nux vomica with, for example, solution of ethyl nitrite. The other nitrites—e.g., nitro-glycerine, liquor trinitrini, &c.—are equally useful. There is a class of cases of true angina pectoris in which amyl nitrite and its congeners have little or no effect but where in fact they often do harm. The patients at any rate feel worse. In these persons the arteries are probably so diseased that they cannot respond equally all over to the action ot the drug, or the arterial tension is already low and as a consequence some unpleasant effects are produced and considerable cerebral and cardiac embarrassment experienced. In some cases of angina vera nothing short of the administration of morphine or opium will give relief. During the intervals, nux vomica as a cardiac and nerve tonic may be given or arsenic may be tried. Iodide of potassium in many cases, without there being necessarily a syphilitic taint, lengthens the intervals between the attacks and restores confidence to the patient.

It is well in all cases of angina pectoris to inform the relatives of the serious nature of the seizures. In conversation with the patient and in trying to get him to moderate his occupation and alter his course of life the occasion might present itself of gently hinting to him that the attacks are attended with a certain amount of danger. Before doing this, however, the medical man ought to form some estimate of the nervous constitution of his patient and be guided thereby as to the advisability of imparting or withholding this information.

PNEUMOTHORAX IN TUBERCULOUS SUBJECTS.[1]

BY F. PARKES WEBER, M.D. CANTAB., F.R C.P. LOND.,
PHYSICIAN TO THE GERMAN HOSPITAL AND TO THE MOUNT VERNON HOSPITAL FOR CONSUMPTION, HAMPSTEAD.

PNEUMOTHORAX has been variously estimated as occurring in from 3½ to 10 per cent. of all cases of phthisis. C. T. Williams[2] even found that it was present in 10 per cent. of necropsies on consumptives. Pneumothorax, in by far the majority of cases, perhaps 80 to 90 per cent. of the total,[3] is due to pulmonary tuberculosis. It is possible even that some of the cases of "spontaneous pneumothorax arising in apparently healthy persons" (spontaneous non-tuberculous pneumothorax, as Fussell and Riesman[4] call it), in which recovery nearly always takes place, may in reality be connected with tuberculosis, in so far as they may be due to the rupture of an adherent emphysematous bulla, resulting from an old local tuberculous lesion. At present I shall only consider pneumothorax occurring in decidedly tuberculous subjects, but in order to give an idea of the average gravity of cases of pneumothorax I will first give a quotation from Dr. J. L. Morse's conclusions in his Analysis of 51 Cases of Pneumothorax.[5] "The cases which recover," says this author, "are practically all serous. They usually die later, however, from pulmonary tuberculosis. The pneumothorax is the direct cause of death in 60 per cent. 80 per cent. of all cases die in less than a year and only 10 per cent. live over five years."

Doubtless a very large proportion of cases of pneumothorax occurring in tuberculous subjects may be called "terminal," inasmuch as if the pneumothorax is not itself the direct cause of death the tuberculous disease is far advanced and death occurs in the course of a few weeks or months. In regard to prognosis, however, every case must be judged on its own merits, and examples are not rarely met with in which the clinical course is quite different. It is possible, indeed, that in some cases of pneumothorax occurring in tuberculous subjects the onset of the pneumothorax may be due (as in some cases of "spontaneous" pneumothorax in apparently healthy persons), not to an active tuberculous lesion, but to the rupture of an adherent emphysema bulla, connected with a local obsolete tuberculous process, probably in the upper part of the lung; it may, in fact, be due to the results of scarring, though the tuberculous disease may be advancing elsewhere in the lungs and may or may not subsequently lead to the death of the patient after his recovery from the pneumothorax. In some other cases when the pneumothorax commences during a short period of high fever the rupture of the lung may be due to counter-infection with other (non-tuberculous) microbes, producing softening of a subpleural tuberculous nodule.

I shall now give some clinical examples of pneumothorax in tuberculous subjects—it will not be necessary to give examples of the well-known rapidly fatal "terminal" cases—and shall then proceed to the general subject of clinical symptoms and treatment.

CASE 1.—This is an example of pneumothorax supervening in a grave case of pulmonary tuberculosis with high fever, the pneumothorax becoming converted first into a hydropneumothorax and then into a chronic hydrothorax, death supervening in about a year. The patient, a young unmarried woman, aged 25 years, was admitted under my care into Mount Vernon Hospital on Feb. 29th, 1904, with a history pointing to pulmonary tuberculosis of one and a half years' duration. There had been slight hæmoptysis two weeks before admission. Her mother had died from consumption. After admission there was at first much fever. On the morning of March 1st the temperature reached 105° F., with a pulse of 124, and respirations of 40 per minute. On the right side of the chest there was deficient movement; the resonance was impaired all over and there was considerable crepitation over the upper part in front and down to the base behind. There was likewise impairment of resonance over the upper part of the left lung. Tubercle bacilli were found present in the scanty expectoration. Examination of the abdomen and urine showed nothing abnormal. On the evening of March 6th the patient felt a sudden pain in the right hinder part of the thorax which apparently indicated the commencement of the pneumothorax. The pain followed immediately after a fit of coughing. On examination the respirations were found to be 80 per minute and shallow and the pulse was weak and 160 per minute. The right side of the chest was hyper-resonant nearly all over and there was amphoric breathing to be heard at the lower part and a very distinct bell-sound ("bruit d'airain") was obtained in the axillary region. The heart was displaced to the left and the liver dulness was apparently diminished. A hypodermic injection of morphine sulphate (grain $\frac{1}{4}$) with atropine sulphate (grain $\frac{1}{150}$) was given and the patient obtained sleep during the night. On the morning of March 7th she felt better and the pulse was 150 and the respirations were 60 per minute. A succussion splash on March 16th indicated the commencement of fluid effusion into the pneumothorax. On the morning of the 16th the pulse was 104 and the respirations were 28. The temperature at that time oscillated between about 100° and 101° F. but after the 21st it generally remained below 100°. On the 29th the cardiac apex beat was felt in the fifth intercostal space in the left nipple line, so that the heart was nearly in its normal position. On the right side of the chest the breath sounds were diminished and slightly amphoric in character; there was an imperfect bell sound and the cough sound was amphoric in character; a succussion splash could just be obtained but there was no marked dulness to percussion—at all events, with the patient in the sitting position. There were doubtless still a layer of air between the right lung and the chest wall and slight pleural effusion. Afterwards there was increase of the pleural effusion and on April 9th examination by the Roentgen rays showed a dark shadow due to the fluid in the right pleura reaching up to the level of the ninth rib in the scapular line behind. No succussion splash was obtained after May 17th, and the hydropneumothorax had doubtless by that time become converted into a hydrothorax. When the patient left the hospital on June 20th she still had all the signs of a right pleural effusion reaching up to the scapula behind. By the exploratory syringe (June 13th) the effusion was shown to be serous but slightly turbid. During the last two weeks in the hospital she was up about five hours daily and was allowed to walk about the corridor. She had gained weight since April, but her temperature was often somewhat raised in the evenings and the pulse varied from 84 to 100 per minute. I heard that she died in the latter part of January, 1905.

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The prognosis of angina vera, on the other hand, is grave and yet in some instances by appropriate treatment considerable relief can be obtained, impending attacks warded off or shortened, and life prolonged. Once a patient is the subject of well-marked angina pectoris that individual is living, as it were, on the edge of a precipice. At any moment and without warning the final attack may come. All sources of worry and anxiety should as far as possible be removed from the patient. Of all drugs that give relief there is none that can compare for immediate action and efficacy with nitrite of amyl and medicines of this class. Inhalation of a few drops of amyl nitrite will in many instances cut short an attack. We are indebted to Sir Lauder Brunton for the employment of this drug in angina pectoris. It is an illustration of what humanity has gained by the application of the experimental method to medicine. By the influence of amyl nitrite as a vaso-dilator the peripheral arteries are opened up, the circulation rendered easier, and the strain removed from the heart. Where there are signs of a failing heart behind the peripheral arterial constriction I think it is often desirable to combine digitalis or nux vomica with, for example, solution of ethyl nitrite. The other nitrites—e.g., nitro-glycerine, liquor trinitrini, &c.—are equally useful. There is a class of cases of true angina pectoris in which amyl nitrite and its congeners have little or no effect but where in fact they often do harm. The patients at any rate feel worse. In these persons the arteries are probably so diseased that they cannot respond equally all over to the action of the drug, or the arterial tension is already low and as a consequence some unpleasant effects are produced and considerable cerebral and cardiac embarrassment experienced. In some cases of angina vera course of a day or so. The patient's organism succeeds in accommodating itself to the alteration in its respiratory mechanism, so that a kind of compensation occurs. This accommodation of the organism to the new conditions may be especially marked in cases of relatively favourable prognosis, when the distress at the onset of pneumothorax is very great, perhaps greater than in less favourable cases.

In by far the majority of cases the pneumothorax occurs when the changes in the lungs are already far advanced but it may occur at any stage of pulmonary tuberculosis and may even be the result of a single tuberculous lesion. Thus S. West[12] mentions the case of an elderly man who developed pneumothorax without urgent symptoms (latent pneumothorax) and who died from exhaustion; at the necropsy the pneumothorax was found to be due to the rupture of a small caseous cavity near the root of the right lung and no other disease was discovered in the whole body. Austin Flint[13] recorded the case of a young accountant, aged 18 years, who had suffered from hydropneumothorax of the left side for a good time before his death (his death was determined by pneumonia of the right lung). At the necropsy a little cavity was found in the left lung which had probably led to the pneumothorax, for there were no other cavities or tuberculous masses. Letulle gives a case in which the lung contained only one tuberculous nodule, the rupture of which gave rise to the pneumothorax.[14]

In a few tuberculous cases the pneumothorax has disappeared without any liquid being effused into the pleura.[15] Surely, however, in some at least of these cases the pneumothorax was not due to any actual tuberculous lesion but rather to emphysematous changes associated with some localised chronic or obsolete pulmonary tuberculosis, for instance, to the tearing of a superficial bulla, perhaps connected by an adhesion with the opposite pleural surface. Thus Dr. H. B. Whitney[16] records a case of pneumothorax occurring suddenly in a man (aged 70 years!) who is supposed to have suffered formerly from pulmonary tuberculosis. On account of severe pressure symptoms the pneumothorax was tapped and a cannula was left in the chest for several days. Complete recovery followed. A superficial emphysematous change or a pleuritic adhesion, associated with chronic or obsolete tuberculous lesions, affords the most reasonable explanation of the occurrence of pneumothorax in such a case. In support of this view Dittrich's case may be adduced.[17] It is that of a medical man, aged 23 years, who had quiescent pulmonary tuberculosis and also emphysema. Whilst walking he was suddenly seized with fatal left-sided pneumothorax, which the post-mortem examination showed to be caused by rupture of a subpleural bulla situated in a portion of the lung (the apex) showing cicatricial changes. Emphysema may, indeed, in certain cases be regarded as a connecting link between tuberculous lesions and pneumothorax, as was pointed out long ago by A. Brünniche of Copenhagen.[18] It is to be remarked that in certain cases in which pneumothorax has appeared to be due to the rupture of an emphysema bulla the emphysematous change has been found, not in the lower part of the lung, its favourite site in ordinary cases of emphysema, but in the upper part, at or near the apex, in which position it is often associated with obsolete tuberculous lesions or cicatrices from other causes. Thus, in a case of fatal hæmopneumothorax described by G. Newton Pitt[19] the cause was apparently the rupture of an emphysema bulla near the apex of the right lung but the bulla was adherent to the chest wall, and it seems to me that the existence of both the adhesion and the bulla in this case may very well have been due to a former minute tuberculous lesion.

Examples of pneumothorax due to the tearing of a superficial (subpleural) bulla fastened by an adhesion to the opposite pleural surface are to be found in F. W. Zahn's paper, Ueber die Entstehungsweise von Pneumothorax.[20] In this connexion W. H. Ranking's[21] case may likewise be referred to, though it has often been quoted in support of a different view. It is that of a young man, aged 19 years, who, while at church, was suddenly seized with the symptoms of left-sided pneumothorax. The pneumothorax was gradually recovered from within two months, but later the patient died suddenly from the effects of a dissecting aneurysm of the aorta. At the necropsy the lungs were found free from tubercles but there were some dilated air cells, especially near the apex of the left lung. Here, again, it must be remembered that emphysema bullæ near the apex of the lung, especially in young persons, are often connected with older cicatricial tuberculous processes.

In hydropneumothorax in tuberculous subjects cure has been known occasionally to occur with or without operative interference.[22] I have recently heard of an instance of such recovery in the case of a medical man who developed pneumothorax some years ago. More than 50 years ago Professor J. T. Banks of Dublin narrated the case of a man, aged 30 years, who was admitted into the Whitworth Hospital in August, 1851, with signs of left-sided hydropneumothorax, evidently associated with pulmonary tuberculosis. No paracentesis or operation of any kind was performed. He left the hospital in June, 1852, but long before this the signs of air and fluid in the left pleura had ceased to exist. He was able to return to his ordinary work, the tuberculous disease becoming apparently arrested. He was seen again by Professor Banks in 1854.[23] It must be remembered, however, that recovery from the pneumothorax may take place even though the patient dies soon afterwards from progress of the tuberculous disease. Thus S. West[24] records the case of a phthisical girl, aged 19 years, who developed pneumothorax of the left side and recovered from this complication in five weeks without any liquid effusion into the pleura having been detected. She died, however, a few months later from progress of the tuberculous disease. T. Bushby[25] attended a phthisical gentleman, about 44 years of age, who slowly recovered from an attack of right-sided pneumothorax without liquid effusion but who a few months afterwards showed decided signs of increase of the pulmonary tuberculosis. With these cases the third case I narrated above may be compared. Similarly Rose[26] records the case of a man, aged 24 years, who died from tuberculous meningitis shortly after recovering from tuberculous hydropneumothorax of the right side. The necropsy showed universal pleural adhesion of that side.

The prognosis as to the patient's ultimate prospects of life and partial or complete recovery of strength must depend on the extent of the tuberculous disease in his lungs, on his general condition, and, of course, on the local and general treatment adopted. To the subject of treatment I shall return later. Older writers have recorded cases of phthisical persons living a few years and able to enjoy life after the onset of pneumothorax. Thus, Dr. G. H. Barlow[27] gave the case of a consumptive woman, aged 21 years, who lived at least three years after the onset of pneumothorax. Dr. H. M. Hughes[28] narrated the case of a phthisical woman, aged 26 years, who developed hydropneumothorax on the right side and lived two and a half years. He also mentioned[29] the case of a young man who lived over three years after the occurrence of pneumothorax and who, during a great portion of that time, was in the habit of riding up from Lewisham to transact his business in London and by agitating his body he used to produce a succussion sound for the amusement of his friends. There is no definite evidence, however, of the last case being one of pulmonary tuberculosis, though it probably was. J. T. Banks in 1854 described a case, already alluded to, of recovery from tuberculous hydropneumothorax without paracentesis thoracis or any surgical interference. Further on I shall refer to results obtained in more modern cases, mostly with the help of paracentesis or operation.

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[12] Loc. cit., p. 307.

[13] In an article on Pneumothorax in American Clinical Lectures, 1876, vol. i., p. 77. See also Andral's opinion on this subject, quoted by M. Naumann, Deutsche Klinik, 1854, p. 292.

[14] Cf. Russell, Case of Pneumothorax occurring at the Very Commencement of Tubercular Deposit of the Lung, Brit. Med. Jour., March [illegible] 1860.

[15] Vide S. West, loc. cit., p. 300, Case 3. See also the examples collected by L. Galliard, Le Pneumothorax, 1892, p. 169.

[16] Philadelphia Medical Journal, Jan. 14th, 1899, p. 93, Case 2.

[17] Dittrich's well known case was first published by Dr. M. A. Wintrich in his Krankheiten der Respirationsorgane, Erlangen, 1854, p. 352.

[18] English translation in Dublin Hospital Gazette, 1856, vol. iii., p. 111.

[19] Transactions of the Clinical Society of London, vol. xxxiii., p. 80.

[20] Virchow's Archiv, 1891, vol. cxxiii., p. 197.

[21] Ranking, Brit. Med. Jour., 1860, p. [illegible].

[22] Cf. L. Galliard, Le Pneumothorax, p. 171.

[23] Dublin Quarterly Journal of Medical Science, 1854, vol. xviii., p. 223.

[24] Loc. cit., p. 300.

[25] Liverpool Medico-Chirurgical Journal, 1893, vol. xviii., p. 193.

[26] Deutsche Medicinische Wochenschrift, 1899, vol. xxv., p. 703.

[27] Guy's Hospital Reports, 1839, vol. iv., p. 303.

[28] Guy's Hospital Reports, 1843, vol. viii., p. 20. After death the right pleura was found to contain sero-purulent liquid but no air.

[29] Loc. cit., p. [illegible]. No post mortem examination is recorded case.

health and had given birth to her second child five months previously. Both her children were living and healthy. She had suckled the baby four months but felt weak. She only began to feel really ill, however, a week or two before admission (cough, pains in the back and chest, loss of flesh, &c.). In the hospital she was restless and feverish and in the left lower axillary region there was what seemed to be slight "pleuritic crepitation," not a distinct friction sound. The onset of the pneumothorax was somewhat insidious but it probably commenced on the night of Nov. 22nd to 23rd, perhaps during sleep. Anyhow the signs of pneumothorax on the left side were very well marked when I examined the patient on the morning of Nov. 24th, though the left side of the chest seemed at that time to move with respiration almost as well as the right. The heart was displaced to the right of the sternum and the ordinary cardiac area was hyper-resonant. The expiratory sounds on the left side were amphoric and there was a typical bell sound but no metallic tinkling or succession splash. The pulse was 128 and the respirations were 44 in the minute (after the examination). The fever continued and about this time moderate albuminuria was noted. The temperature, which during the latter part of November had several times risen to 104°, remained below 100° after Dec. 10th and on the 11th the urine was quite free from albumin. The signs of pneumothorax continued and on Dec. 22nd a distinct succession splash was heard. Considerable fever from Jan. 17th, 1903, indicated the change from a hydropneumothorax to a pyopneumothorax and the patient's general condition and strength rapidly deteriorated. On Jan. 27th the pleura was drained by my surgical colleague, Dr. E. Michels, who resected a piece of the hinder part of the seventh rib. The fever then gradually lessened and after a time the patient's general condition began slowly to improve. In March, 1903, she was allowed to be up and about in the ward. The heart was nearly in its normal position and the lung had evidently re-expanded to a considerable extent.

The patient has now been living in her own home and doing her ordinary household work for a long time. The pulmonary condition remains fairly good, though the fistula in her side still keeps open and discharges slightly, just enough to moisten the dressings. The liver and spleen are not enlarged and there is no albuminuria (April, 1905) or any sign of amyloid disease of the viscera. No adventitious sounds can be heard over the lungs nor can any positive physical signs of pulmonary tuberculosis be made out, though the left side of the thorax shows some contraction and a certain impairment of resonance and breath sounds. The cardiac apex beat is slightly displaced to the left. When the patient was in the hospital the tuberculin test gave a positive result, a typical febrile reaction following the injection of two milligrammes (there was no reaction after one milligramme) of Koch's old tuberculin, but otherwise there have not been really definite signs of tuberculosis.

CASE 3.—This illustrates recovery from pneumothorax, without the occurrence of any pleuritic effusion, in a practically hopeless tuberculous case, the patient subsequently dying from advance of his tuberculous disease. It may be compared to a case recorded by Dr. S. West to which I shall afterwards allude. The patient, a policeman, aged 23 years, was admitted to the Mount Vernon Hospital under the care of Dr. J. E. Squire[7] on March 31st, 1903. He had been ill during the last year but had continued to work up to the time of admission. Dulness, bronchial breathing, and moist crepitation were present over the whole left lung and the upper part of the right lung. His temperature ran up to 102°-104° F. in the evenings. There was considerable tuberculous ulceration of the larynx. On April 15th the patient complained of sharp pain on the left side after a severe fit of coughing and signs of left-sided pneumothorax developed: loss of movement on the left side, hyper-resonance to percussion, almost complete absence of breath sounds, displacement of the heart to the right, dyspnœa, and frequent pulse (160 beats in the minute). In a few days his general condition began to improve, his pulse fell to under 100 per minute, and his temperature came down to below 100°. The signs of pneumothorax commenced gradually to clear up without any liquid pleuritic effusion being detected. The patient left the hospital in the second half of May, 1903, and obtained admission to Friedenheim. In the first week of July, 1903, no signs of pneumothorax or pleuritic effusion could be detected and the heart was in its normal position. The tuberculous process appeared to have quieted down but there was slight evening fever (100° to 100·5°). Soon afterwards the patient was discharged from Friedenheim but was readmitted in March, 1904, and I was kindly allowed to examine him on April 5th. The cardiac apex beat was felt at about the normal position. There were cavernous signs over the whole lower part of the left lung and there was stridor from laryngeal disease. The patient died in May, 1904, and at the necropsy no remnant of the pneumothorax could be found but the adherent pleura was so thick and dense that the left lung could not be removed. There were two large cavities in the right lung.

Onset and Symptoms of Pneumothorax in Tuberculous Cases.

The physical signs will depend largely on whether the pneumothorax is complete (diffuse) or limited by pleuritic adhesions and, if the latter, on the position and extent of the adhesions. Adhesions in the front of the lung may check the displacement of the heart and mediastinum which constitutes one of the most important physical signs, if not actually the most important sign, in cases of complete pneumothorax. Moreover, in cases of limited pneumothorax the onset is more likely to escape attention (latent pneumothorax), especially in weak patients already confined to bed, and when the pneumothorax is on the side most damaged by the tuberculosis, whereas when complete pneumothorax occurs in relatively vigorous patients and when the lung of the opposite side is already much diseased the onset is generally marked by urgent distress, dyspnœa, sometimes faintness and often severe pain, especially on exertion or movement. The initial distress is likely to increase rapidly and to demand relief by paracentesis, if the opening in the lung is very minute and acts as a valve, admitting air into the pleura during inspiration but not allowing it to escape during expiration (the so-called "valvular pneumothorax"). An important point is that one or more of the best known physical signs of pneumothorax may be absent, at least at the time of examination. Thus amphoric breathing is very often (for a time at least) absent[8] and frequently no breath sounds at all can be heard (silent pneumothorax); the "bell sound" ("bruit d'airain") cannot always be obtained and (in some cases of early pneumothorax) the respiratory movements of the affected side of the chest may be almost equal to those of the sound side. In some cases metallic tinkling at the commencement of pneumothorax may be loud enough to be heard by the patient himself (Fairfax[9]) or by everyone in the room (Allbutt[10]). Amongst the conditions which may be mistaken for limited pneumothorax is subphrenic abscess due to perforation of the stomach or bowel and this condition has even been named "subphrenic pyopneumothorax" (Leyden) or "false pneumothorax." In cases of hydropneumothorax and pyopneumothorax Bäumler[11] draws attention to the occasional occurrence of tympanitic islands within the dull area of pleuritic effusion. One explanation which he offers is that these resonant patches may be due to portions of the lung being attached to the chest wall by old pleuritic adhesions.

Course and Prognosis.

In many cases, as I have already mentioned, the pneumothorax must be regarded as the terminal stage of the tuberculous disease. Occasionally patients die almost immediately after the onset. More frequently they survive the period of onset and in a few days the physical signs (succession splash, &c.) show that liquid as well as air is present in the pleural cavity. The liquid is generally serous at first (hydropneumothorax) and in some cases certainly it never becomes really purulent (pyopneumothorax). Even in bad cases the dyspnœa and distress usually present at the onset of the pneumothorax become much less marked in the course of a day or so. The patient's organism succeeds in accommodating itself to the alteration in its respiratory mechanism, so that a kind of compensation occurs. This accommodation of the organism to the new conditions may be especially marked in cases of relatively favourable prognosis, when the distress at the onset of pneumothorax is very great, perhaps greater than in less favourable cases.

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[7] I have to thank Dr. Squire, my colleague at the Mount Vernon Hospital, and Dr. P J. F. Lush, physician to Friedenheim Hospital, for the kind permission to narrate this case and have likewise to thank Dr. S. R. Williams and Mr. A. Coleridge, formerly residents at the Mount Vernon Hospital, for much information regarding it.

[8] The presence or absence of amphoric breathing does not *entirely* depend on whether the pneumothorax is open or closed—that is, whether there is a free opening or not through the lung (Cf. S. West, loc. cit., p. 787).

[9] Quoted by Emerson (loc. cit.) from the Richmond Medical Journal, February, 1868.

[10] Allbutt's patient was, however, apparently not tuberculous. See footnote in System of Medicine, vol. v, p. 383.

[11] Deutsches Archiv für Klinische Medicin, Leipsic, 1905, vol. lxxxiv., p. 11.

In by far the majority of cases the pneumothorax occurs when the changes in the lungs are already far advanced but it may occur at any stage of pulmonary tuberculosis and may even be the result of a single tuberculous lesion. Thus S. West[12] mentions the case of an elderly man who developed pneumothorax without urgent symptoms (latent pneumothorax) and who died from exhaustion; at the necropsy the pneumothorax was found to be due to the rupture of a small caseous cavity near the root of the right lung and no other disease was discovered in the whole body. Austin Flint[13] recorded the case of a young accountant, aged 18 years, who had suffered from hydropneumothorax of the left side for a good time before his death (his death was determined by pneumonia of the right lung). At the necropsy a little cavity was found in the left lung which had probably led to the pneumothorax, for there were no other cavities or tuberculous masses. Letulle gives a case in which the lung contained only one tuberculous nodule, the rupture of which gave rise to the pneumothorax.[14]

In a few tuberculous cases the pneumothorax has disappeared without any liquid being effused into the pleura.[15] Surely, however, in some at least of these cases the pneumothorax was not due to any actual tuberculous lesion but rather to emphysematous changes associated with some localised chronic or obsolete pulmonary tuberculosis, for instance, to the tearing of a superficial bulla, perhaps connected by an adhesion with the opposite pleural surface. Thus Dr. H. B. Whitney[16] records a case of pneumothorax occurring suddenly in a man (aged 70 years?) who is supposed to have suffered formerly from pulmonary tuberculosis. On account of severe pressure symptoms the pneumothorax was tapped and a cannula was left in the chest for several days. Complete recovery followed. A superficial emphysematous change or a pleuritic adhesion, associated with chronic or obsolete tuberculous lesions, affords the most reasonable explanation of the occurrence of pneumothorax in such a case. In support of this view Dittrich's case may be adduced.[17] It is that of a medical man, aged 28 years, who had quiescent pulmonary tuberculosis and also emphysema. Whilst walking he was suddenly seized with fatal left-sided pneumothorax, which the post-mortem examination showed to be caused by rupture of a subpleural bulla situated in a portion of the lung (the apex) showing cicatricial changes. Emphysema may, indeed, in certain cases be regarded as a connecting link between tuberculous lesions and pneumothorax, as was pointed out long ago by A. Brünniche of Copenhagen.[18] It is to be remarked that in certain cases in which pneumothorax has appeared to be due to the rupture of an emphysema bulla the emphysematous change has been found, not in the lower part of the lung, its favourite site in ordinary cases of emphysema, but in the upper part, at or near the apex, in which position it is often associated with obsolete tuberculous lesions or cicatrices from other causes. Thus, in a case of fatal hæmopneumothorax described by G. Newton Pitt[19] the cause was apparently the rupture of an emphysema bulla near the apex of the right lung but the bulla was adherent to the chest wall, and it seems to me that the existence of both the adhesion and the bulla in this case may very well have been due to a former minute tuberculous lesion.

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In hydropneumothorax in tuberculous subjects cure has been known occasionally to occur with or without operative interference.[22] I have recently heard of an instance of such recovery in the case of a medical man who developed pneumothorax some years ago. More than 50 years ago Professor J. T. Banks of Dublin narrated the case of a man, aged 20 years, who was admitted into the Whitworth Hospital in August, 1851, with signs of left-sided hydropneumothorax, evidently associated with pulmonary tuberculosis. No paracentesis or operation of any kind was performed. He left the hospital in June, 1852, but long before this the signs of air and fluid in the left pleura had ceased to exist. He was able to return to his ordinary work, the tuberculous disease becoming apparently arrested. He was seen again by Professor Banks in 1854.[23] It must be remembered, however, that recovery from the pneumothorax may take place even though the patient dies soon afterwards from progress of the tuberculous disease. Thus S. West[24] records the case of a phthisical girl, aged 19 years, who developed pneumothorax of the left side and recovered from this complication in five weeks without any liquid effusion into the pleura having been detected. She died, however, a few months later from progress of the tuberculous disease. T. Bushby[25] attended a phthisical gentleman, about 44 years of age, who slowly recovered from an attack of right-sided pneumothorax without liquid effusion but who a few months afterwards showed decided signs of increase of the pulmonary tuberculosis. With these cases the third case I narrated above may be compared. Similarly Rose[26] records the case of a man, aged 24 years, who died from tuberculous meningitis shortly after recovering from tuberculous hydropneumothorax of the right side. The necropsy showed universal pleural adhesion of that side.

The prognosis as to the patient's ultimate prospects of life and partial or complete recovery of strength must depend on the extent of the tuberculous disease in his lungs, on his general condition, and, of course, on the local and general treatment adopted. To the subject of treatment I shall return later. Older writers have recorded cases of phthisical persons living a few years and able to enjoy life after the onset of pneumothorax. Thus, Dr. G. H. Barlow[27] gave the case of a consumptive woman, aged 21 years, who lived at least three years after the onset of pneumothorax. Dr. H. M. Hughes[28] narrated the case of a phthisical woman, aged 26 years, who developed hydropneumothorax on the right side and lived two and a half years. He also mentioned[29] the case of a young man who lived over three years after the occurrence of pneumothorax and who, during a great portion of that time, was in the habit of riding up from Lewisham to transact his business in London and by agitating his body he used to produce a succussion sound for the amusement of his friends. There is no definite evidence, however, of the last case being one of pulmonary tuberculosis, though it probably was. J. T. Banks in 1854 described a case, already alluded to, of recovery from tuberculous hydropneumothorax without paracentesis thoracis or any surgical interference. Further on I shall refer to results obtained in more modern cases, mostly with the help of paracentesis or operation.

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[12] Loc. cit., p. 527.

[13] In an article on Pneumothorax in American Clinical Lectures, 1876, vol. i., p. 77. See also Andral's opinion on this subject, quoted by M. Naumann, Deutsche Klinik, 1854, p. 282.

[14] Cf. Russell, Case of Pneumothorax occurring at the Very Commencement of Tubercular Deposit of the Lung, Brit. Med. Jour., March [illegible].

[15] Vide S. West, loc. cit., p. 300, Case 3. See also the examples collected by L. Galliard, Le Pneumothorax, 1888, p. 169.

[16] Philadelphia Medical Journal, Jan. 14th, 1899, p. 93, Case 2.

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[18] English translation in Dublin Hospital Gazette, 1856, vol. iii., p. 111.

[19] Transactions of the Clinical Society of London, vol. xxxiii., p. 80.

[20] Virchow's Archiv, 1891, vol. cxxiii., p. 197.

[21] Ranking, Brit. Med. Jour., 1860, p. 600.

[22] Cf. L. Galliard, Le Pneumothorax, p. 171.

[23] Dublin Quarterly Journal of Medical Science, 1854, vol. xvii., p. 323.

[24] Loc. cit., p. 300.

[25] Liverpool Medico-Chirurgical Journal, 1893, vol. xviii., p. 193.

[26] Deutsche Medicinische Wochenschrift, 1899, vol. xxv., p. 713.

[27] Guy's Hospital Reports, 1849, vol. iv., p. 329.

[28] Guy's Hospital Reports, 1852, vol. viii., p. 20. After death the right pleura was found to contain sero-purulent liquid but no air.

[29] Loc. cit., p. 3. No post-mortem examination is recorded case.

TREATMENT.

The treatment of pneumothorax occurring in tuberculous subjects is that of pneumothorax generally, together with the hygienic measures peculiarly suitable for the pulmonary tuberculosis (open-air, feeding, climate), especially in regard to after-treatment. The question of treatment may be considered under measures to be adopted at the commencement of the pneumothorax and those which may become advisable later. If the onset be accompanied by symptoms of collapse, diffusible stimulants will be required. Sometimes special cardiac stimulants, such as digitalis or strophanthus, are given. In some cases sedatives, such as codeine or a small hypodermic injection of morphine, are indicated to relieve pain and excitement, but great caution must be exercised in regard to the dose as a decided narcotic effect may easily be harmful. Aperients may be serviceable to diminish the congestion of the portal system when pneumothorax occurs in relatively full-blooded individuals. The patient should not be unnecessarily moved about as movements increase the dyspnœa and distress. Inhalation of oxygen may, perhaps, be of temporary use. Whenever there is reason to believe that the distress is due to excessive tension of the pneumothorax ("valvular pneumothorax") the air may be allowed to escape by (West's method) a cannula with an indiarubber tube attached, the other end of the tube being allowed to hang down into a basin of sterilised water, or the air may be allowed to escape through a cannula into antiseptic dressings.[30] The necessity for paracentesis probably arises only in a very limited number of cases[31] and in most of them not very long after the onset of the pneumothorax.

Here I may shortly allude to quite modern trials in regard to the treatment of pneumothorax. Dr. H. von Schrötter[32] relates the case of a boy, aged 17 years, who having previously enjoyed good health began to suffer from fever and sweating. On April 10th whilst sitting still he felt sudden pain in the chest, became dyspnœic, and was obliged to go to bed. On April 15th after admission to the hospital he was found to have a closed pneumothorax on the right side, without any fluid effusion. The right lung was certainly quite collapsed. The treatment adopted consisted in the aspiration of air from the pleura and the introduction of oxygen into the lung by a metal catheter inserted into the right bronchus. At the first sitting about 2200 cubic centimetres of air were removed from the right pleura and at the second sitting 500 cubic centimetres more. The effect of this treatment was watched and controlled by Roentgen ray examination. The last remains of the pneumothorax were made to disappear by the help of long-continued inspiration of oxygen under increased pressure, using an inhalation mask for the purpose. The tuberculin test proved the existence in the patient of localised tuberculosis. Though the result was good it is certainly possible in the light of other cases to suppose that the pneumothorax might have been rapidly recovered from, even without the special means adopted to re-expand the lung. In connexion with this case it should be mentioned that L. Brauer[33] has devised an ingenious apparatus for increasing the pressure of the air in the lungs during operations in which the pleural cavity has to be opened. He has likewise suggested its possible use as a method of treatment for pneumothorax in tuberculous subjects.

In some cases, as already stated, recovery from the pneumothorax (without operative treatment) may take place without any fluid being poured out into the pleura, but in most cases the occurrence of a succussion splash soon shows the presence of a serous, sero-purulent, or purulent[34] effusion, in fact, that the case has become one of hydropneumothorax or pyopneumothorax. The further treatment of cases of tuberculous hydropneumothorax and pyopneumothorax must to some extent depend on the general condition of the patient. In the "terminal" cases and when pulmonary tuberculosis is extremely advanced, a regular surgical operation can scarcely be recommended, but the fluid may be removed by paracentesis. In cases of pyopneumothorax without extensive pulmonary tuberculosis an operation like that for ordinary empyema is likely to give the most satisfactory results, though repeated paracentesis has often been practised, occasionally, as I shall point out later, with excellent results. Hydropneumothorax, as already stated, does not always turn into pyopneumothorax, and has sometimes, like pneumothorax without liquid effusion, healed spontaneously. It is usually treated by paracentesis,[35] but if the tuberculosis be not too advanced and repeated paracentesis fails an operation like that for empyema and pyopneumothorax may possibly, as S. West points out, be undertaken and lead to cure. It may be likewise incidentally noted that in one case at least a dry pneumothorax in a tuberculous subject has been treated by incision.[36]

In considering the results in individual cases obtained by operation it must not be forgotten that phthisical patients with pyopneumothorax (or at all events with a turbid serous or sero-purulent effusion) have been known to live a considerable time and even to have recovered, though operative treatment was limited to paracentesis.[37] In this connexion I would refer to cases recorded by L. Spengler and F. Penzoldt, but I shall have to consider them later in regard to the general treatment adopted. S. West gives relatively good results in a tuberculous hydropneumothorax by paracentesis[38] and in a case with sero-purulent effusion by incision.[39] L. Galliard[40] quotes illustrative cases of tuberculous pyopneumothorax in which surgical treatment (incision or resection of part of a rib) led to good results. Leyden[41] described two cases of tuberculous pyopneumothorax in which a successful result was obtained by drainage with resection of part of a rib, aided by general treatment against the tuberculosis. One of these patients had already lived two and a half years from the onset of the pneumothorax. Case No. 22 of Emerson's collection from the Johns Hopkins Hospital illustrates an at first fairly successful result of operation on pyothorax following a pneumothorax in a tuberculous subject. The improvement did not last but the case was altogether an unfavourable one.[42] D. W. Finlay[43] in 1904 recorded the case of a young man who, in 1900 at the age of 17 years, was admitted into the Aberdeen Royal Infirmary with tuberculous pneumothorax on the left side. There was some fluid effusion, serous at first, but afterwards becoming purulent. The case was treated by free incision and on different occasions resection of portions of several ribs and was likewise treated by open air on the balcony of the wards. The patient regained sufficient health to resume his occupation but there still remained a discharging sinus and a cavity of the capacity of one and a half ounces, the daily discharge of pus being about a teaspoonful; moreover, the urine had for some time contained albumin. Bäumler[44] narrated the case of a lady, aged 26 years, in whom the empyema following a tuberculous pneumothorax was subsequently treated in Denmark by repeated extensive resections of ribs but a small thoracic fistula still remained. In this connexion I may also refer to the second of the three cases I have already narrated. The patient in question, who was operated upon for pyopneumothorax in January, 1903, is now living in fair health but there is still a thoracic fistula discharging slightly. Her urine was free from albumin when examined in April, 1905. In February, 1904, at the Clinical Society of London, E. M. Corner[45] showed a man, aged 32 years, in whom pulmonary tuberculosis was first detected in 1898. In 1901 and 1902 on account of pyopneumothorax ribs were removed on the principle of Estlander's thoracoplasty. The result was complete healing, except for an aerial fistula, through which air could be expired. In the discussion at the Clinical Society when the case was shown, W. G. Spencer stated that he had operated on a case of pyopneumothorax and had removed a lot of caseous material from the lower lobe of the lung, and that apparently the disease had not advanced for three years following the operation. In conclusion, I would remark that cases of tuberculous pyopneumothorax in which anything like an Estlander's operation can be recommended must be very rare indeed.

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[30] With proper care, however, an ordinary aspirator can certainly be used, as Dr. G. A. Sutherland (THE LANCET, June 25th, 1892, p. 1419) and others have shown.

[31] Cf. remarks of Dr. Squire at the discussion on the Treatment of Tuberculous Pleural Effusion and Pneumothorax at the annual meeting of the British Medical Association, 1904, Brit. Med. Jour., Oct. 15th, 1904.

[32] Wiener Medicinische Wochenschrift, 1904, No. 26, p. 1228.

[33] Mitteilungen aus den Grenzgebieten der Medicin und Chirurgie, Jena, 1904, vol. xiii.

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[38] Loc. cit., p. 303 (Case 7).

[39] Loc. cit., p. 821 (Appendix). See also S. West, the Treatment of Pyopneumothorax, THE LANCET, Oct. 22nd, 1904, p. 1144.

[40] Le Pneumothorax, p. 186.

[41] Proceedings of the Verein für Innere Medecin, Berlin, February and March, 1890, Deutsche Medicinische Wochenschrift, 1890.

it., p. 264.

[43] 1904, vol. xxxvii., p. 183.

[44] ift, 1894, vol. xx., p. 739.

[45] 1904, vol. xxxvii., p. 243.

Whatever local treatment be adopted every endeavour must be made to improve the patient's general condition,[46] for, even if he recover from the local condition of pneumothorax, it is upon his general state of health (connected with his occupation, food, and general mode of life) that his power of resisting the advance of the tuberculosis mainly depends. In the chronic cases of hydropneumothorax and pyopneumothorax the patient should have a generous diet, plenty of fresh air, and all the advantages of the modern treatment of pulmonary tuberculosis. In this connexion certain writings of F. Penzoldt[47] and L. Spengler[48] are very instructive. Penzoldt's patient was a medical man, aged 30 years, who in April, 1900, presented physical signs of tuberculosis in the lower posterior part of the left lung; tubercle bacilli were detected in the sputum. At the commencement of June, 1900, pneumothorax of the left side developed and after two months became converted into a pyopneumothorax, the pus being apparently of the "empyème graisseux" kind. By the end of August the air in the pleural cavity was completely replaced by the fluid effusion. The treatment adopted consisted in repeated tappings and iodoform injections, together with rest in the open air and good feeding. To the strict observance of modern open-air principles Penzoldt in great part attributes the successful result. After July, 1900, there was no fever. During 1901 and 1902 the signs of empyema slowly cleared up and the heart gradually returned to its normal position. The cough and expectoration diminished and finally altogether ceased and the patient's weight steadily increased. Finally, he was able to return to work, and at the end of 1904 only slight impairment of resonance could still be detected over the left lung, at the apex and just outside the cardiac area. L. Spengler's results are quite as remarkable and speak highly in favour of the climatic and general treatment at Davos. Out of 20 cases of tuberculous pneumothorax under his care at Davos complete apparent cure resulted in five of the patients (ages between 18 and 30 years) with the exception that a small chronic pleuritic effusion remained in one of them. A serous or seropurulent effusion was present in all five cases, but operative treatment was limited to tapping. Two of the patients were under observation several years after their recovery.

Harley-street, W.

A CASE OF PRIMARY TUBERCULOSIS OF THE PHARYNGEAL TONSIL ASSOCIATED WITH TUBERCULOUS CERVICAL GLANDS

BY F. IVENS, M.B., M.S. LOND.,
CLINICAL ASSISTANT TO THE THROAT AND EAR DEPARTMENT, ROYAL FREE HOSPITAL, MABEL WEBB RESEARCH SCHOLAR.

THE view that the faucial and pharyngeal tonsils are an important channel of infection in tuberculosis was brought forward by Professor G. Sims Woodhead in a paper in THE LANCET in 1894.[1] The same author also pointed out that in cases where the glands are tuberculous but the tonsils produce no infection there is some perversion of the protective functions of the pharyngeal lymphadenoid tissue, so that the phagocytes which are constantly passing in and out through the epithelial covering of these structures are unable to destroy the tubercle bacilli they may have ingested and cannot carry on the struggle beyond the first lymph gland, where they succumb and allow the tubercle bacilli to exert their specific effects on the gland tissues. He draws attention[2] to the method of infection in the pig through the tonsils and pharynx and compares the lesions met with to those in scrofulous children and the importance of tuberculous milk as a source of infection through the pharyngeal mucous membrane. Latham[3] believes that both in adults and children the primary infection in tuberculosis is by the lymphatic system and is dependent upon the tubercle bacilli of an infected milk-supply passing through either the upper or lower portion of the alimentary tract. He is of opinion that infection spreads from the cervical to the bronchial glands and quotes the case of a child, aged three months, in whom both tonsils were ulcerated, one being tuberculous. The glands on the same side of the neck and the bronchial glands were tuberculous and there was general tuberculosis. The mother had died from pulmonary tuberculosis and the child was fed from the mother's milk. Purves-Stewart[4] described a case of chronic enlargement of the tonsils and enlargement of the cervical glands in a child, aged 10 years. Giant cell systems were present beneath the epithelial surface of the faucial tonsils and the cervical glands were also tuberculous. Walsham[5] showed that in post-mortem cases of pulmonary tuberculosis tubercle of the tonsils was common, but he was unable to find any evidence of tuberculosis in tonsils and adenoids removed from the living patient. Dmoschowski[6] has demonstrated tubercle bacilli in the lymphatics connecting the tonsils with the cervical glands. Moore[7] has recorded some interesting observations on the subject. He examined 20 cases of tuberculous glands and six presented inflammatory lesions of the faucial and pharyngeal tonsils. He therefore considers that these are one of the chief portals of entry in lymph node tuberculosis. Morgan[8] emphasises the futility of excising an enlarged cervical gland not yet suppurating while leaving behind a probable cause in the shape of tuberculous ulceration of the lymphoid tissue of the naso-pharynx. Cheyne[9] does not think tonsils or adenoids play a very important part in the causation of enlarged cervical glands on the grounds that typical tuberculous ulceration in these parts is rare. At all events, it is a clinical fact that well-marked cases of adenoid hypertrophy are usually associated with a corresponding degree of enlargement of the superior set of deep cervical glands and there is no doubt that in a certain number of cases these glands become tuberculous.

In England investigations have been made chiefly on the faucial tonsils and only one or two cases of primary tuberculosis of the pharyngeal tonsil have been recorded. On the continent and in America more work has been done. Disregarding the results of those observers who found tubercle in the tonsils post mortem in cases of pulmonary or general tuberculosis, cases of primary tuberculous infection of adenoids have been described by Wendt,[10] Mégévand,[11] and Suchannek.[12] In 1892 Pilliet[13] examined ten cases of adenoids and found one containing giant cells and showing necrosis. In 1895 Lermoyez[14] recorded a very complete and interesting case of primary tuberculosis of the pharyngeal tonsil in which recurrence took place. The patient was a boy, six years of age. When first seen by Lermoyez in 1893 he presented characteristic signs of adenoids with enlarged faucial tonsils and palpable cervical glands but no visceral lesion. The child's father was healthy, but the mother showed signs of glandular abscesses in the neck. A sister had previously died from tuberculous meningitis. On Oct. 20th, 1893, the adenoids were removed, but no histological examination was made. For a short time some improvement resulted, but four months later all the former symptoms reappeared and soft vegetations could again be felt in the naso-pharynx. These were again curetted and the child was then sent away to a sanatorium. The adenoids were examined histologically and typical tuberculous systems were found

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[46] Leyden in 1890 at the Berlin Verein für Innere Medicin drew attention to the great importance of combining general hygienic treatment with local treatment in such cases.

[47] Deutsches Archiv für Klinische Medicin, 1905, vol. lxxxiv., p. 57.

[48] Zeitschrift für Tuberkulose, Leipsic, 1901, vol. ii., pp. 27, 165.

[1] THE LANCET, Oct. 27th, 1894, p. 957.

[2] Report of the Royal Commission on Tuberculosis, vol. iii., p. 115.

[3] THE LANCET, Dec. 22nd, 1900, p. 1785.

[4] Brit. Med. Jour., May, 1895.

[5] Transactions of the Pathological Society, vol. xlix.

[6] Beiträge zur Pathologischen Anatomie, Jena, 1891.

[7] Journal of Pathology and Bacteriology, 1900, vol. vi., p. 94.

[8] Brit. Med. Jour., 1899, vol. ii., p. 453.

[9] Ibid., p. 1693.

[10] Ziemssen's Handbuch, 1874.

[11] Contribution à l'Etude des Maladies de la Voute du Pharynx, Geneva, 1887.

[12] Ziegler's Beiträge, 1893, Band iii.

[13] Bulletin de la Societe de Anatomie de Paris, 1892, tome vi., p. 236.

[14] Bulletins et Memoires de la Societe de Medecine des Hôpitaux de Paris, tome xi., troisieme serie.

TREATMENT.

The treatment of pneumothorax occurring in tuberculous subjects is that of pneumothorax generally, together with the hygienic measures peculiarly suitable for the pulmonary tuberculosis (open-air, feeding, climate), especially in regard to after-treatment. The question of treatment may be considered under measures to be adopted at the commencement of the pneumothorax and those which may become advisable later. If the onset be accompanied by symptoms of collapse, diffusible stimulants will be required. Sometimes special cardiac stimulants, such as digitalis or strophanthus, are given. In some cases sedatives, such as codeine or a small hypodermic injection of morphine, are indicated to relieve pain and excitement, but great caution must be exercised in regard to the dose as a decided narcotic effect may easily be harmful. Aperients may be serviceable to diminish the congestion of the portal system when pneumothorax occurs in relatively full-blooded individuals. The patient should not be unnecessarily moved about as movements increase the dyspnœa and distress. Inhalation of oxygen may, perhaps, be of temporary use. Whenever there is reason to believe that the distress is due to excessive tension of the pneumothorax ("valvular pneumothorax") the air may be allowed to escape by (West's method) a cannula with an indiarubber tube attached, the other end of the tube being allowed to hang down into a basin of sterilised water, or the air may be allowed to escape through a cannula into antiseptic dressings.[30] The necessity for paracentesis probably arises only in a very limited number of cases[31] and in most of them not very long after the onset of the pneumothorax.

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In considering the results in individual cases obtained by operation it must not be forgotten that phthisical patients with pyopneumothorax (or at all events with a turbid serous or sero-purulent effusion) have been known to live a considerable time and even to have recovered, though operative treatment was limited to paracentesis.[37] In this connexion I would refer to cases recorded by L. Spengler and F. Penzoldt, but I shall have to consider them later in regard to the general treatment adopted. S. West gives relatively good results in a tuberculous hydropneumothorax by paracentesis[38] and in a case with sero-purulent effusion by incision.[39] L. Galliard[40] quotes illustrative cases of tuberculous pyopneumothorax in which surgical treatment (incision or resection of part of a rib) led to good results. Leyden[41] described two cases of tuberculous pyopneumothorax in which a successful result was obtained by drainage with resection of part of a rib, aided by general treatment against the tuberculosis. One of these patients had already lived two and a half years from the onset of the pneumothorax. Case No. 22 of Emerson's collection from the Johns Hopkins Hospital illustrates an at first fairly successful result of operation on pyothorax following a pneumothorax in a tuberculous subject. The improvement did not last but the case was altogether an unfavourable one.[42] D. W. Finlay[43] in 1904 recorded the case of a young man who, in 1900 at the age of 17 years, was admitted into the Aberdeen Royal Infirmary with tuberculous pneumothorax on the left side. There was some fluid effusion, serous at first, but afterwards becoming purulent. The case was treated by free incision and on different occasions resection of portions of several ribs and was likewise treated by open air on the balcony of the wards. The patient regained sufficient health to resume his occupation but there still remained a discharging sinus and a cavity of the capacity of one and a half ounces, the daily discharge of pus being about a teaspoonful; moreover, the urine had for some time contained albumin. Bäumler[44] narrated the case of a lady, aged 26 years, in whom the empyema following a tuberculous pneumothorax was subsequently treated in Denmark by repeated extensive resections of ribs but a small thoracic fistula still remained. In this connexion I may also refer to the second of the three cases I have already narrated. The patient in question, who was operated upon for pyopneumothorax in January, 1903, is now living in fair health but there is still a thoracic fistula discharging slightly. Her urine was free from albumin when examined in April, 1905. In February, 1904, at the Clinical Society of London, E. M. Corner[45] showed a man, aged 32 years, in whom pulmonary tuberculosis was first detected in 1898. In 1901 and 1902 on account of pyopneumothorax ribs were removed on the been no prodromal symptoms. She was said to have suffered from pneumonia three months before, for which she had been treated by a native doctor at her own house. There was nothing else in the history of any bearing on the case.

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[31] Cf. remarks of Dr. Squire at the discussion on the Treatment of Tuberculous Pleural Effusion and Pneumothorax at the annual meeting of the British Medical Association, 1904, Brit. Med. Jour., Oct. 15th, 1904.

[32] Wiener Medicinische Wochenschrift, 1904, No. 26, p. 1228.

[33] Mitteilungen aus den Grenzgebieten der Medicin und Chirurgie, Jena, 1904, vol. xiii.

[34] In chronic tuberculous empyema and pyopneumothorax the effusion may contain a great quantity of granular débris ("empyème graisseux").

[35] If a pneumothorax of any kind be aspirated, great care must be taken to aspirate very gently so as not to reopen the perforation in the lung which may have become closed.

[36] This treatment was followed in F. D. Crowdy's case by complete recovery as far as the pneumothorax was concerned (Brit. Med. Jour., vol. i., 1892, p. 367.

[37] Dr. F. R. Walters has kindly told me of a gentleman under his care who illustrated this point. See also Dehio's case described in the St. Petersburger Medicinische Wochenschrift, 1900, No. 25, p. 247.

[38] Loc. cit., p. 303 (Case 7).

[39] Loc. cit., p. 821 (Appendix). See also S. West, the Treatment of Pyopneumothorax, THE LANCET, Oct. 22nd, 1904, p. 1144.

[40] Le Pneumothorax, p. 126.

[41] Proceedings of the Verein fur Innere Medecin, Berlin, February and March, 1890, Deutsche Medicinische Wochenschrift, 1890.

[42] Vide Emerson, loc cit., p. 264.

[43] Transactions of the Clinical Society, 1904, vol. xxxvii., p. 183.

[44] Deutsche Medicinische Wochenschrift, 1894, vol. xx., p. 733.

[45] Transactions of the Clinical Society, 1904, vol. xxxvii., p. 243.

On admission the patient was found to be semi-conscious. The pulse was 100, the temperature was 98·4°F., and the respirations were 20. The uterus was of the size at full term, no fœtal heart sounds could be heard and she was not in labour. There was slight œdema of the feet; the thyroid gland was not enlarged. Three ounces of urine were drawn off by a catheter; it contained a large amount of blood, gave an acid reaction, and contained so large a quantity of albumin that it became completely coagulated on boiling. The urea was only about 0·003 per cent. At 2.10 P.M. on the same day, about one hour after admission, she had a fourth fit, lasting for about two minutes. At 2 40 P.M. half a grain of morphinæ sulphas was administered hypodermically and 25 grains of thyroid extract (Burroughs, Wellcome, and Co.'s tabloids) were given by the mouth. She had a fifth fit at 3.30 P.M. and a sixth at 9.10 P M., each lasting about one minute. Immediately after this last fit a second dose of morphinæ sulphas (a quarter of a grain) was given hypodermically. Another five grains of thyroid extract were administered at 8 P.M. and this was repeated at four-hourly intervals up to 8 A.M. on the 30th and afterwards two hourly to 2 A.M. on the 31st. She remained in a semi-conscious state between the fits (being, however, able to take her nourishment) but was quite unconscious during the attack. She gradually recovered consciousness by about midday on the 30th, the day following admission.

Labour pains began at 1 A M. on the early morning of Dec. 31st. The os was fully dilated at 5.15 A.M. As she became rather collapsed at this time with a very rapid and weak pulse and a temperature of 101·4° a hypodermic injection of liquor strychninæ (five minims) was ordered. She improved somewhat after this but labour was not progressing very satisfactorily, so at 6.40 A M. low forceps were applied and a dead male child, weighing 6 pounds 13 ounces, was easily delivered. After this she was again somewhat collapsed, so at 6.45 A.M. another hypodermic injection of liquor strychninæ (seven minims) was given. There was a slight rupture of the perineum, which was not repaired, as the patient's condition was too bad. The liquor amnii was exceedingly offensive. The placenta was expressed ten minutes later and an intra-uterine douche of tinctura iodi (two drachms to one pint) was given. She rallied fairly well in the course of the day but there was some dyspnœa and the physical signs pointed to œdema of the lungs, so a stimulant cough mixture was ordered from 12 noon, to be given three-hourly, and this was continued up to the 14th. Thyroid gland tabloids (5 grains) were given at 10 A.M. and 2 P.M. Towards evening her condition again became low, so at 6 P.M. she was ordered a mixture of liquor strychninæ, with spiritus ammoniæ aromaticus and spiritus ætheris, and this was repeated at 8 30 P M., at midnight, and at 4 A.M. on the early morning of the following day (Jan. 1st). It was then omitted as her condition was much improved and the thyroid gland (5 grains), which had been temporarily left off, was again given at noon and at 6 30 P M., and repeated three times on Jan. 2nd and after this twice a day up to the evening of the 14th. On the morning of this day (Jan. 1st) it was noticed that the lochia were rather offensive, so vaginal douches of izal (1 in 200) were ordered twice daily to Jan. 5th, after which date carbolic acid douches (1 in 40) were substituted and continued up to Jan. 14th every morning and evening.

On Jan. 2nd, at 9 A.M , the patient had a rigor lasting one hour with a rise of temperature to 103·4°. The discharge continued to be rather offensive. On the next day she again had a rise of temperature to 103°, but there was no rigor. On the morning of the 4th, on making a vaginal examination, the cervix was found to be in an unhealthy and sloughing state and the tear in the perineum was also rather sloughy; iodised phenol was therefore applied. This was followed in half an hour by a rigor lasting for 30 minutes, the temperature rising to 103·4°. At 5 P M. she had a second rigor lasting one hour, the temperature rising to 104·2°. The application of iodised phenol was repeated on the 6th, 8th, and 10th, and on the latter date it was noted that the parts were looking much healthier. On the 5th, 6th, and 7th there was no rise of temperature above 100°, but on the 8th it reached 102°, and on the 9th at 7 P.M. there was a rigor lasting half an hour, the temperature rising to 103·8°. On the 11th the patient complained of severe pain in the left shoulder-joint and all down the left side of the chest, extending to the hypochondriac region. Careful examination revealed no abnormal physical signs and the spleen could not be felt. A belladonna plaster was ordered to be applied over the hypochondriac region. The pain continued during the 12th. On the 13th she had another rigor at 6 A.M. lasting for three-quarters of an hour, the temperature rising to 105°. At this time she complained very much of pain in the epigastrium and was again examined but with a negative result. The pain was relieved by turpentine stupes. Her bowels had been opened four times on this day, but as the pains seemed to be of a colic nature, oleum ricini (six drachms) was administered at 3 P.M. with, however, no effect on the pains. The bowels were not opened during the night and as the abdomen was becoming rather distended at 6.30 A M. on the 14th an enema simplex, with one ounce of turpentine, was given by a long rectal tube, but with no result. The bowels did not act at all during the day and there was increasing abdominal distension with slight tenderness. Five grains of calomel were therefore given at 8 P.M., followed by salines every two hours. She vomited twice during the night for the first time—viz., at 1 and 2 A.M.—and three times during the morning of the 15th, bringing up bile stained fluid. There was still complete constipation and the distension and tenderness were increasing, so chloroform was administered at noon and the abdomen was opened in the mid-line by an incision about three inches long, commencing from about one inch below the umbilicus. A large quantity of stinking purulent fluid at once escaped. On examination the intestines were found covered with recent lymph; the uterus, tubes, and ovaries were all normal except for some slight adhesions round the right ovary. The vermiform appendix and the liver felt quite healthy but there was a good deal of thickening and numerous adhesions were detected in the region of the stomach. A second three-inch incision was therefore made in the mid-line, extending upwards from about one inch above the umbilicus, for the purpose of thoroughly exploring this region. There was thickening of the omentum with many adhesions to the stomach and that organ was found to be very adherent to its surroundings, but no evidence of perforation or ulceration could be found. A gauze drain was inserted upwards between the liver and the stomach and the wound was closed with through-and-through silkworm-gut sutures, except where the gauze was brought out. Previously to doing this the peritoneal cavity had been thoroughly flushed out with normal saline solution. The lower wound was now closed except where a rubber tube was brought out which drained Douglas's pouch and a gauze wick leading upwards towards the stomach The patient's condition at this time being very bad she was infused with a pint of normal saline solution containing one ounce of brandy in the right median basilic vein. During the operation the bowels were opened naturally on the table. Immediately after the operation a hypodermic injection of atropine, eserine, and strychnine was given. She only survived two and a quarter hours and died at 3.45 P M. The amount of urine passed each day could not be accurately measured as the patient frequently micturated in bed. Albumin, however, was present in considerable quantity right up to the last, varying from a half on the day after delivery to a thick cloud on the day of death.

Necropsy.—At the post-mortem examination (which was made 18 hours after death) the body was found to be well nourished; rigor mortis was present. There were two incisions in the mid-line of the abdomen, each about three inches long, one extending up from one inch above the umbilicus and the other down from one inch below the umbilicus. The upper one was closed by suture except where a gauze drain came out and the lower had a rubber drain tube and gauze drain at its upper angle. The left pleural cavity was healthy. The base of the left lung was adherent to the diaphragm. The right pleural cavity had numerous bands of adhesions externally and at the apex. The pericardium contained clear fluid. The heart weighed ten ounces. The tricuspid valve admitted the tips of three fingers. The mitral valve admitted the tips of two fingers. The heart muscle was normal; the root of the aorta was also normal. The left lung was œdematous throughout, especially at the base; a portion floated in water; there was no consolidation. The right lung was similar to the left. The pharynx and œsophagus were normal, as were also the larynx and trachea. The abdominal with well-formed giant cells. Tubercle bacilli were found in the giant cells. There was little caseation and many of the nuclei showed karyokinetic figures. Two months later the child again showed signs of recurrence. In 1895 Dieulafoy[15] examined 35 cases of adenoids by inoculation and seven of the animals became tuberculous. His communication was severely criticised by the Academy on the grounds that virulent bacilli might be entangled in the mucus of the crypts without the tissues themselves being tuberculous. In none of his cases was any histological examination made. In 1895 Brieger[16] examined 78 cases and found morphological evidence of tubercle in five. In 1896 Gottstein[17] found three lesions of tubercle in 33 specimens. In the same year Pluder and Fischer[18] examined 32 cases and found five to be tuberculous. The tubercles were chiefly in the superficial portions of the tissue and bacilli were found in them. The patients were otherwise healthy. In 1897 McBride and Turner[19] in Edinburgh examined 100 cases of adenoids and found three showing giant cells. Their diagnosis of tubercle was based on the presence of giant cells and in no cases were tubercle bacilli or caseation found. One case was associated with caseous cervical glands. Lewin[20] investigated 200 cases and found tubercle in ten histologically. He concluded that the tubercle bacillus played very little part in the etiology of hypertrophy of the pharyngeal tonsil. Hynitsch[20] examined 180 cases, of which seven were found to be tuberculous. Bacilli were only found in three of the specimens.

Lartigan and Nicoll[22] examined 75 consecutive cases of adenoids from apparently quite healthy children. Out of these 12 induced tuberculosis in guinea-pigs and eight contained lesions histologically resembling tubercle with giant cells, epithelioid cells, caseation, and tubercle bacilli. In four bacilli only were found. The giant cells were few in number, there was little caseation, and the lesions were chiefly at the periphery. Macfadyean and MacConkey[23] investigated by inoculation 44 cases and in none was any naked-eye sign of tubercle seen, nor were tubercle bacilli found in the organs of the experimental animals.

With regard to the methods of examination for the presence of tubercle, Wright[24] has pointed out their respective fallacies. In inoculations on animals surface contaminations cannot be excluded and it has been shown that tubercle bacilli are occasionally present in the upper air passages of healthy people. Animals also are likely to die from septicæmia due to pyogenic germs in the crypts. Again, in latent lesions tubercle bacilli may be so scarce that they are not present in sufficient numbers to infect even a susceptible guinea-pig.

As regards staining of the bacilli in sections no one who has had any experience in looking for them fails to appreciate the amount of labour involved and the difficulty of demonstrating their presence. It is not easy to find tubercle bacilli in lymphoid tissue studded with tubercles visible to the naked eye and it is the exception to find them in the scanty anatomical tubercle of latent tuberculosis. This point is also emphasised by Sakchiko,[25] who says that the absence of tubercle bacilli need not negative the diagnosis of tuberculosis, since when the microscopical appearances are typical of tuberculosis one frequently fails to find bacilli in the majority of the groups of giant cells. Wright considers that diagnosis by microscopical appearance is the most trustworthy. In my investigations I restricted myself to the two latter methods—viz., staining serial sections for the characteristic lesions of tubercle by means of hæmalum and eosin and for the bacilli by Ziehl-Neelsen's method. I examined 35 specimens of adenoids, all from children between two and 13 years of age.

For permission to examine 34 of these cases from the Evelina Hospital I am indebted to Mr. Walter Edmunds and for one from the wards of the Royal Free Hospital to Mr. A. B. Barrow. They were all well-marked cases of adenoids in children presenting no recognisable sign of pulmonary or abdominal tuberculosis. In nearly every case the cervical glands were more or less enlarged and in one instance they were caseating. The adenoids were removed as far as possible in one mass with the Delstanche-Gottstein curette. They were hardened in formalin and imbedded in paraffin. In 30 cases the microscopical appearances were those of simple hypertrophy. In four there was evidence of chronic inflammation. The characteristic epithelium was in places desquamated. The vessels were increased in number and their endothelial lining had proliferated, while around them was considerable increase of fibrous tissue. Of these four cases two had purulent otitis media.

In the thirty-fifth case there was well-marked histological evidence of tubercle. The patient, a boy, aged three years, was admitted to the Royal Free Hospital on Feb. 17th, 1904. He was the youngest of 11 children, one of whom was said to have died from meningitis. Both father and mother were healthy. His mother had noticed a swelling in the neck for some months. This gradually increased in size and a purulent discharge from the ear appeared. On admission the child showed the characteristic adenoids facies. The tonsils were slightly enlarged and glands were felt on each side of the neck. On the left side they had broken down and formed a fluctuating swelling. On Feb. 20th an incision two inches long was made behind the left sterno-mastoid and caseating tuberculous glands were found and scraped out with a Volkmann's spoon. The wound was closed. The adenoids and the slightly enlarged tonsils were then removed. The latter were, unfortunately, not preserved. The pharyngeal tonsil, which was very large, presented no macroscopical lesion on the surface. It was hardened and imbedded as usual. On cutting sections pale areas of the size of a pin's head could be seen with the naked eye scattered through the lymphoid tissue. Under the microscope these proved to be typical tuberculous systems with early central caseation. In each were two or three large giant cells with peripheral nuclei and surrounding them were epithelioid cells. At one point the tubercles approached the surface and the epithelium was replaced by granulation tissue. The vessels were increased in number and in thickness. Many of the nuclei in the more healthy lymphoid tissue showed karyokinetic figures. The tubercles were scattered through the tonsil and were not limited to the superficial portions. Numerous sections were examined for tubercle bacilli but none could be found. The patient did well. The wound in the neck healed by first intention. Some months later the tuberculous glands were cleared out from both sides of the neck. Now, 15 months after the first operation, the boy looks well in spite of a recent attack of measles. He shows no signs of recurrence of the adenoids but in the neck one or two slightly enlarged glands can still be felt.

In conclusion, it is evident that tuberculous cervical glands may be secondary to a primary focus in the adenoid tissue of the naso-pharynx and further observations will probably show that the two conditions are very closely connected. At any rate, in cases of tuberculosis of the cervical glands, where no other source of infection can be found, the pharyngeal tonsil must be regarded with suspicion.

Wimpole-street, W.

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[15] Bulletin de l'Académie de Médecine de Paris, 1895, tome xxxiii.

[16] Verhandlungen der Deutschen Otologischen Gesellschaft, Jena, 1895.

[17] Berliner Klinische Wochenschrift, 1896.

[18] Archives de Laryngologie, d'Otologie, et de Rhinologie, 1896.

[19] Edinburgh Medical Journal, May, 1897, vol. i.

[20] Archiv fur Laryngologie, 1899, Band ix.

[21] Zeitschrift fur Ohrenheilkunde, 1899, Band xxxiv.

[22] American Journal of the Medical Sciences, June, 1902.

[23] Brit. Med. Jour., July 18th, 1903.

[24] New York Medical Journal, April, 1900.

[25] Berliner Klinische Wochenschrift, Jan. 12th, 1903.

A CASE OF ECLAMPSIA WITH DEATH ON THE SIXTEENTH DAY AFTER DELIVERY FROM GENERAL SEPTIC PERITONITIS, DUE TO RUPTURE OF AN ABSCESS IN THE SPLEEN.[1]

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A BENGALI Hindu, aged about 30 years, who had been married 20 years, and had had one child about 11 years ago, was admitted to the hospital at 1.10 P.M. on Dec. 29th, 1904, with a history that she was pregnant nearly full term and had had three fits—two at her house, the first early in the morning, and the third in the conveyance on her way to the hospital. Each fit had lasted about two minutes. There had and to get at the true position of the matter as it now is only the work of the last few years should be reviewed. Results obtained, say, ten years ago would not, in my opinion, be fair criteria of those which may be expected at the present time owing to the steady improvement in wound treatment and the provision of better material for ligatures. My own limited experience of proximal ligature, whether in the extremities or in the abdomen by the intraperitoneal method, has been very satisfactory. In no case has there been any untoward result; each case has done well throughout except that one patient with popliteal aneurysm suffered gangrene of the toes after ligature of the superficial femoral artery.

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[1] A paper communicated to the Obstetrical Society of London on June 7th, 1905.

Of distal ligature the case described above is my only experience and the result is so excellent as far to surpass my expectations formed at the time of the operation. Setting out with the intention of applying a ligature on the proximal side of the aneurysm I was compelled by circumstances to resort to what I regarded as a much inferior method of treatment. In considering what were the favourable conditions influencing the result I would assign considerable importance to the courageous and placid conduct of the patient, who behaved in the most admirable manner although he knew well the gravity of the measures undertaken in his case. His willingness to submit to long-continued restraint in the use of his arm after operation was probably also very helpful. For some days before and after the operation I gave considerable doses of calcium chloride with the intention of increasing the coagulability of the patient's blood and so producing an efficient clot to protect the ligatured area. One does not in such a case like to omit any small measure which may be of utility and it is not easy to say whether the drug was of any advantage or not. I have, however, often wondered whether a severe attack of gout which ensued during recovery was determined by the free administration of a salt of calcium.

One word on the question of whether the internal coat of the artery should or should not be divided by the ligature. On *a priori* grounds it seems best to tie the ligature without inflicting this damage on the artery and I tied my ligatures in this case with the intention of not dividing the internal coat, but I freely acknowledge the uncertainty as to whether I attained my purpose or not. For some years I have employed the "stay knot" advocated by Ballance and Edmunds but departed from it in this case as the kangaroo tendon specially set aside for the operation would have made an undesirably bulky knot pressing on the vessels. From specimens observed in museums it appears to me probable that a hard massive knot may have played a part in bringing about calamity after arterial ligature in continuity.

Birmingham.

INDUSTRIAL MERCURIAL POISONING: WITH NOTES OF TWO CASES.

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AS the use of mercury for industrial purposes is increasing to a great extent, perhaps a few notes I have taken during the last 12 months, with the reports of one or two cases, may be of interest. The cases and the treatment I have reported below refer to men whom I have seen in my monthly examination of over 60 men. This examination was instituted in order that any men showing the least symptom of poisoning might be removed from their work. The work in which the men are employed consists of the manufacture of electric meters for regulating the amount of electricity that is consumed. There are two kinds of meters made—viz., the motor and the electrolytic. The principle of the former consists of a disc covered with mercury revolving in a bath of mercury. The latter is simply a glass meter, made by filling a glass U-shaped tube with mercury. In the construction of the motor meters the disc is first washed in acid nitrate of mercury, then put into metallic mercury, and finally washed in cold water. The bath is then filled with mercury by means of a paper funnel. The disc is then taken out, sometimes by hand. When the meter will not work it is taken to pieces and the mercury is emptied from it into a large wooden trough with a funnel-shaped bottom. This trough seems to me to be a likely place for the mercury to volatilise in.

The electrolytic meters are filled by a small glass tube, which is inverted when mercury is emptied from it into U-shaped tubes. It is during this inversion that the mercury comes into contact with the hands. Mercury enters the system by: (1) volatilisation and inhalation; (2) absorption through the skin; and (3) direct introduction into the mouth—viz., eating with dirty hands, &c. According to Dr. A. Swaine Taylor metallic mercury is not regarded as a poison, a large quantity swallowed in the fluid state causing no uneasiness except by its great weight. It rapidly passes through the bowels. If mercury is breathed or swallowed in a state of vapour, or if it is applied to the skin in a state of mechanical division, it appears to be easily susceptible of oxidation and is then absorbed, producing its poisonous action in the body.

The chief symptoms met with in industrial mercurial poisoning are: gastric disturbance, causing loss of appetite, abdominal pains of the nature of colic, diarrhœa, constipation, furred tongue, and foul breath; anæmia, with shortness of breath and other symptoms; salivation, often causing the patient to wet his pillow at night; inflammation of the gums, causing swelling, tenderness (often noticed when the jaws are closed rapidly) and recession of the gums, exposing the roots of the teeth; decay of the teeth, with loss of the same; metallic taste in the mouth; nervous disturbance, tremors of the face, the arms, the legs, and the tongue; sleeplessness, depression, sleepiness and weariness; and speech hesitating and blurred, due partially to increase of saliva but more especially to tremor of the face muscles. Intense ulceration of the mouth and necrosis of the jaw are seldom seen now, as the disease is usually checked in its early stages. Numbness and tingling sensations are felt, especially in the hands, with pains in the joints. Other symptoms are a blue line along the gums and sweating, especially in the hands. Whether the former is due to mercury deposited in the gums, as lead is deposited, is uncertain. The sweating is probably only a nervous phenomenon similar to that occurring in great smokers. Mercury is said to be recoverable from the urine some weeks after poisoning.

Prognosis.—In a moderate case I should say the prognosis is good, most of my cases recovering in about four months. Patients, however, must not be allowed to work with mercury for some considerable time, because poisoning is likely to recur.

Treatment.—The treatment I have advised is prophylactic as well as active. Only healthy and temperate men with sound teeth should be employed in the work, which should be carried on in a well-ventilated room, illuminated by daylight. Only eight hours' work a day should be allowed, no man being permitted to work over-time. Water, soap, towels, and nail-brushes should be provided and the men advised to wash before leaving work. A good plan is to let the men off five minutes earlier, as is done at the firm of which I speak. Nails and hair should be kept short and any cuts or sores on body, hands, or limbs should be immediately covered up. Overalls and caps should be worn and where possible gloves. Outdoor coats should be kept in another room. No meals should be eaten in the workroom. In the winter when the men are working with closed windows it is a good plan to have doors and windows opened during dinner hour. Every man should wash his teeth night and morning with a tooth brush. I think due attention to the teeth is most important, as I have never seen a case of mercurial poisoning unless the teeth were decayed or dirty. I give a mouth wash of five grains of alum, five grains of chlorate of potash, half a drachm of glycerine, and water to the ounce, to be used two or three times a day when the gums are soft and inflamed. For general condition the patient should stop work in mercury, get as much fresh air as possible, and never fatigue himself bodily or mentally. By this treatment the nervous system is greatly benefited. Light and nourishing diet is essential for the patient's gastric disturbance. The bowels should be kept open by cascara sagrada, liquorice, aloes, &c. Potassium iodide is said to be a specific, but so far I have had very indifferent results from it. I have found patients benefited by five grains of bromide of potassium, five minims of tincture of digitalis, three minims of solution of strychnine, with water to one ounce.

relegated at once and satisfactorily into one or other class of these two. Not so is it, however, in the outer zones of the germ centres. Here both germ centre cells and lymphocytes tend to be arranged in concentric rings formed of a delicate fibrous tissue and all gradations are seen between undoubted germ-centre cells, on the one hand, and undoubted lymphocytes on the other. Under a low power of magnification the germ centre often seems sharply delimited from the surrounding parts and the cancerous deposit is less distinctly outlined; with higher magnifying powers this appearance is reversed and the germ centre is found, on careful observation, to grade into the lymphatic tissue around while the carcinomatous growth is sharply defined.

If during an examination of the lymphatic glands in a doubtful case of carcinoma the possible presence of these hypertrophied centres be borne in mind, it is not likely that any mistake will be made; but should an area of cells be encountered which gives rise to any doubt a careful consideration of the various points of difference enumerated above will enable the observer to satisfy himself as to its nature and may relieve also the mind of the surgeon and of his patient of the distressing dread of a recurrence of a disease which is not there.

ANEURYSMAL DILATATION OF THE RIGHT SUBCLAVIAN ARTERY, THE INNOMINATE AND THE FIRST PART OF THE COMMON CAROTID;

DISTAL LIGATURE OF THE FIRST PART OF THE AXILLARY ARTERY AND THE MIDDLE OF THE COMMON CAROTID WITH RESULTING OBLITERATION OF THE SUBCLAVIAN.

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A finely built man, aged 45 years, was admitted to the General Hospital on Sept. 27th, 1904, complaining of pain in the right upper extremity and a pulsating swelling above the right clavicle. The pain in the right arm began about six months before admission; it was of an aching character and very continuous, the most troublesome part being the right shoulder blade. The patient found that he was unable to sleep on his right side. Pain was the first symptom noticed and three months later a swelling appeared above the clavicle; this gradually got larger and for two months the patient sought relief by carrying his arm in a sling.

On admission a swelling of about the size of an egg, with expansile pulsation and a soft bruit over it, was found above the right clavicle. The swelling extended from the outer margin of the sterno-mastoid along the subclavian artery as far as the latter could be examined; the other accessible vessels appeared to be quite healthy but pulsation was slightly delayed in the right radial artery. Cardiac dulness appeared to be normal but there was a doubtful murmur in connexion with the first sound over the aortic area and the second sound was ringing in character. There did not appear to have been any special injury or severe strain as the cause of the aneurysm; the patient had never suffered from specific disease, but he had been the subject of several attacks of gout and there were numerous tophi in both ears. The condition was regarded as one of aneurysmal dilatation of the second and third parts of the subclavian artery rather than as a distinct sacculated aneurysm. For the treatment alternative courses presented themselves: (1) ligature of the first part of the subclavian; (2) ligature of the innominate artery; whilst a third possibility was not at that time contemplated—namely, distal ligature of the first part of the axillary artery. On the whole it appeared that, grave as is the ligaturing of either of the arteries above mentioned, experience was in favour of tying the innominate and it was determined to endeavour to secure this vessel. An incision was accordingly made along the internal border of the sterno-mastoid, beginning about its middle and extending downwards over the sterno-clavicular joint; from the lower end of this a second incision nearly three inches was made along the clavicle. The flap of skin was turned back, both heads of the muscle were separated from the bones, the sterno-hyoid and sterno-thyroid muscles were divided and drawn inwards, and some veins of considerable size were ligatured. The hope of being able to expose the innominate without removal of any part of the clavicle was soon shown to be vain and accordingly the inner third of the clavicle was removed. The internal jugular vein being drawn outwards careful dissection exposed the lower part of the carotid artery where it ended in the innominate and it was at once evident that the whole of the innominate and also three-quarters of an inch of the carotid artery were widely dilated and were undesirable vessels for the application of a ligature. Attention was then directed to the possibility of ligaturing the first part of the subclavian artery and the vertebral so as to diminish as far as possible the disturbance of the blood current close to the ligature if the first part of the subclavian was chosen. Here, again, disappointment was met with, for the first part of the subclavian was equally dilated as the other vessels exposed and the vertebral artery also; it was evident therefore that one had to deal with marked dilatation of the innominate, the first portion of the common carotid, and of the whole of the subclavian artery and possibly of all the main branches of the last mentioned. With the concurrence of my colleague Sir T. F. Chavasse, who was good enough to help me at the operation, I determined to ligature the common carotid artery above the limit of dilatation and to tie also the first part of the axillary if that were found to be healthy. The last-mentioned vessel was exposed at its highest part and was found healthy; this and the middle of the common carotid were therefore ligatured with kangaroo tendon somewhat coarser than No. 4 catgut. Each ligature, a single one, was tied with the intention of using such force as was necessary to close each vessel but without dividing the internal coat of either. The wound was drained by a narrow drainage-tube which was placed just under the flap of skin and not in close proximity to either ligature; it seemed safer to drain as the wound was rather oozy, firm compression being not easy to obtain. The wound healed throughout by first intention but the patient was kept at rest for nearly five weeks and when he was discharged from the hospital his right arm was bandaged to his side, though a little later on he was allowed to use the hand for writing so that he might carry on his work as an agent. The arm was kept to the side until May 18th, when he was allowed to dispense with the bandage and to use the limb more freely.

At the present time there is no pulsation to be felt in any part of the subclavian artery, a quite small current of blood finds its way into the lowest portion of the right common carotid, and it is doubtful whether the innominate can be felt; certainly nothing like a dilated artery is within reach.

The surgical treatment of diseases of the large arteries assumes in the present day a less important position than that assigned to it in the past. There are probably two main reasons for this, the first being the more frequent occurrence of other great lesions of the body to the successful treatment of which surgeons have devoted so much time and thought during the past few years. These new fields of surgery from which our predecessors were excluded have proved so interesting and so productive of great results that they have drawn attention away from the more classical subjects such as the ligature of great arterial trunks. A second explanation of this lessened interest may be found in the fact, if fact it be, that aneurysm of the large arteries accessible to surgical interference is less common now than formerly. This is distinctly the impression left on my mind from what I have seen in this hospital during the last 25 years and I think it is an impression shared by many surgeons.

The changed conditions under which operative work is now undertaken, as compared with the past, have nowhere had a greater influence than in arterial ligature in continuity. Success depends in very great measure on two factors, the use of a trustworthy ligature, which is absorbed when its work is done, and healing of the wound by first intention. The full influence of the work of Pasteur and Lister is hardly yet known to us so far as it applies to the ligature of main arteries in the treatment of aneurysm. Owing to the infrequency of such operations experience accumulates slowly direct suture. As a safeguard a drainage-tube was brought from the involved area out of a separate opening in the right flank. The parietal incision was sutured in three layers with chromic catgut. The patient made an uninterrupted recovery so far as the abdominal condition was concerned, the bowels were moved without medicine on the third day, she was well enough to be up at the end of a month and was out soon afterwards. The wound healed by first intention and appeared to be going on perfectly but at the end of the fifth week a chromic gut suture worked its way out followed by several others. This gave the patient more concern than any other part of her convalescence, though after this little episode terminated the scar was as strong and sound as could be desired.

On examining the parts removed I found that there was a small diverticulum on the cæcum just below the entrance of the ileum. On laying open the cæcum and colon the hard mass was found on the posterior wall of the latter just above the entrance of the ileum. It was composed of the indurated tissues surrounding a cavity beneath the mucous membrane but it felt very much softer than it did *in situ*. I therefore began to fear I had removed bowel whose only crime was the harbouring of a simple ulcer. The cavity had a narrow mouth, so that it was not very obvious from the inside of the bowel, and its interior was about three-quarters of an inch in diameter and had sloughy walls. It lay in the submucous tissues and may have been lined by mucous membrane but all traces of this had disappeared and no evidence of its presence was found on microscopical examination. I fully expected to find a foreign body as in the somewhat similar cases described by Bland-Sutton[2] but there was none. On microscopical examination the wall of this cavity was found infiltrated with tubercle; a gland in the adjoining mesentery was carefully examined but showed no evidence of tubercle and there were no other ulcers or indurated areas in the parts removed to suggest further microscopical examination. The whole appearance suggested that a diverticulum had become infected with tubercle and at a later stage with sepsis. The presence of the diverticulum at the extremity of the cæcum would support this view, for they are usually multiple, but I did not notice diverticula on the other parts of the colon incidentally exposed during the operation.

It is an interesting fact that there were no signs of tubercle elsewhere and that the patient has very much improved since the operation. A careful consideration of this case leads me to think that the course of events was somewhat as follows. A diverticulum became infected with tubercle and as a consequence became ulcerated. The contents could not be regularly removed by the actions of the bowel and decomposition arose. Thus to the tubercle sepsis was added and the acute symptoms were coincident with the onset of inflammation. The œdema of the retrocolic tissues clearly showed the presence of acute infection, for it is a constant attendant of sepsis in the vicinity. Though, strictly speaking, the ulcer was in the colon and not in the cæcum, it may probably be as accurately described as an example of typhlitis with commencing perityphlitis as many others that have been suffered to bear this nomenclature. If we consider the *septic factor* in this case as the important feature it may be looked upon as an example of a rare condition, since it is certain that typhlitis and its complications are, in the great majority of cases, due to disease originating in the appendix. Still, cases of true perityphlitis not of appendicular origin do occasionally occur and an example from perforation of the cæcum by a pin has come under my notice. From another point of view the case is interesting, for it shows how sometimes the addition of sepsis to tubercle may serve a useful purpose by drawing attention to the disease at a time when the local manifestation at least can be efficiently dealt with, just as a tuberculous ulcer in the appendix may rupture, so bringing on itself the ban of surgical interference.[3] Further, the case is a useful reminder of the need for care in the diagnosis of swellings about the cæcal region. The diagnosis of appendicitis is more often correct than that of any other abdominal disease and this is so much realised that any other suggestion is apt to be treated with but scant courtesy.

Within the last two years I have seen a couple of cases very similar to the one here recorded. In both there was a history suggestive of appendicitis and both were diagnosed as such, but in both a hard mass in the cæcal region turned out to be malignant disease of the bowel. It is not always easy to make the distinction and I have more than once overstepped the mark and diagnosed malignant disease or tubercle of the cæcum when the disease was inflammatory and originated in the appendix. Both malignant disease and tubercle may exactly mimic appendicitis but it should give rise to suspicion when in a middle-aged person mild attacks are associated with the presence of a very definite hard lump; if a well-marked lump is found at the *outset* of an attack; if such a lump gets larger without becoming more tender; if there is evidence of intestinal obstruction, or if there has been much loss of weight. Of course, in any case of a suspicious mass in this neighbourhood an operation for its elucidation and treatment should not be delayed. I have elsewhere drawn attention to the several ways in which malignant bowel growths may simulate appendicitis and they may be briefly summarised as follows.

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3. Primary malignant disease of the appendix may be the cause of the symptoms.

Newcastle-upon-Tyne.

A CASE OF PRIMARY SUPPURATIVE PAROTITIS.

BY J WALTER CARR, M.D. LOND., F.R.C.P. LOND.,
PHYSICIAN TO THE ROYAL FREE HOSPITAL AND TO THE VICTORIA HOSPITAL FOR CHILDREN, CHELSEA.

THE following case appears to be sufficiently exceptional to be worthy of record. The patient was a man, aged 79 years, who had suffered from several attacks of acute articular gout and of gouty eczema affecting the hands. About eight years ago he had double iridectomy performed for glaucoma. During the last year or two his urine had been abundant and of low specific gravity, averaging 1010, so that there was probably some granular change in the kidneys, but no albumin had ever been found. For several months before his last illness he had, for his age, been remarkably well and vigorous, both physically and mentally. During July last he underwent an unusual amount of exertion and excitement in connexion with a Royal visit to his native city, but did not appear in any way the worse for it. Two days after this visit, on July 15th, he consulted his medical man, Dr. T. Mason Johnson of Pendleton, Manchester, on account of a painful swelling of the left side of the face which he had first noticed that morning. This rapidly extended and on the following day the patient was evidently seriously ill. On the evening of the 17th I saw him in consultation with Dr. Johnson and Dr. J. Dixon Mann of Manchester. There was then a large, tense, brawny swelling, exactly limited to the region of the left parotid gland; the skin over it was very œdematous but it was only slightly tender on pressure, much less so than it had been on the previous day, a result, perhaps, of the patient's increasing mental apathy, for he was only semi-conscious, his tongue was dry, his urine contained a good deal of albumin, and his temperature was 101° F. There were, in short, all the indications of marked toxæmia. Next morning (July 18th) Mr. F. A. Southam of Manchester saw the patient with a view to operation, but as no fluctuation could be made out and the general symptoms seemed distinctly better it was decided to postpone making any incision. Glycerine and belladonna were applied to the swelling and strychnine, perchloride of iron, and brandy given internally. The improvement was maintained for the next two days; the mental condition became much clearer, the tongue moister, the albumin disappeared from

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[2] THE LANCET, Oct. 24th, 1903, p. 1148.

[3] For cases see Lockwood, Appendicitis: its Pathology and Surgery, p. 154, and Some Surgical Aspects of Appendicitis, Northumberland and Durham Medical Journal, 1903, by G. Grey Turner.

One ounce of this mixture to be taken three times a day. The following are the cases.

CASE 1.—A man, aged 28 years, had been working four years with mercury, the two latter years making motor meters. About four months ago he was notified as a case of mercurial poisoning; previous to this he had been ill for short periods with general debility and boils. He was advised to give up work a month previous to his notification but did not do so for a fortnight. One morning, on rising, he became sick and giddy. I saw him a few days after and found his speech, forearms, and hands tremulous; he was unable to keep the latter still when extended. His gums were swollen and spongy, receding from the teeth; there was slight salivation; the incisor teeth were loose; there was a blue line along the margin of the teeth, which were carious and dirty. The tongue was tremulous and dirty. There was no anaemia, but constipation and headache; sometimes sleepiness and other times sleeplessness. The appetite was very poor. There was a feeling of sickness and retching on rising. Numbness was felt over the palmar aspect of the thumb and index finger. There was profuse sweating of the hands and pain in the elbow-joint. This man was taken from his work, after which I did not see him for ten weeks. When his condition was nearly unchanged. All stimulants were forbidden; the teeth and gums were ordered to be cleaned with a brush; a mouth wash of alum and chlorate of potash was given. A mixture of sulphate of magnesia and carbonate of magnesia was also ordered. As soon as the bowels acted the man commenced to improve. He was then put on iodide of potassium but did not make any progress under it. The gums still being very sore, I painted them with linimentum iodi twice; the second application made them smart a little but not as much as one would expect. I then put the patient on bromide of potassium, digitalis, and strychnine. He is now practically well, only feeling slightly nervous at times.

CASE 2.—A man, aged about 40 years, who had been working for some years with mercury, came to consult me as he was suffering with abdominal pains, tender and swollen gums, indigestion, anaemia, and tremors in the face, the arms, and the legs. The tremors were so bad that he found it difficult to do his work, being unable to hold his tools steady. The tremors of the face were worse when speaking. The man had been ill for some considerable period, the tremors having been in existence for years. When I saw the patient I thought his case might be fatal. However, in four and a half months he recovered sufficiently to be able to resume employment. The treatment adopted was rest, light diet, and fresh air; five grains of iodide of potassium and five minims of nux vomica were ordered and colocynth and hyoscyamus were given to keep the bowels acting. The patient was kept on this treatment for three weeks; subsequently the iodide of potassium was increased to 10 grains three times a day. For another month he did not make much improvement so bromide of potassium with nux vomica was tried without any effect. I next gave the patient arsenic and iron with the idea of improving his anaemia and so his general condition. This treatment he continued for two months, only varying it occasionally to be treated for such symptoms as indigestion and constipation. Four months after the time when I first saw him the tremors had practically ceased and he was well enough to resume light employment.

I might cite several other cases in which I have found patients not benefited by iodide of potassium or any other special drug. The chief points in mercurial poisoning that I should like to call attention to are as follows: 1. The special liability that unhealthy and dirty men have to be poisoned. 2. That clean, healthy men can work with mercury with little risk. 3. That constipation is quite as frequent as diarrhoea, if not more so. A blue line is always present along the margin of the gums. 4. That swelling of the gums and salivation are the first symptoms to appear in nearly all cases, [illegible] not being very characteristic. 5. That mercury and its salts are just as likely to produce poisoning by volatilising and by inhalation as by other methods. For instance, a man who has had malaria and spends about from two to four hours a week in a shop where mercury is distilled is suffering from salivation and spongy gums although he only shakes up the salts in a bottle without touching them. 6. That there seems to be no specific drug; the symptoms must be treated as they arise.

Ipswich.

A CASE OF TUBERCULOUS ULCERATI OF THE ASCENDING COLON SIMULATING APPENDICITIS.

BY G. GREY TURNER, M.S. DURH., F.R.C.S. En

SURGICAL REGISTRAR, ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

In October last I was asked by Mr. J. F. Tomlinson to operate on a case of appendicular abscess. The patient was an unmarried woman, aged 64 years, who came of a healthy family; four brothers and three sisters were alive and well but her father had died at 70 years of age from "cancer of the bowel" and there was no history of tuberculosis. She had always been of a bilious temperament, often had attacks of vomiting with severe headache and constipation. During the eighteen months preceding her illness she had been feeling "heavy" and "dull" without exhibiting any definite symptom. On Oct. [illegible], at 2 A.M. she was awakened by a severe pain in the right [illegible] of the abdomen and rectum; there was no sickness at the time. After a cup of tea and some brandy the bowels were moved and she felt more comfortable until the evening when the pain returned and was "fearful." Mr. Tomlinson was called in and diagnosed appendicitis; he gave morphia which relieved the pain. With the return of pain she felt very sick but only vomited once after a cup of tea. At the time of first seeing the patient Mr. Tomlinson found a tender lump in the right iliac fossa which was probably not noticed. From this time until the 13th, when I saw her, she continued to have pain in the right iliac fossa but there were no other symptoms and the pain gradually diminished though the lump did not. The patient looked worn and run down; the pulse and temperature were normal, though the latter had been as high as 102° F. In the right iliac fossa was a very hard, tender mass about the size of a [illegible] place. Two points struck me at the time—that Mr. Tomlinson had noticed the lump at the beginning of the attack and that it was unusually hard. Nevertheless I thought that we should find an infected appendix surrounded by omentum.

Arrangements had been made for an operation at the patient's own home and it was proceeded with at once. I made an oblique incision four inches long parallel to the outer part of Poupart's ligament and the iliac crest as in a case of appendicular abscess.[1] The appendix was normal and the omentum was not down in the neighbourhood. There was a hard lump in the inner and posterior wall of the caecum (as I then thought, but an examination of the part removed showed it to be above the ileo-caecal junction and therefore in the ascending colon); the subperitoneal tissue in the sulcus on the outer side of the colon were very [illegible]. The mass appeared limited to the bowel, for the latter could be easily rolled from side to side. There were no enlarged glands and no deposits on the surface of the peritoneum. The ileum appeared normal and there was no evidence of it [illegible] the lower ileum. I was in doubt as to the nature of the mass. The sudden onset of the illness and the oedema of the tissues around suggested an inflammatory origin but the hardness of the lump made me very suspicious of new growth. I was further biased in favour of the latter supposition for I had recently seen two similar cases both of which turned out to be cancer. I was in doubt as to the best course to follow. If the mass was purely inflammatory it would be sufficient to leave it with drainage and a gauze pack, treating the case as one would an infected area following appendicitis. If it was tuberculous then a lateral anastomosis would relieve the patient meanwhile and give her time to [illegible]. If it turned out to be malignant the most favourable opportunity for removing the disease would be lost. I thought that the mass was most likely a new growth and that the interests of the patient would be best served by its removal and this I decided to do.

There was no special difficulty in the operation and I had the assistance of a good nurse. I resected the lower end of the ileum, the caecum, and the lower [illegible] of the ascending colon, together with the corresponding portion of the mesentery, which [illegible]. I closed the bowel ends and made a lateral anastomosis [illegible] direct suture. As a safeguard a drainage-tube was brought from the involved area out of a separate opening in the right flank. The parietal incision was sutured in three layers with chromic catgut. The patient made an uninterrupted recovery so far as the abdominal condition was concerned, the bowels were moved without medicine on the third day, she was well enough to be up at the end of a month and was out soon afterwards. The wound healed by first intention and appeared to be going on perfectly but at the end of the fifth week a chromic gut suture worked its way out followed by several others. This gave the patient more concern than any other part of her convalescence, though after this little episode terminated the scar was as strong and sound as could be desired.

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[1] See paper by [illegible] Morison [illegible] Vermiform Appendix, THE LANCET, [illegible]

On examining the parts removed I found that there was a small diverticulum on the cæcum just below the entrance of the ileum. On laying open the cæcum and colon the hard mass was found on the posterior wall of the latter just above the entrance of the ileum. It was composed of the indurated tissues surrounding a cavity beneath the mucous membrane but it felt very much softer than it did *in situ*. I therefore began to fear I had removed bowel whose only crime was the harbouring of a simple ulcer. The cavity had a narrow mouth, so that it was not very obvious from the inside of the bowel, and its interior was about three quarters of an inch in diameter and had sloughy walls. It lay in the submucous tissues and may have been lined by mucous membrane but all traces of this had disappeared and no evidence of its presence was found on microscopical examination. I fully expected to find a foreign body as in the somewhat similar cases described by Bland-Sutton[2] but there was none. On microscopical examination the wall of this cavity was found infiltrated with tubercle; a gland in the adjoining mesentery was carefully examined but showed no evidence of tubercle and there were no other ulcers or indurated areas in the parts removed to suggest further microscopical examination. The whole appearance suggested that a diverticulum had become infected with tubercle and at a later stage with sepsis. The presence of the diverticulum at the extremity of the cæcum would support this view, for they are usually multiple, but I did not notice diverticula on the other parts of the colon incidentally exposed during the operation.

It is an interesting fact that there were no signs of tubercle elsewhere and that the patient has very much improved since the operation. A careful consideration of this case leads me to think that the course of events was somewhat as follows. A diverticulum became infected with tubercle and as a consequence became ulcerated. The contents could not be regularly removed by the actions of the bowel and decomposition arose. Thus to the tubercle sepsis was added and the acute symptoms were coincident with the onset of inflammation. The œdema of the retrocolic tissues clearly showed the presence of acute infection, for it is a constant attendant of sepsis in the vicinity. Though, strictly speaking, the ulcer was in the colon and not in the cæcum, it may probably be as accurately described as an example of typhlitis with commencing perityphlitis as many others that have been suffered to bear this nomenclature. If we consider the *septic factor* in this case as the important feature it may be looked upon as an example of a rare condition, since it is certain that typhlitis and its complications are, in the great majority of cases, due to disease originating in the appendix. Still, cases of true perityphlitis not of appendicular origin do occasionally occur and an example from perforation of the cæcum by a pin has come under my notice. From another point of view the case is interesting, for it shows how sometimes the addition of sepsis to tubercle may serve a useful purpose by drawing attention to the disease at a time when the local manifestation at least can be efficiently dealt with, just as a tuberculous ulcer in the appendix may rupture, so bringing on itself the ban of surgical interference.[3] Further, the case is a useful reminder of the need for care in the diagnosis of swellings about the cæcal region. The diagnosis of appendicitis is more often correct than that of any other abdominal disease and this is so much realised that any other suggestion is apt to be treated with but scant courtesy.

Within the last two years I have seen a couple of cases very similar to the one here recorded. In both there was a history suggestive of appendicitis and both were diagnosed as such, but in both a hard mass in the cæcal region turned out to be malignant disease of the bowel. It is not always easy to make the distinction and I have more than once overstepped the mark and diagnosed malignant disease or tubercle of the cæcum when the disease was inflammatory and originated in the appendix. Both malignant disease and tubercle may exactly mimic appendicitis but it should give rise to suspicion when in a middle-aged person mild attacks are associated with the presence of a very definite hard lump, if a well-marked lump is found at the *outset* of an attack, if such a lump gets larger without becoming more tender; if there is evidence of intestinal obstruction, or if there has been much loss of weight. Of course, in any case of a suspicious mass in this neighbourhood an operation for its elucidation and treatment should not be delayed. I have elsewhere drawn attention to the several ways in which malignant bowel growths may simulate appendicitis and they may be briefly summarised as follows.

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[2] THE LANCET, Oct. 24th, 1903, p. 1143.

[3] For cases see Lockwood, Appendicitis: its Pathology and Surgery, p. 1[illegible], and Some Surgical Aspects of Appendicitis, Northumberland and Durham Medical Journal, 190[illegible], by G. Grey Turner.

In the entire absence of any evidence of primary disease elsewhere the case must be regarded as one of acute primary parotitis, analogous, presumably, to acute pancreatitis, with which gland the parotids have anatomically so many points in common. In both, such an acute primary inflammation, especially leading to suppuration, is very rare, particularly so in the case of the parotids. A secondary parotitis, suppurative or non-suppurative, is met with fairly frequently, although its exact causation has given rise to considerable controversy. It occurs after certain operations, usually in connexion with the abdomen or pelvis, and in association with some of the acute specific fevers and with various pyæmic and septic conditions, especially after parturition; but judging from the very scant references in medical literature and also from the experience of the four medical men who saw the patient, the primary disease must be altogether exceptional. At first the possibility of mumps was considered, but the patient's age,[1] the absolute limitation of the disease to one gland, the brawny character of the swelling with marked œdema of the skin over it, and the severity of the constitutional symptoms were sufficient taken altogether to exclude this disease. A gouty form of parotitis has been described by Dr. Debout d'Estrées of Contrexéville,[2] but would seem to be excessively rare and probably never leads to suppuration. The disease in this case was almost certainly microbial in origin and the question arises how the gland became infected; presumably from the mouth, *viâ* Stenson's duct. There was, however, no obvious cause of sepsis in the mouth; the patient had had all his own teeth extracted many years before, not even a single stump being left and wore a complete set of artificial teeth, which appear to have been kept perfectly clean. On examination, however, of the inside of the mouth a rounded swelling of about the size of a small pea was felt close to the orifice of Stenson's duct, if not actually over it; it did not feel like a calculus and was most likely a cyst. Very probably it hindered the escape of saliva and so led to a condition which facilitated the ascent of microbes, in the way so well described by Mr. C. J. Bond in his address on Ascending Currents in Mucous Canals and Gland Ducts and their Influence on Infection at the last meeting of the British Medical Association at Leicester. The intensely virulent character of the process was probably due largely to its occurrence in an old man with damaged kidneys and consequent greatly diminished resistive power to microbial infection.

A case of primary parotitis recently recorded[3] was shown to be due probably to a pneumococcal infection, but the patient was only 55 years of age, had a distinctly septic mouth, and the inflammation quickly subsided without goi on to suppuration.

One may perhaps regret that in my case an incision in the gland was not made sooner, but on the whole I am di posed to think that this would not not have averted the fat issue, as even a few hours before death there was no defini abscess cavity to drain and consequently it does not see likely that the passage of toxic products into the bloo which led to the fatal toxæmia would have been materiall prevented.

Cavendish-place, W.

A CASE OF CONGENITAL HYPERTROPHI STENOSIS OF THE PYLORUS: TREATMENT BY GASTRIC LAVAGE WITH COMPLETE RECOVERY.

BY A. J. BLAXLAND, M.B. LOND., M.R.C.S. ENG., L.R C.P. LOND.,

HOUSE PHYSICIAN AT THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET.

CONSIDERING the diverse opinions held with regard to th treatment of hypertrophic stenosis of the pylorus in infan it may be of service to record in some detail a case in whic complete recovery followed careful dieting and lavage of th stomach.

In an exhaustive article on this subject published in TH LANCET of March 11th Dr. G. F. Still strongly advocates i all cases a trial of stomach washing before resorting to suc radical treatment as dilatation of the pylorus, pyloroplasty or gastro-enterostomy, which must always be a very serio undertaking in an infant, especially in one who has becom marasmic from inability to absorb his food. If medica treatment fails and operation becomes necessary, lavage combined perhaps with nasal feeding will, as Dr. Still urges in his article, in nearly every case, however desperate, have produced some temporary improvement and so increase the chance of a successful operation.

It does not at present appear possible to determine from the amount of wasting or vomiting, or from the size or hardness of the pyloric tumour, whether a given case will respond to medical treatment or not until the effect of such treatment is tried. It is therefore probable that the degree of spasm of the pylorus (if such it be) varies very greatly in different subjects. It is possible, in the case that I am now recording, since improvement so quickly followed on treatment, that the morbid condition was not very extensive, but the physical signs would lead one to believe otherwise.

The patient, a boy, aged four months, was admitted into the hospital on Feb. 17th, 1905, under the care of Dr. Garrod, for vomiting, wasting, and constipation. The child at birth, following a nine months' pregnancy and a normal labour, was in apparently *perfect health* and weighed ten pounds. He was not put to the breast but was given diluted cow's milk and went on quite well for a fortnight, at the end of which time he began to vomit and to lose weight. The vomiting occurred at moderately long intervals and was of a very forcible character. Large quantities—two or three feeds—were vomited at a time. A medical man was called in and various foods were tried—Nestlé's [illegible] Horlick's malted milk, Mellin's food, and "humanised [illegible] —all without success, and he was taken to the hospital [illegible] age of four months, his weight then being eight pou[illegible] The child was the last of eight, two of whom died in inf[illegible] from meningitis and the others were quite healthy [illegible] strong.

On admission the little patient was found to be conside[illegible]ably wasted, the skin was shrunken, and the expression w[illegible] anxious. The tongue was clean. The abdomen, a *little* shrunken in, showed well-marked peristalsis in the area *of* the stomach which could be brought out by flicking *the* abdominal wall. This peristalsis passed in slow waves *from* left to right and divided the stomach into two *or three portions*, each of about the size of a small *Tangerine* orange. On gentle but deep palpation a hard, *elongated* lump of about half the size of the terminal *phalanx* of the little finger could be felt midway *between* the umbilicus and the right costal margin. *This lump*, not always palpable, could often be felt *to form under* the finger and it was most distinct when the gastric peristalsis was most obvious. There was no doubt that the lump was a hypertrophied pylorus. The rest of the body was apparently normal, no malformations being found. The vomiting occurred about once a day for the first three or four days after admission and was very forcible, the stomach contents being "shot" out. The vomit was very large and markedly acid in reaction. The motions were small but otherwise natural.

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[1] An undoubted case of mumps in a woman, 75 years of age, is recorded (Brit. Med. Jour., vol. i., 1895, p. 1543), but the case is perhaps unique.

[2] Transactions of the Royal Medical and Chirurgical Society, 1887, p. 317.

[3] THE LANCET, August 12th, 1905, p. 434.

The effect of treatment, which consisted entirely in careful dieting and gastric lavage, was immediately and continuously successful. The feeding consisted at first (Feb. 16th) entirely of "humanised" milk, three ounces being given every two hours, and this was increased on the 28th to three and a half ounces and on March 9th to four ounces. For the first four days one or two big vomits occurred daily and on Feb 20th the stomach was washed out and this was continued twice daily. The immediate effect of this was that there was no vomiting at all for 11 days and after that only two vomits a week on an average. After April 1st the stomach was washed out only once a day and the vomiting increased, and so peptonised milk was given, four ounces with ten drops of cream, alternating with the "humanised" milk, and this had the desired effect of checking the vomiting. After May 20th the stomach was washed out but twice a week and the child was put back on "humanised" milk only. On June 20th three ounces of cow's milk with one ounce of barley water and ten drops of cream were substituted, the feeds being given every two hours, and on the 30th the child left the hospital apparently quite well.

The effect of the treatment on the weight and general condition of the child was as marked as that on the frequency of the vomiting and with the improvement the abnormal physical signs in the abdomen gradually disappeared. The pylorus became increasingly difficult to palpate, partly due to the increased thickness of the abdominal wall with fat, and it was not felt at all after April 20th. The peristalsis also became less marked and for the last fortnight before leaving the hospital was practically imperceptible.

The weight of the child, being the most reliable guide to his improved condition, is tabulated below :—

	Pounds.		Pounds.
On admission (Feb. 16th) ...	8	End of two months	10½
End of first week	8½	" three "	11¼
" second week	8¾	" four "	12
" fourth week	9½	On leaving (June 30th) ...	12½

On leaving the hospital the child was fed on cow's milk diluted and when last seen (July 27th) he was thriving and weighed 13½ pounds.

Balham, S.W.

AN ACUTE ILLNESS FOLLOWING INOCULATION WITH ANTITYPHOID VACCINE.

BY W. J. LINDSAY, M.A., M.D., D.P.H. CANTAB.,

SOMETIME CIVIL SURGEON, SOUTH AFRICAN FIELD FORCE.

THE importance of the question of antityphoid inoculation, together with the fact that no case of severe illness following inoculation has, so far as I can ascertain, been published and the general acceptation of the statement that the operation of inoculation "can do no harm except for a certain amount of feverishness for a few days and local stiffness, neither of an important character,"[1] induces me to make known the following case. For many of the clinical details given I am indebted to the kindness of Dr. J. A. Black.

A civil surgeon, aged 29 years, attached to the Royal Army Medical Corps, had never suffered from any severe illness. In February, 1900, he proceeded to South Africa and during the voyage out he was inoculated, once only, with antityphoid vaccine. Except for slight local soreness and stiffness there was no constitutional disturbance; he was able to perform his medical duties on board ship on the succeeding days without inconvenience. After three months' service in Natal, during which time the general health had been unimpaired, he was ordered home in charge of invalids. Eight days' leave was granted in England, most of which was spent in London, and none of it in any place where there was reason to suppose that typhoid fever was prevalent or likely to be acquired. In August, 1900, the patient again sailed for South Africa. On August 27th, about 5 P.M., he was inoculated with antityphoid vaccine for the second time. The injection was made, with antiseptic precautions, into the subcutaneous tissue of the right side of the abdomen; the dose given was slightly less than the full one suggested for the particular vaccine used. Up to the time of inoculation the patient was, and had been for many months, in robust health. During the evening following inoculation no ill effects were felt but on retiring about 11 P.M. there was some slight headache. On the morning of the 28th the headache was more marked, the tongue was slightly furred, and there was an unpleasant taste in the mouth. During the day the headache continued. There was a slight feeling of chilliness but no rigor and the patient felt a disinclination for exertion. On the two following days the symptoms continued with increasing severity, the headache being chiefly complained of. There was loss of energy and appetite, with restless nights, very slight pain, tenderness, and hyperæmia at the site of inoculation. During this time the patient, though not in bed, did not engage in any very active exercise, it being thought that the reaction would exhaust itself in two or three days, as it usually does.

On August 30th (the third day after inoculation) the headache was very severe and was accompanied by a sensation of chilliness, a marked feeling of illness, and almost complete loss of appetite. Very little sleep had been obtained the previous night. During the afternoon these symptoms became so severe that the patient retired about 3 o'clock and was seen by a civil surgeon. It was found that a marked blush, tenderness, and slight swelling were present at the site of inoculation. There were no signs of suppuration and no enlargement of the inguinal glands. The tongue was dry and covered with a dirty white fur. The pulse was hard and quick. The headache was intense, frontal, and of a throbbing character. The temperature, now taken for the first time, was 103·4° F. The patient was ordered to bed and put on milk diet. On the 31st (the fourth day after inoculation) there had been a very restless night. In consultation, a very careful examination of the patient was made but nothing throwing any light on the condition was found. The lungs and the heart were normal. There was slight hyperæmia at and around the site of inoculation but no tenderness or signs of suppuration. Nothing abnormal could be found elsewhere in the abdomen. The spleen was not enlarged, nor was there any tumidity. There was no rash then or subsequently; no cough, vomiting, or arthritic pains. The morning temperature was 102·2° and the evening 104°. On the following day the condition remained practically unchanged.

On Sept. 2nd, as the symptoms continued, the headache and insomnia being much complained of, the patient was again seen in consultation. He was obviously ill, being very pale, languid, and having great disinclination for food. The tongue was dry and thickly covered with brown fur. The pulse was weak and rapid; no enlargement of the spleen or of any of the lymphatic glands was found. The temperature was 101·2° in the morning and 103° in the evening. No abnormal physical signs were found in the lungs, the heart, or the abdomen. Tenderness and hyperæmia at the site of inoculation had disappeared. Constipation was marked. Stimulants were ordered. On the 4th he appeared somewhat better; the temperature was rather lower—morning 100°, evening 102·2°; the headache, though still present, was less severe. The insomnia was still troublesome. From this date the symptoms began, very slowly and gradually, to subside. On the 5th the headache had practically disappeared. On the 6th the evening temperature subsided to 99°, after which date, except on one occasion, when it rose to 100·2°—the day following transference from the ship to hospital—this temperature was not exceeded and it became subnormal on the 10th, the fourteenth day of disease. On arrival at Cape Town on Sept. 7th, as it was thought inadvisable, weakness and prostration being very marked, to remove the patient to No. 1. General Hospital, Wynberg (which would involve a train journey of 30 minutes), he was transferred by ambulance to the New Somerset Hospital, Cape Town. The convalescence was uninterrupted except for a mild attack of urticaria at the end of the second week and presented no features of interest. Three weeks after the temperature became normal the patient was able to perform light duty.

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[1] Brit. Med. Jour., 1904, vol. ii., p. 872

The points of clinical interest in the case are the sudden onset of an acute illness following inoculation, for which no other cause could be found; the insignificance of the local symptoms at the site of inoculation; and the almost total absence of any physical signs which would account for the acute condition and the intensity of the headache. It is noteworthy that for many months up to the time of inoculation the patient was in particularly robust health and that he had been inoculated five months previously with very little disturbance, whether local or general. That the illness following inoculation might be merely a coincidence is, I think, negatived by the preceding good health, and also that the earliest symptom, the headache, showed itself when the early symptoms of reaction after inoculation usually appear. The patient was seen by several medical men and much discussion ensued as to whether it was a case of true typhoid infection, an atypical case of typhoid fever. or whether the condition was a toxæmia following inoculation. This latter was the prevailing opinion. The possibility of malaria was also discussed but was considered improbable, as the patient had never shown any indication of it nor had he resided in a malarial region. Throughout the illness resembled a moderately severe attack of typhoid fever, while the typical symptoms—bronchitis, rash, splenic enlargement, tumidity and tenderness of the abdomen, and diarrhœa—were absent; the headache, insomnia, restlessness, marked prostration, the absence of physical signs of any demonstrable lesion, and the range and type of the temperature, all pointed to the possibility of typhoid fever. Moreover, the convalescence approximated to that following a mild attack of typhoid fever. Although there were no complications except the urticarial attack the feeling of weakness was prolonged and the normal health was not regained until six or eight weeks later. It is a reasonable conclusion, therefore, that the case was one of toxin poisoning following antityphoid inoculation. The course of the temperature was as follows: August 27th, injection given at 5 P.M.; 30th, temperature, 3 P.M., 103·4° F.; 31st, morning 102·2°, evening 104°; Sept. 1st, morning 102·2°, evening 104°; 2nd, morning 101·2°, evening 103°; 4th, morning 100°, evening 102·2°; 6th, the evening temperature this day was 99°, and except for a rise on the 8th to 100 2°, when the patient was moved from the ship to the hospital ashore, the temperature never afterwards rose above 99°.

That a severe reaction does occasionally occur after inoculation is well known. In a series of 511 cases[2] the reaction—severe or slight—commenced on the day of inoculation, the severity of the symptoms being greatest at first and gradually subsiding to normal on the third, or at latest fourth day. Further, it is held[3] that the severity of the local symptoms is in inverse ratio to the severity of the constitutional symptoms and that second inoculations are usually followed by local symptoms only. The case under consideration appears to be in direct contrast to these conclusions. Wright[4] maintains that when primary inoculations are made with small doses the local and constitutional symptoms are usually absent. I am not in a position to discuss this point. From my own experience, derived from p rforming inoculations on troops proceeding to South Africa, I have thought that the factor of age had an influence on the severity of the reaction. It seemed to me that young patients were much more liable to severe reaction than older men. The cases of severe reaction generally occurred amongst young soldiers, officers and men of, speaking roughly, 25 years of age and under, while of the few older men of from 35 to 50 years that I inoculated none complained of any discomfort locally or of constitutional disturbance.

The case here reported seems to me to have important bearing on prognosis. Medical officers were constantly asked by officers on board (the men either refused the operation or submitted to it without inquiry) two questions: (*a*) Does inoculation prevent typhoid fever? and (*b*) Does inoculation cause illness at the time of operation or later? To (*a*) one could only reply that the protective influence was doubtful but probably existed and that inoculation was the only prophylactic treatment we could then administer; to (*b*) that, with the possible exception of two or three days' discomfort, there was no risk of illness, immediate or remote. Both replies, I now think, were incorrect. Cases of severe reaction lasting three or four days are not uncommon and I have met with some where the patients declared that they did not feel perfectly "fit" for at least ten days afterwards. These, together with the case detailed above, have convinced me that however harmless inoculation may appear to be in many cases it is not an operation to be lightly undertaken. Of the prophylactic efficiency of the procedure I am sceptical. From the large number of cases of typhoid fever which I saw amongst inoculated men in three general hospitals in Natal and amongst new drafts of young soldiers joining their units in the field within three to six weeks of their arrival in South Africa I can only say that I am not convinced of the power of inoculation to mitigate the severity of an attack or to influence the liability to relapse and death. Many civil surgeons with whom I have discussed these questions held similar views. An important point is Wright's suggestion[5] that when inoculation is followed by well-marked constitutional symptoms there follows a negative phase of decreased bactericidal power of the blood with increased susceptibility to typhoid infection; that this increased susceptibility lasts about three weeks and much longer when the symptoms of reaction have been very severe. Now a large percentage of the troops were inoculated on board transports ten to 14 days out from Cape Town. Hence on disembarkation a considerable number of men were exposed to virulent infection at a time when their powers of resistance were very considerably lowered. Hence, if Wright's view is correct, we were unwittingly undertaking a very grave responsibility. On the other hand, Washbourn[6] maintained that the bactericidal power of the blood was not a measure of the immunity of the individual. From the large number of inoculated men that one saw suffering from typhoid fever within six weeks of their arrival in South Africa it would seem that Wright's view of the existence of such a negative phase was possibly correct.

Bromley, Kent.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

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A CASE OF WOUNDING BY AN UNUSUAL PROJECTILE.

By JAMES S. NICOLSON, M.B., CH.B. GLASG.,

HOUSE SURGEON, ROTHERHAM HOSPITAL, YORKSHIRE.

THE patient was one of two men who were injured in a pit accident. The circumstances connected with the accident were as follows. A hole 18 inches long was bored in the roof of a coal seam for blasting purposes. Into this hole was placed a "kynite" cartridge, which, after "stemming," was intended to be fired by an electric battery. The two men were engaged in "stemming" this hole when, probably from the cartridge becoming displaced, the explosion occurred prematurely. The man actually engaged in "stemming" was killed outright, his head and right hand being blown off; the other, who at the time of the explosion was standing a few feet from his unfortunate companion, was knocked down and immediately brought to the hospital in the ambulance wagon belonging to the pit. He was supposed to be suffering from compound fracture of the left thigh. On casual examination in the accident room he was found to have a ragged wound on the anterior surface of the left thigh such as might have been produced by protrusion of the lower end of the upper fragment of the femur, and this view was rendered more probable when the patient stated that after his injury he had attempted to walk but had to lie down on account of pain. Although there appeared to be little or no shortening of the limb and no undue mobility, it was concluded, when on further examination a loose fragment of bone was seen in the depth of the wound, that the diagnosis of compound fracture was confirmed. The patient was admitted and the limb shaved and cleansed in the usual way. The wound was explored and found to extend in an inward and upward direction. The piece of bone already seen was found to be loose and connected merely by a tag of fibrous tissue; this was severed and the piece was removed. It measured one and a quarter inches by a quarter of an inch by one eighth of an inch and had one smooth surface. The curvature of this surface, however, did not correspond to that of the shaft of an adult femur. The wound was further explored and a mass detected in its upper part; this was removed and found to be a finger represented by the two terminal phalanges with about three inches of the flexor tendons attached. The first piece of bone was now recognised to be part of the proximal phalanx of this finger. The wound, which was fully five inches in depth, was douched out with solution of carbolic acid of strength 1 in 40 and lightly plugged with iodoform gauze. It healed without suppuration.

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[2] Culliman, quoted by Wright, THE LANCET, Oct. 26th, 1901, p. 1107.

[3] Wright, Practitioner, vol. lxxii., No. 3, p. 358.

[4] THE LANCET, Sept. 14th, 1901, p. 715.

[5] Loc. cit.

[6] Transactions of the Medical Society of London, vol. xxv., p. 21.

The patient was not otherwise seriously injured. On admission he suffered from shock but was conscious and described how at the time of the accident he had been struck by something and knocked down. The whole of the anterior surface of the body was peppered as if by small shot. These marks on the body corresponded to small holes in the vest and trousers he was wearing at the time, and corresponding to the wound in the thigh there was an angular flap in the trousers where the projectile had gone through without actual loss of substance to the garment. The patient was aware that his comrade had been killed but was not aware that he himself had been shot in the thigh by the dead man's finger.

I am indebted to Mr. F. C. Collinson, honorary surgeon to the hospital, for permission to publish this case.

Rotherham.

A CASE OF LIPOMA IN THE RIGHT VENTRICLE OF THE HEART.

BY R. ADAMS BREWIS, M.D. EDIN.

THE following case of fatty tumour growing from the interventricular septum of the heart seems worth publishing as I have been unable to find a similar case occurring in the human subject in medical literature. Paget[1] mentions "a singular case of fatty growth connected with the heart of a sheep." In describing the specimen he states: "The right ventricle is nearly filled with a lobulated mass of fat, distending it, and pressing back the tricuspid valve. The left auricle and ventricle are similarly nearly filled with fatty growths and fat is accumulated on the exterior of the heart, adding altogether about 25 ounces to its weight. The textures of the heart itself appear healthy."

The patient in the case now to be described was a girl, aged seven months. She seemed well until 2 P.M. on June 16th, 1905, when she vomited some "yellow bile" and refused the breast. After 9 P.M. she seemed worse and began "turning up her eyes." The parents, fearing a convulsion, sent for me, but on my arrival at 10.10 P.M. I found life extinct. The child was pale. The mother said that there had been no cyanosis. Two months previously the child suffered from a severe attack of whooping-cough. The coroner, Mr. E. M. Grace, ordered a post-mortem examination, which was made 41 hours after death. The body was well nourished, hypostatic congestion was somewhat marked, the abdominal organs were in the normal position, and there was no peritonitis. The external surface of the stomach was healthy; it contained four fluid drachms of semi-digested milk; its mucous membrane seemed congested and was of a slate-grey colour. The intestines, liver, spleen, and pancreas were normal. The left kidney was normal. The right kidney was slightly enlarged; the capsule stripped off easily; the surface appeared normal; on section the cortex was seen to be slightly swollen; the surface was mottled pink and yellow, and the Malpighian bodies were prominent. The pleura was normal. Except that their anterior borders were emphysematous the lungs were healthy. The pericardium was normal and contained no fluid. The heart was normal in position: the ventricles were contracted; the left auricle was collapsed but the right auricle and the veins leading to it were distended. There was a normal quantity of fat on the surface of the heart. On section the heart substance was found to be healthy. The left ventricle and left auricle were empty. On opening the right ventricle a fatty tumour was found growing from about the centre of the interventricular septum and passing upwards through the auriculo-ventricular opening which it completely blocked. The right auricle was distended with blood. All the valves of the heart were healthy. On careful examination no other fat was found in the interior of the heart. The veins of the brain were much distended; the membranes and brain substance were healthy; the cerebral ventricles were empty. The tumour in the heart was pyriform in shape, two inches in length, and weighed in the fresh state nine and a half grains.

I regret that I was unable to obtain the heart with the tumour *in situ*.

Dursley.

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

> Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

BOLINGBROKE HOSPITAL, WANDSWORTH COMMON, S.W.

A CASE OF ENTERIC INTUSSUSCEPTION IN AN ADULT; RESECTION; RECOVERY.

FOR the notes of the case we are indebted to Mr. Gerald S. Hughes, medical superintendent, who performed the successful operation.

The patient, a man, aged 23 years, was admitted into the Bolingbroke Hospital on April 23rd, 1905, when the following history was obtained. The patient had always been healthy. Four years previously he had had enteric fever. A year ago he had to take to his bed for a few days on account of pain in the right side of his abdomen, but the attack was relieved by purgative medicines. On April 21st (two days before admission) the patient woke in the morning with violent pain in his abdomen. He went to work, however, but after a few hours the pain became so severe that he had to return home and take to his bed. Vomiting occurred several times that day and continued at intervals till his admission to the hospital. The vomit was greenish and offensive but not fæcal in character. On the 22nd (the day after he had been taken ill) he walked two miles to the station. This caused him very great pain which was continuous and "drawing" in character. His bowels were opened slightly on the morning of the 22nd and on this occasion there was a little blood in the motion.

On admission the patient was in a condition of collapse. His pulse was scarcely perceptible at the wrist and was 100. The temperature was 98° F. His expression was worried and anxious. The abdomen was flat, rigid, and did not move on respiration. There was tenderness on palpation all over the abdomen and especially near the umbilicus, where the pain was most severe. No tumour could be detected by external palpation, but per rectum a soft, tender swelling was felt on the right side of the pelvis. A quarter of a grain of morphine was administered to combat the shock and a laparotomy was performed without delay by Mr. G. S. Hughes.

An incision four inches long was made just to the right of the middle line below the umbilicus. On opening the peritoneal cavity a quantity of clear fluid escaped. The presenting intestines were injected and in some places plastic lymph was adherent to the gut. The appendix was examined and found to be healthy. On examining the pelvis a mass was discovered lying to the right side and this, on being drawn up, was found to be an intussusception of the small intestine. The intussusception was some six inches in length and was situated about 18 inches from the ileo-cæcal valve. The outer layer of bowel was dark blue in colour and the peritoneum was tightly stretched over the tumour. An attempt was made to reduce the invagination by continuous pressure, but this being of no avail it was decided to perform an enterectomy. The gut on the two sides of the tumour was held firmly by an assistant and the bowel was divided on either side. A V-shaped portion of the mesentery was removed and the two ends of the bowel were united over a bone bobbin by a double row of sutures and the rent in the mesentery was stitched up. Two pints of saline solution were left in the abdominal cavity and as there appeared some commencing peritonitis a large tube was left leading down into the recto-vesical pouch. During the operation a pint of saline solution was administered subcutaneously as the patient suffered from considerable shock.

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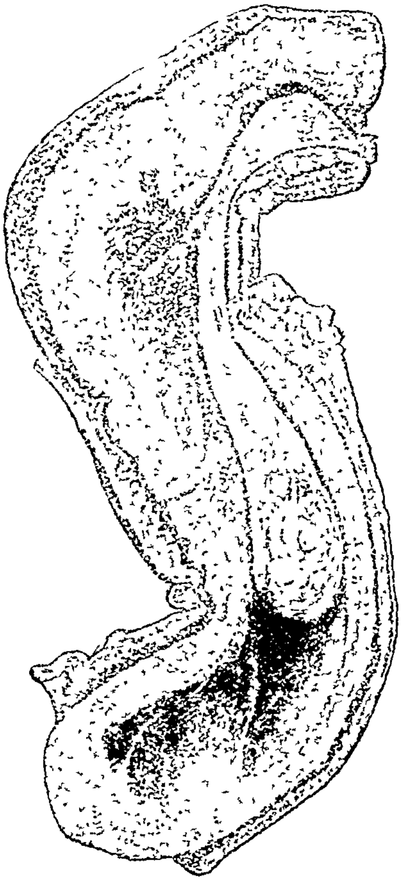
[1] Paget: "Lectures on Surgical Pathology," 1870, third edition, p. 447.



Section of the portion of intussuscepted bowel removed.

For two days after the operation there was profound collapse. Normal saline solution was administered every six hours subcutaneously and the patient was given two ounces of hot coffee every hour by the rectum. He also had injections of morphine. On the third day after the operation the patient had an attack of diarrhœa, his bowels being opened six times. Three half-grain pills of opium were given and the diarrhœa ceased. The following day, when the wound was dressed for the second time, some slight fæcal discharge was found on the dressing. This discharge continued for several days, after which the wound closed and the patient made an uninterrupted recovery.

On examining the specimen after it was removed it was found that the cause of the invagination was a polypus attached to the wall of the gut. The specimen showed that the obstruction, as is usually the case in intussusception, was caused not only by the congestion of the coats of the bowel but also by the intussusceptum being so curved by the action of the mesentery as to narrow the lumen of the inner cylinder and also to oppose the orifice to the wall of the intussuscipiens.

Remarks by Mr. HUGHES.—The above example of intussusception in a patient, aged 23 years, seems worthy to be placed on record both on account of the comparative rarity of such cases and because of the success attending the resection of the 18 inches of small intestine which were involved.

The interest of the case lies chiefly in the fact that the patient recovered after the resection of the bowel. When Braun published his statistics in 1885 he could only find a single case where recovery had followed resection of the intestine for the relief of intussusception. Rydygier, in his addendum to Braun's list published ten years later, was able to collect the records of 25 cases between the years 1885 and 1895 in which recovery had been reported after the intestine had been resected or an anastomosis had been made between two pieces of bowel for the cure of intussusception. Mr. D'Arcy Power, in his Hunterian lectures, was able to add five more cases; two of these occurred in America, where the operation was done for the relief of chronic intussusception in women, and three were done in England for acute gangrenous intussusception in children.

The *ileo-ileac* variety of intussusception is not unusual in adults where statistics show that it amounts to 29·5 per cent. of the whole number, the ileo-cæcal being 34·5 per cent, and the colic 27 per cent. The cause, too, in the present case is obvious and common—viz., a polypus with a long stalk—and, as is usual in such cases, the polypus does not occupy the apex of the intussusceptum. Intussusception is due to the swallowing of one piece of intestine by a neighbouring portion, the part swallowed being usually constricted owing to local or other causes producing a powerful contraction of the circular layer of muscle. An intussusception, therefore, is generally spasmodic in origin.

In children an intussusception is generally sudden in its onset and no definite cause can be found; though a polypus, ulcer, or other gross lesion is sometimes present to account for it. In adults, on the other hand, the cause is generally obvious—a stricture, cancerous or otherwise, when it occurs in the large intestine or a polypus or new growth when it is found in the small intestine.

I am indebted to Mr. D'Arcy Power for permission to publish the case.

GENERAL INFIRMARY, LEEDS.

A CASE OF INTUSSUSCEPTION APPARENTLY CAUSED BY A WORM.

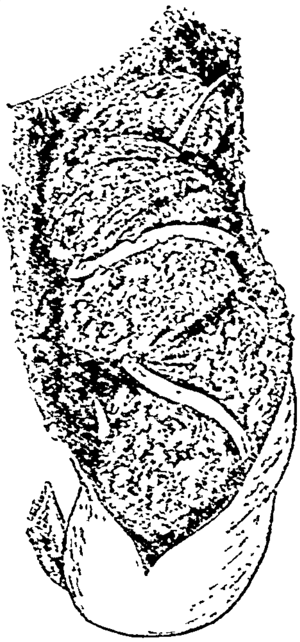
(Under the care of Mr. W. H. BROWN.)

FOR the notes of the case we are indebted to Mr. J. O'Connel, acting house surgeon.

The patient (aged three years) was admitted on June 9th last with symptoms of intestinal obstruction. The vomiting had begun four days before admission and during that period the bowels had not been moved, though the patient had passed blood per rectum. A tumour could be felt in the lower region of the abdomen in the middle line but no tumour could be felt through the rectum.

The patient being anæsthetised with ether, an incision was made in the middle line and the tumour was found to be an enteric intussusception. Reduction was tried but the peritoneal coat of the intestine ruptured several times in the attempt, so enterectomy was performed. All bleeding from the mesentery was stopped. Paul's tubes were tied into each end of the gut and the abdominal wound was then partially closed. On June 21st ether was again given. The two ends of the small intestine were closed and the gut was carefully separated from its surroundings and freed for two or three inches. The gut was then clamped, the ends were removed, and the two cut surfaces were united by silk sutures arranged in two layers, the inner involving all the layers of the gut, the outer being a peritoneal suture. The united gut was returned to the abdomen and a gauze drain was inserted. The abdominal wound was then partially closed, a harelip pin being inserted in the abdominal wall (which had become somewhat softened) on each side parallel to the edges of the wound to prevent the sutures cutting through. Three subsequent operations were needed before the integrity of the canal was restored. To-day (Sept. 12th) the child is quite well.

The portion of intestine removed measured about 12 inches in length, the intussusception being unreduced. The intussusception was entirely enteric. The mucous membrane of the intussusception looked fairly healthy but the peritoneal coat had given way in several places (this having occurred during attempts at reduction). The intussusception was of a dark greyish colour and was covered with numerous sloughs, the peritoneal coat having almost entirely disappeared. There was a spiral constriction running round the portion from base to apex in which a worm was lying and at and near the apex were definite signs of gangrene. The worm was of the ascaris lumbricoides variety and measured 14 inches in length.



Showing the intussuscepted portion with the worm coiled round it.

Remarks by Mr. BROWN.—I have not been able to find any record of the condition described. The reason I did not join up the ends of the intestine at the first operation is that I have found such procedure to be disastrous. The difficulty of restoring the continuity of the intestinal tract is rendered greater by the fact that it is impossible to lay down definite rules as to when the attempt should be made. If operation is undertaken before the general peritoneal cavity has become shut off septic infection is inevitable. If, on the other hand, operation is deferred too long the distal end of the intestine undergoes atrophic change with remarkable rapidity. In the present instance, although only 12 days elapsed, the intestine was exceedingly thin, the muscular coat having almost entirely disappeared.

Reviews and Notices of Books.

The Channels of Infection in Tuberculosis, together with the Conditions, Original or Acquired, which render the Different Tissues Vulnerable; being the Weber-Parkes Prize Essay, 1903. By HUGH WALSHAM, M.A., M.D. Cantab., F.R.C.P. Lond., Physician to Out-patients, formerly Pathologist, to the City of London Hospital for Diseases of the Chest; Chief Assistant in the Electrical Department of St. Bartholomew's Hospital. London: John Bale, Sons, and Danielsson, Limited. 1904. Pp. 150. Price 12*s.* 6*d.*

As the title indicates this work obtained the prize for the Weber-Parkes Essay in 1903. This prize is awarded triennially to the writer of the best essay upon some subject connected with the etiology, prevention, pathology, or treatment of tuberculosis, especially with reference to pulmonary tuberculosis. The subject chosen for the 1903 competition was: "The Channels of Infection in Tuberculosis, together with the Conditions, Original or Acquired, which render the Different Tissues Vulnerable." This excellent subject opened a wide field of research, and Dr. Walsham, taking full advantage of the opportunities, has accomplished work which amply merits the reward bestowed upon him by the adjudicators.

Part I. of the essay deals with the channels of infection. Dr. Walsham points out that, in the first place, before the channels of infection can be traced out with any degree of precision it is absolutely essential to come to a clear understanding as to what changes in a tissue or an organ are to be considered tuberculous or not. Strange as it may seem, doubts appear still to exist as to the identity of the so-called scrofulous gland and tubercle. Dr. Walsham therefore set himself to answer various questions. The first was, Is the tubercle bacillus or its involution forms always found in scrofulous glands? He describes at length the investigations which he made, as a result of which he confirmed the general conclusion that the so-called scrofulous gland is in reality a tuberculous one. The illustrations of the microscopical specimens which he prepared in the course of this research are beautifully executed and are of great value in assisting to explain his observations.

Dr. Walsham next investigated the various changes which the bacilli undergo in the glands, which are well known to be numerous. He gives a good description of an involution form of the tubercle bacillus known as "Schrön's capsules," and proceeds to inquire, What histological change does the tubercle bacillus or its excretion products produce in the lymphatic glands? The first and earliest change consists, he points out, of a simple hyperæmia with consequent swelling and in the gland substance proper a proliferation of the adenoid reticulum, with a destruction or conversion of the lymphoid cells. Occasionally the only change found in the cervical and bronchial glands is one of hyperplasia. This section of the essay is very interesting and suggestive.

Dr. Walsham then proceeds to consider at length the channels of infection. He gives them as five in number: (1) hereditary transmission; (2) the lymphatic vessels; (3) the blood vessels; (4) epithelial channels; and (5) inoculation into the skin and tissues. As to the first of these he has little to say that is original but considers that there is clinical and experimental evidence in support of the view that the tubercle bacillus can remain latent in an organ or tissue until, for some reason or other, the individual resistance is broken down and tuberculosis results. The observations on the lymphatic vessels as sources of infection are of considerable interest. In the first place evidence is adduced that the lung may receive the infection directly from the bronchial glands; then the question is asked, "What are the channels of infection to the bronchial glands?" The answer to this question occupies considerable space and for the numerous details which are entered into we must refer our readers to the original work. Suffice it to say that the possible channels are discussed as follows: 1. The pathogenic bacillus is inhaled and thus reaches the bronchial glands. 2. The bacillus is absorbed at some point in the pharynx, tonsil, or the post-nasal adenoid tissue, thence being passed to the cervical glands, mediastinal glands, thoracic duct, and so to the right side of the heart and lung. In this connexion it is interesting to note the remarks of Dr. F. Ivens in a paper which is published in the present issue of THE LANCET. She draws attention to the work previously accomplished by Professor G. Sims Woodhead on this subject and also observes that in England only one or two cases of primary tuberculosis of the pharyngeal tonsil have been recorded. She contends that tuberculous cervical glands may be secondary to a primary focus in the adenoid tissue of the naso-pharynx. 3. There may be an upward spread, the bacillus may reach the mesenteric glands from the intestine, and so be passed on to the retro-peritoneal glands, to the bronchial glands, and so to the lung, or by the thoracic duct to the right side of the heart and thence to the lung. In another column we publish a paper by Mr. G. Grey Turner entitled "A Case of Tuberculous Ulceration of the Ascending Colon Simulating Appendicitis." Mr. Turner's conclusions are of special interest in their bearing on

Dr. Walsham's observations. 4. The tubercle bacillus may possibly reach the bronchial glands by the way of the œsophagus; or (5) by extension from carious (tuberculous) vertebræ. An important point is touched upon in this connexion: Is it possible for the tubercle bacillus to pass through a normal mucous membrane and so infect the underlying glands or tissues without leaving any trace behind? From his own observations Dr. Walsham believes that such an event may happen. With reference to the possible absorption of the bacilli at some point in the pharynx such as the tonsil, post-nasal adenoid tissue, or adenoid tissue at the base of the tongue an instructive inquiry was carried out as to the liability of the tonsil to become tuberculous. This is a subject that has been somewhat neglected by pathologists and Dr. Walsham's conclusions are therefore of considerable interest. They are as follows: (1) the tonsils, instead of being almost immune from tuberculous disease, are very frequently affected; (2) tubercle may be primary in the tonsil; (3) the tonsils are very frequently affected secondarily in persons suffering with chronic pulmonary tuberculosis; (4) when the tonsils are tuberculous the cervical glands receiving the lymphatics from these organs are also frequently affected with tubercle; (5) the follicular glands at the base of the tongue are occasionally found to be tuberculous; and (6) the tonsils may be affected from without or through the blood stream in acute miliary tuberculosis.

In considering the blood-vessels as sources of infection Dr. Walsham mainly contents himself with recording the views of other observers. Proceeding to the epithelial channels of spread, he takes as an example the kidney and describes the mode of spread in that organ. He shows that the presence of tubercle bacilli within the glomeruli of the kidney produces no visible change in the vessels of the glomerulus or in the surrounding tissues; then he proves the presence of the bacilli in the urine tubes. He next proceeds to demonstrate the bacilli in the tubes setting up tuberculous changes "in the neighbourhood of tubercles of excretion," and finally quotes the presence of bacilli in the urine of a patient who died from acute disseminated miliary tuberculosis. That tubercle may be inoculated into the skin either through an abrasion or through a sore is well known, and there are unfortunately many instances in which medical men have become thus infected whilst at work in the laboratory or post-mortem room.

The second portion of the essay—"The Conditions, Original or Acquired, which render the Different Tissues Vulnerable"—is much shorter than the first portion. This we should expect, for laboratory work is more useful in demonstrating the channels of infection than in proving the conditions of infection. Dr. Walsham comments on the hereditary transmission of soil favourable for the growth of the tubercle bacillus, on the relation of alcohol to tuberculosis, on the relation of diabetes to the disease, on the relation of pulmonary tuberculosis to mitral stenosis, on the relation of pulmonary stenosis to tuberculosis, and on the relation of lymphadenoma to tuberculosis. These various subjects are discussed in an interesting manner and numerous illustrative cases are given. The essay as a whole is a most valuable and interesting one and the author has conducted his investigations and accumulated information in a manner worthy of the highest praise.

The Boy and his School: What it Can and What it Cannot Give Him. By ROBERT L. LEIGHTON, Headmaster of the Bristol Grammar School. London: John Murray. 1905. Pp. 97. Price 2*s.* 6*d.* net.

WE join with the author of this book in his wish that educational discussion could be lifted to the level of sound logic. Mr. Leighton says truly that most people use the term education as the equivalent of schooling, but the mind is growing in some direction and habits of some sort are forming during every second of waking life, so that education means strictly no less than the whole effect produced upon the mind by the sum of the external forces which exercise any influence upon its growth. That this is so is not as fully recognised as might be expected. A good school will not counteract the effects of a bad home or vicious companions. While everyone recognises the power and importance of social environment, no one can measure the force of individual environment—that is to say, of the general bodily health, eyesight, and hearing—nor of the factor represented by the boy's teacher and his teaching. The great defect of the boarding school, in comparison with good home environment, is its lack of variety, and consequently of mental stimulus. Mr. Leighton says that nothing that the secondary school can teach is worth teaching for the sake of its direct and visible "earning capacity," because no school subject can possess earning capacity for the majority of those to whom it is taught. What schooling can do is to give the pupil some practice in certain habits, part moral and part intellectual, which are essential to the achievement of any useful work, be it great or small. Among these the habit of duty ranks first—of putting business before pleasure, regarding business or duty as something to be done in spite of even great difficulties; while pleasure and amusements may be accepted joyfully when they do not interfere with business but must not be made objects of serious pursuit nor claimed and demanded as a right. Next, the school should teach the difference between ignorance and knowledge, and that knowledge on which it is safe to rely must begin with minute and accurate observation, followed by accurate recollection, and afterwards by sound reasoning. The old-fashioned study of Greek and Latin no doubt teaches boys to observe accurately, and justification for teaching the former as part of the regular public school curriculum is generally advanced upon this ground.

Mr. Leighton holds that the aims of schooling should be three: to provide the pupil with the tools of his trade, to discipline his intelligence, and to train his morals. It is evident that the secondary school can do little in the direction of actually equipping a boy technically owing to the variety of occupations which the pupils will follow. To employ language with understanding is the most widely useful of all arts and so languages, ancient and modern, are usually made the medium for the development of mental capacity. The author in pointing out the value of Latin in this direction says that looked at from the same standpoint chemistry has defects, "particularly the serious one of lacking human interest—a defect common to all branches of physical science." Such a remark is incomprehensible. Much of what Mr. Leighton has written is evidently the result of experience and much also is the commonly accepted view upon educational methods and aims. But his inability to find human interest in the study of physical science is a curious revelation from a modern schoolmaster.

A Handbook of Pathological Anatomy and Histology. By FRANCIS DELAFIELD, M.D., LL.D., Emeritus Professor of the Practice of Medicine, College of Physicians and Surgeons, Columbia University, New York; and T. MITCHELL PRUDDEN, M.D., LL.D., Professor of Pathology and Director of the Department of Pathology, College of Physicians and Surgeons, Columbia University, New York. Seventh edition. With 13 full-page plates and 545 illustrations in the text in black and colours. London: Baillière, Tindall, and Cox. 1904. Pp. xxi.-885. Price 25*s* net.

THE appearance of the seventh edition of this handbook a little more than two years after the publication of the sixth affords the best evidence of its usefulness as a textbook and a work of reference. We learn from the preface that Dr. Delafield no longer shares in its preparation and that although the work has been largely revised its general aims and scope remain unchanged.

The book is divided into three parts, the first dealing chiefly with matters of technique, including the methods of removing and opening or dissecting organs in routine post-mortem work, the preservation of specimens, and the preparation of sections for microscopical investigation; the second dealing with general pathology and the general processes of diseases; and the third dealing with special pathology and comprising an account of the chief lesions of the different tissues and organs.

The first part is necessarily brief, comprising only 62 pages. Although it abounds in useful practical hints and gives details of the best methods of preservation of the individual organs, in places it suffers from over-conciseness—e.g., the section dealing with the bacterial examination of post-mortem specimens occupies less than a page and affords very little information on the subject. Moreover, we are told that if it be necessary to transport the material to the laboratory before making cultures, it is well to reserve the unopened organs, or large portions in the case of solid viscera, and to wrap each separately in a cloth saturated with sublimate solution—a method which hardly commends itself for purposes of bacterial cultures. We are glad to notice that Dr. Prudden includes a brief description of Kaiserling's method of preserving specimens for museum purposes. This part of the work concludes with some excellent general notes on the importance of careful fixation and preservation of specimens in which a few common errors are exposed, such as that of placing large pieces of tissue in small amounts of preservative.

The second part of the work is about 300 pages in length and gives an account of the more important pathological processes and a general discussion of the phenomena of disease. The accounts given are clear, concise, and readable, but in many cases far from exhaustive. The account given of thrombosis and embolism is meagre and the chapter on atrophy, degeneration, pigmentation, and necrosis might with advantage be considerably lengthened; for example, the section devoted to amyloid degeneration is less than two pages in length, including an account of corpora amylacea. The only information given with regard to the composition of waxy material (the name lardacein is not mentioned) is that it is "albuminous in nature." On the other hand, the account of regeneration is good and considerable detail is given. The description of animal parasites is also a somewhat exiguous one. Some of the definitions given of pathological processes are not always clear, again from over-conciseness. Dr. Prudden is at his best in the critical and explanatory sections of the work, where he is original and frequently suggestive, presenting many problems in an attractive manner. In our review of the sixth edition we saw reason to regret the omission of a discussion of modern theories of immunity. This omission Dr. Prudden has now remedied and the account given of immunity, of cytolysis, of agglutination phenomena, and of precipitins is one of the best sections of the book. The statement and exposition of Ehrlich's "side chain" theory and its adaptation to the explanation of these various phenomena is one of the most clearly expressed that we have yet seen. The life-history of the malaria parasites is well described and illustrated by a good coloured plate. The section on tumours is copiously illustrated and is clear on the whole, but very little reference is made to the more recent views of the origin of tumours. General diseases are dismissed with very brief descriptions. Exophthalmic goitre only extends to seven lines and no mention is made of the histological changes in the thyroid gland.

The third and largest part of the work is devoted to special pathology, in which the morbid anatomy and histology of the various tissues and organs are very carefully described. This part of the work we can cordially commend, as it is complete, clear, and conveniently arranged for reference. The various conditions are most liberally illustrated by very excellent reproductions of photographs and drawings. The section dealing with affections of the lungs contains a large number of whole-page reproductions of photographs of lung conditions, which should be very useful. The sections dealing with blood diseases are also good and well illustrated. The account of cirrhosis of the liver is different from that given in most English text-books and we do not approve of the term hypertrophic as applied to any form of cirrhosis.

The work has a good index, it is well produced, and well printed. References are frequently given, especially when they contain a bibliography of the subject under discussion—a very useful feature in a handbook of this kind.

LIBRARY TABLE.

A Laboratory Guide in Bacteriology for the Use of Students, Teachers, and Practitioners. By PAUL G. HEINEMANN, Sc.B., Fellow in Bacteriology at the University of Chicago. Chicago: The University of Chicago Press. 1905. Pp. 143. Price $1.50.—So numerous are the books of this type already published that it is hardly necessary for the reviewer to do more than call attention to any salient features which a new work may possess. The author, quite rightly, says that the accepted methods of practical bacteriology vary so rapidly that there is always need for a new book to embody these latest rules and practices, hence the present volume. The course of instruction outlined therein is identical with the medical course given at the University of Chicago and bears evidence of having been tested practically. The book is interleaved for notes but the blank culture description charts, which form a prominent feature of many American laboratory guides, have wisely been omitted. A sample form of such a chart is, however, appended. The course deals, in the first place, with general bacteriological methods, then treats of special pathogenic germs, and finally devotes chapters to the methods for the examination of water, air, and milk, and the influence of disinfectants on micro organisms. The instruction given is clear and accurate and the practical exercises are well selected. It is assumed that animal inoculations may be made by the student and in this respect the course would need modification to fit it for an English laboratory. Teachers in London will regard with envy the assumption that each student has his own complete laboratory outfit for which he is personally responsible. A feature of the book is the omission of all descriptions of micro-organisms and the insertion of references to text-books and original papers which the student is supposed to consult. Suggestive questions are interspersed amongst the instructions. Undoubtedly any student who worked through this laboratory course would have a very sound practical knowledge of the subject. The book is of good appearance and very well printed.

Drink Restriction (Thirst Cures), particularly in Obesity: being Part VI. of several Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition. By Professor CARL VON NOORDEN, Physician-in-Chief to the City Hospital, Frankfort-on-Main, and Dr. HUGO SALOMON. Authorised translation under the direction of BOARDMAN REED, M.D., Professor at the Temple College and Physician to the Samaritan Hospital, Philadelphia. Bristol: John Wright and Co. London: Simpkin, Marshall, Hamilton, Kent, and Co. 1905. Pp. 86. Price 3*s.* net.—This monograph on drink restriction is an instructive deliverance upon a subject of practical importance and claims to establish the following conclusions as the result of abstinence from fluids:—1. The stomach is relieved of much work, and the pressure exercised upon its walls is reduced. 2. The total labour performed by the circulatory apparatus is decreased and the heart is spared. 3. The fluids of the body become more concentrated. 4. The body-weight is decreased as a result of the dehydration of the blood and tissues. 5. The appetite is reduced. 6. The destruction of albumin is increased (only, however, if the restriction of water is carried very far). The claim that water restriction increases and accelerates the combustive processes going on in the organism, and in particular the destruction of fat, was not borne out by the author's experiments. In addition to the arguments put forward for the restriction of liquids in certain disorders of the cardio vascular apparatus, the kidneys, and the stomach the authors discuss the aspects of the question in relation to obesity, chlorosis, cirrhosis of the liver with ascites, and hæmorrhages. They advise sufferers from heart disease to drink sparingly, even when compensation is in no way disturbed; they recommend the ingestion of no more than from 1250 to 1500 cubic centimetres of liquid a day, including everything fluid in the diet; in fully developed hydrops they proceed more energetically but do not decrease the amount of fluid below 1000 to 800 cubic centimetres. An extensive bibliography is added to this interesting monograph.

Natural Science in Hygiene: or the Life-History of the Non-bacterial Parasites affecting Man. For the Use of Students of Public Health. By JAMES RODGER WATSON, M.A., B.Sc., M.D. Edin, D.P.H. Cantab. Bristol: John Wright and Co. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1905. Pp. 62. Price 1*s.* 6*d.* net.—This little book places before the student of public health the life-histories of the members of the vegetable and animal kingdoms which by their mode of life are of importance from a public health point of view, and with which he is expected to make himself familiar. The life-cycle in a semi diagramatic form is utilised throughout the book as it appeals to the eye and imprints itself with little difficulty on the memory. The life-histories of the grosser forms of parasite only are dealt with, those which do not affect man are either omitted or only lightly touched upon; bacteria are not included. The arrangement of the subject matter is convenient and the text is clearly written.

A Practical Guide to Cookery in West Africa and the Tropics. By Sister COCKBURN, late Colonial Nursing Service, Sierra Leone, West Africa. London: The Scientific Press, Limited. Pp. 160. Price 3*s.* net.—Sister Cockburn tells us that during the years she was in charge of a nursing home at Sierra Leone she was often asked by patients what they were to eat on leaving her care. In this little book she gives a list of dishes the materials for which can nearly always be easily obtained. The recipes have evidently been carefully thought out. The book is practical, easily referred to, and the recipes are for the most part simple, such as can be easily carried out, and such as would provide pleasant changes in the limited menu of the ordinary West African cuisine, more particularly where invalids or convalescents are concerned. Miss Cockburn fully realises the importance of nourishing food served in an appetising form for a convalescent patient. She is to be congratulated on the production of a helpful little volume.

A Manual of Veterinary Hygiene. By Colonel FRED. SMITH, C.M.G., F.R.C.V.S., F.I.C., Army Veterinary Department. Third edition, with 355 illustrations. London: Baillière, Tindall, and Cox. Pp. 1036. Price 15*s.* net.—The new edition of this work on Veterinary Hygiene has been entirely re-written and brought thoroughly up to date. It is not only of interest to the veterinary profession but it should also find a place on the book-shelf of every medical officer of health, a portion of whose duties at the present time require a knowledge of veterinary hygiene, particularly in regard to cattle kept for dairy purposes. It is now universally admitted that veterinary science in this direction has made enormous strides during the past few years and no medical officer is imprudent enough to consider that he knows as much about the management of the domesticated animals as his *confrère* in the veterinary profession; at the same time it is always advisable that a medical officer should acquire as much information as possible in regard to each of the branches which appertain to his duties. Such a book as this gives the necessary information in explicit detail as would be expected in the admitted text-book of many English-speaking schools not only here but also in America. The illustrations are excellent and the style, binding, and arrangement of the type reflect credit on the publishers. This is, in fact, a book which on all grounds we can recommend with confidence to the medical and veterinary professions, especially to those of the former who occupy positions requiring a knowledge of municipal state medicine.

Algiers as a Winter Resort. By ALFRED S. GUBB, M.D. Paris, M.R.C.S. Eng. London: Baillière, Tindall, and Cox. 1905. Pp. 48.—Intending visitors to Algeria will find much useful information in Dr. Gubb's pages, Algiers, the capital, naturally receiving most attention. Particulars of the various routes by which it may be reached from England are given, together with lists of railway and steamer fares. The question of residence in a hotel or villa is discussed and in the event of the latter being preferred the principal requisites of such houses are described. Winter is the rainy season in Algiers but there are fewer rainy days than in Paris. During the winter of 1903-04, which was the most inclement for 40 years, the average maximum and minimum temperatures at Algiers were respectively 58° and 49° F. Dr. Gubb mentions incipient phthisis and chronic diseases of the respiratory tract as foremost among the affections in which the patient is likely to derive benefit from a winter in Algiers. The neurasthenic, the convalescent, and those whose nervous system has suffered from the wear and tear of a busy life, alike gain in health and stamina from the mild temperature and genial brightness of the surroundings. The hot baths at Hammam R'Irba, 70 miles from Algiers, and the principal features of the desert town of Biskra are also described.

A Short Holiday in Northern Climes. By HENRY RUNDLE, F.R.C.S. Eng. Pp. 16.—In this pamphlet, which is reprinted from the July number of the *Medical Magazine*, Mr. Rundle of Southsea gives us his impressions of a trip from London to Copenhagen, Stockholm, Upsala, and Gothenburg, travelling most of the distance by railway. He had an abundance of sight-seeing, took some good photographs of street scenes and landscapes, and returned home well pleased with his experiences.

JOURNALS AND MAGAZINES.

Ophthalmology. Published and edited by H. V. WURDEMANN, M.D., and NELSON MILES BLACK, M.D., of Milwaukee, Wisconsin, U.S.A. Vol. I., No. 4. July, 1905. Pp. 244. Price 6*s.*—The original articles contained in this issue of *Ophthalmology* are eight in number and are arranged in the following order: 1. Astigmatism after Cataract Extraction as Modified by the Conjunctival Flap, by C. F. Clark, M.D., of Columbus, Ohio. Dr. Clark recommends the section to be so made that a conjunctival flap of moderate size is formed and that Snellen's "wet dressing," which consists of placing over the eye a piece of sterilised gauze and a number of small pledgets of lint saturated with a weak solution of sublimate, should be applied. These measures, he believes, will prevent excessive post-operative astigmatism which otherwise is often very strongly marked. 2. Ophthalmometry, by Edward E. Gibbons, M.D., of Baltimore, Maryland. In this article a good account is given of the mode of observing the images of Purkinje These are four in number, one from each surface of the cornea and one from each surface of the lens, and there are subsidiary but very faint reflections. Dr Gibbons gives some ophthalmometric formulæ. 3 Dionin, or Ethyl morphine Hydrochlorate, in Ocular Therapeutics, by Leartus Connor, M D, of Detroit, Michigan. This observer has found a 5 per cent. solution of dionin very beneficial in corneal opacities from recent keratitis, in marginal ulcer in old people, in acute keratitis with iritis, and in sympathetic ophthalmia and other conditions. Dionin, it should be noted, is an analgesic, not a local anæsthetic. 4 Local Anæsthetics and Analgesics in Ophthalmic Practice, by B F. Church, M D., of Los Angeles, California. Cocaine and holocaine, on the other hand, are typical local anæsthetics, other anæsthetics being tropacocaine, acoine and eucaine B. Holocaine should not be used in stronger doses than 1 per cent as it is poisonous. In iritis dionin is stated to have a threefold effect: it relieves pain, hastens the absorption of exudates, and assists atropine in dilating the pupil. 5 Some Lesions of High Myopia Clinically Considered, by Howard F Hansell, M.D, of Philadelphia. Dr Hansell attributes myopia to the following causes: hereditary tendency, congenitally enlarged ball and atrophy of the choroid, excessive convergence, compression of the ball between the recti and imperfectly corrected myopia and astigmatism The pathological changes in high myopia are vitreous opacities absorption of the choroid and thinning of the retina at the posterior pole, fine hæmorrhages into the fovea, vertical elongation of the disc, and detachment of the retina He notices the slow vision of myopes The principal treatment recommended is avoidance of near work and excessive convergence, and the correction of errors of refraction He thinks that in youth glasses correcting the myopia fully for distance should be worn but never for near objects 6 Microphthalmos, Persistent Pupillary Membrane, Anterior Synechiæ, and Central Congenital Opacity of the Cornea, by J. W. Stirling, M D, of Montreal An account of an unusual case. 7 Kuhnt's Conjunctival Flap, by George F Suker, M D, of Chicago, Illinois This conjunctival graft is adapted to cover extensive wounds of the sclerotic, constituting a protection against infection and insuring by exerting uniform pressure the exact juxtaposition of the sclera, retina, and choroid. The graft may be single or double and is characterised by being pedunculated 8 Nitric Acid Burn involving the Whole External Portion of the Eyeball, by C. A. Veasey, M.D, of Philadelphia, Pennsylvania By judicious treatment useful vision was recovered. This number, which is the last of the first volume of *Ophthalmology*, contains numerous abstracts from home and foreign literature and the index of the volume.

New Inventions.

BREAST DISCS

WE have received from Messrs Robinson and Sons of Chesterfield some appliances sold by them under the name of breast discs These discs are prepared from pure absorbent cotton lint, each containing a definite weight of atropine dissolved in oleic acid. The discs are supplied in various strengths as desired, containing one, two or three grains of atropine per disc They are intended for use in cases where it is necessary to apply belladonna to the breasts and it is claimed for them that they are free from irritating extractive matters, are comfortable to wear, easy to remove, and cheap. They certainly seem to present advantages over the old fashioned belladonna plasters

Looking Back.

FROM

THE LANCET, *SATURDAY*, Sept. 15th, 1827.

In the prosecution of our inquiries, I have not attempted to hide from you, Gentlemen, any of the numerous imperfections which belong to our art; on the contrary, I have rather been desirous of pointing them out, for the purpose of inspiring a due degree of caution There are many diseases, the intrinsic nature of which is not understood; and there are many, also, that we have no remedy for; but there are none in which we may not do harm, by an injudicious use of remedies, especially of the deleterious kind at present in general use.

You are not to treat *symptoms* merely; but endeavour to trace them back to their source; so as, if possible, to remove the cause for if you succeed in doing this, the effect will generally cease of itself; and besides, the removal of the symptoms merely, may have an injurious effect upon the disease itself. For example, *pain*, and *coughing*, and *purging*, are not diseases in themselves, but only effects of disease, and ought not therefore, to engage our chief attention in practice; for although either of them may in general be quickly relieved, as by giving opium, this remedy is not always proper to be administered for such a purpose as it is often adverse to the real disease out of which those symptoms arise.

I would strongly advise you to study simplicity in prescription, as the only way of obtaining an accurate knowledge of the effects of remedies; for where many are combined together in the same formula, it is impossible to appreciate justly the merits of any one—to say nothing of the chance there is, of their counteracting one another I am persuaded we very frequently deceive ourselves in regard to the operation of medicines, which seldom effect what we suppose them to do

It is proper indeed, that you should be very sceptical, with regard to medical reports in general, especially in respect to new remedies; which hardly ever maintain the character bestowed upon them by their first employers. This does not always proceed from wilful misrepresentation, but rather from misapprehension, into which it is very easy to fall on such subjects The natural obscurity that involves all subjects connected with medicine, and which is perhaps inseparable from it, will always render its advancement difficult and uncertain. But I cannot help thinking that the progress of our art is impeded in no small degree, by the mystery in which it is purposely involved by its professors the consequence of which is, that the public know hardly anything of its real nature, seeming to think that it consists merely in the exhibition of nauseous drugs They hardly ever estimate justly the qualifications of practitioners, but either receive them with blind credulity, or equally unreasonable scepticism. In the one case, they become the willing dupes of every pretender to the healing art; in the other, they sacrifice the most important of human enjoyments, health, to an unreasonable distrust of all medical aid Were the affectation of writing our prescriptions in unintelligible language (unintelligible at least to any but the initiated) laid aside, the public would soon be enabled to distinguish between real and pretended merit. The mystery observed in consultation and prescription, besides being the strongest support to quackery and imposture, has the further bad effect of taking away that proper degree of responsibility from the practitioner, which is the only safeguard the public can have against incompetency and hazardous experiment on the part of those to whom they intrust the care of their health and life.[1]

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[1] Excerpt from "Lectures on the Diseases of the Nervous System, by Dr. Clutterbuck. Lecture XX."

THE LOSTWITHIEL MAYORAL CHAIN.—The Lostwithiel (Cornwall) mayoral chain, which was presented this year by the present mayor, has received a handsome addition in the shape of nine new links of solid gold bearing the names of mayors of the borough from 1353 to 1510. The links will bear on the back the name of the donor, Dr Nat. T. Coulson of San Francisco, California, who was born at Lostwithiel and afterwards emigrated to America, where he amassed a fortune.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 16, 1905.

The Advent of Cholera.

THE behaviour of cholera during the last century would seem to indicate that there are considerable chances of the disease visiting Western Europe within the next two years. We are to a great extent in the dark as to why it is that cholera remains chained up, as it were, in its endemic centres in India for many years and then bursts its chains and creeps westward until Persia, Western Asia, Europe, and perhaps America bear witness to the horrors of its march. We know, however, something as to the routes by which it has in the past reached Great Britain. As a general rule the disease, having taken on its pandemic phase, has occupied some two or three years in reaching our shores, its progress being stayed by the cold of winter and helped to greater proportions by the heat of the succeeding summer and autumn. At the time of the pandemic which commenced in Bengal in 1826, cholera gradually extended to Russia and across Europe, reaching our shores by two separate routes, *viâ* Riga and the Medway and *viâ* Hamburg and Sunderland. The next epidemic, which commenced in 1846, reached the Caspian Sea in 1847 and extended to Russia in 1848, in the autumn of which year it reached England *viâ*, in all probability, Hamburg. In 1853 the disease again prevailed in Europe and in the autumn of the following year it was carried to our shores through German ports. The route of the fourth pandemic which we have experienced was apparently largely governed by the construction of the Suez Canal, as this was the first occasion on which the disease, being carried from Mecca to Suez by returning pilgrims, spread to the Mediterranean and then northwards. This brief sketch of the history of cholera will suffice to indicate the danger which now threatens us, but it has to be borne in mind that the disease has on several occasions within the last quarter of a century attacked parts of Europe without ever reaching our shores.

As regards the present state of affairs, we showed in our Annus Medicus for 1904[1] that cholera was gradually stealing westward and that it had during that year manifested itself in Asiatic Turkey, Persia, and Russia. We pointed out that the disease had been carried across the Caspian Sea by boats to the ports of the now ill-fated Baku in August, 1904, where, up to October, some 400 cases of the disease had been reported. From the Asiatic shores of the Caspian Sea the disease was conveyed to the mouth of the Volga and travelled along its course, introducing infection into Astrachan, Saratov, and Samara, single cases having been discovered on river steamers as far up the Volga as Nijni Novgorod. When this situation was reached we ventured to predict that the existence of the disease in Russia was not without serious danger to Northern and Western Europe and to England itself. This prediction seems now in a fair way to be realised, since it is clear that the disease has become widespread in Russia among the workmen who have ascended the Volga, and from this river it has probably spread to other of the numerous water-ways with which the Russian Empire abounds. From these waterways, by means which have not been clearly traced, the disease has probably been carried to the basin of the Vistula which, be it noted, is in connexion by its waterways with the Oder and the Spree. From the basin of the Vistula infection seems gradually extending to the west and a Russian emigrant has been attacked by the disease at Hamburg, the port which, as has been already stated, has on other occasions been the gateway from which the disease left the shores of Germany for our own. But one of the most serious aspects of the present spread is the ominous silence of Russia, a country which was one of the signatory powers to the Venice Convention. There would seem to be no means of ascertaining what is the actual prevalence of cholera in the Russian Empire at the present moment, but when we have regard to the numerous waterways and railways connecting Russia with Germany and Austria we see what may be the significance of this indisposition to notify to other signatory powers the existence of *foyers* of the disease. The state of affairs in Prussia is already sufficiently serious with a record of 179 cases and 65 deaths and with the disease drifting over to the west. But here vigorous action is being taken and special river police have been appointed to control the disease along the waterways. We read, too, in the Paris press that a battalion of Fusiliers of the German Guard have been quarantined owing to one of the men having been seized with a suspicious illness. In Germany strenuous resistance will be offered to the spread of the disease, as appears very clearly from the letter of our Special Correspondent in Berlin, but Europe will want to know what preventive measures are being taken in Russia over and above those which we read of in the *Times*, and which are directed a little drolly against the reintroduction to Russian soil of cases which have been exported from Russia.

The question which more particularly concerns Great Britain is whether cases of cholera will present themselves at our ports and whether the disease is likely to assume serious proportions in our seaboard and inland towns. It is probable, we think, that in the near future isolated cases will be landed at our ports and that during next summer and autumn it will require all our vigilance to keep the disease at bay. Definite or, for that matter, suspicious cases of the disease are not likely to cause us so much trouble as are persons who have been infected but who arrive at our ports in the incubation period of the malady, and who may thus be the means of introducing cholera into some of our inland towns. Cases of this latter nature are most liable to occur on vessels coming from ports only some two or three days' steaming from our shores, but it has to be remembered that this limitation embraces practically all the French ports, a large number of German ports, as also the ports of Holland and Belgium. It is, of course, difficult to predict from which quarter the more imminent danger is to be anticipated, but judging by past events we should say that Hamburg is the port which needs most careful watching. At the same time, having regard to the state of Russia, it is impossible, with Libau pouring forth its Polish emigrants, and Black Sea ports for aught we know to the contrary infected, to neglect ships coming from these quarters. It may be instructive in connexion with this aspect of the problem to point out that during August last there arrived in this country from Hamburg, Bremen, and Bremerhaven 3201 aliens, as against 2509 in the corresponding month of last year. This increase is somewhat ominous in view of the fact that the figures for other ports show a falling off as compared with those of 1904. From Rotterdam, Amsterdam, and Antwerp came 3301 aliens and from Libau, the great emigration port for Russia, 1882. In our larger ports we must depend upon the energetic and conscientious discharge of their duties by the port medical officers of health, who should, when necessary, make even elastic use of the great powers conferred upon them by the Cholera Order. The main point to insist upon is that all cases of illness of whatever reported nature should be thoroughly investigated. The medical officer of health must also satisfy himself in the case of aliens arriving from infected or suspected ports—and what a wide margin is here left for his discretion!—as to the trustworthiness of the names and addresses of passengers before he allows them to land. Having forwarded the information to the medical officer of health of their intended destination he has done his utmost, the rest devolves upon the local medical officer. A large share of responsibility also rests upon the Customs, since in the case of all vessels carrying aliens it is the duty of the Customs officers to secure the names and addresses of the passengers. Those, however, who have followed aliens from their ships to their lodgings in the East-end of London or the purlieus of Glasgow must be aware how difficult it is to inspect thoroughly their movements. Yet it is possible that the danger threatens us not so much through large and well-equipped ports like London or Glasgow as through some of our smaller and less well-regulated seaboard towns whether in England, Scotland, or Wales. There are places which, if cholera continues to advance in an ominous manner, should be stimulated to put themselves in order, for their present state is a source of danger to the whole community.

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[1] THE LANCET, Dec. 31st, 1904, p. 1867.

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Infantile Mortality.

In these days, when statisticians continually point to declining birth-rates and utter gloomy forebodings as to the future prospects of any nation which appears to be falling behind its competitors in respect to fertility, all means that can be suggested for saving lives which would otherwise be lost to the State are sure to be studied. If it is not possible to add to our income in this respect we may at least check wasteful expenditure and present a more favourable balance. The destruction of infant life in this country has long been recognised by the medical profession as a serious matter, and it would appear more appalling were it not that other countries can tell a worse tale. So much has been said and written recently upon it that recurrence to the subject might almost seem to need an apology were it not for the urgent importance of the question and for the need of keeping it constantly before the *minds* of our sociologists and legislators. Fortunately, there are signs that public interest is being definitely aroused by the persistence of the reminders which it is receiving. In the speech delivered by Sir John Gorst before the Trade Union Congress much was said recently to focus attention on all the problems involved, most of which are closely connected with the conditions prevailing in our industrial population and so fall properly within the purview of the Congress. For it is in the manufacturing towns of the North of England that the infantile mortality is heaviest, and a direct relation between it and the conditions of labour is not difficult to trace. The figures by themselves are sufficiently striking. For the ten years 1894–1903 the percentage death-rate of children under one year of age was 15·6 of the birth-rate for the whole country. During 1904 the death-rate per 1000 births in London was 146, while in Blackburn it was 191, in Liverpool 196, and in Birmingham 197. Meanwhile, in Southampton it was only 115 and in Willesden 114 and even these totals are far above the figure for Melbourne during the same year—viz., 83—and if it was a very healthy year in that city it was not an unfavourable year in this country. The medical officer of health of Melbourne considers that it ought to be possible to keep down the infantile death-rate permanently to 100 per 1000 in his city and there is no reason why similar results should not be attained in this country. Were such the case it is easy to realise the increase in population which would result from the saving in life, since approximately one-fifteenth more of our infants would survive the perils of their first year, a substantial part of whom might hope to reach manhood.

To appreciate in what directions our efforts must be shaped if this result is to be attained we must consider the causes which are at work to produce the present high mortality. There can be little doubt that the two most important of these are, on the one hand, ignorance on the part of the mothers among the working classes of much that appertains to the rearing of babies, and, on the other, unfavourable social conditions, especially the necessity for married women to leave their homes all day and every day to work in factories or shops. The first-named cause ought not to be beyond removal. The suggestion has been made more than once that instruction should be given to girls in schools as to the management of infants, and it cannot be doubted that such instruction could be given or that it would possess a far higher practical value than many of the subjects now taught. This would provide for future mothers, but the existing mothers must be reached by other means. Fortunately mothers are, as a rule, anxious to do all that is possible for their infants, and will even take advice on the subject when it does not clash with any too deeply rooted superstition. It might be possible to supply without charge to every woman registering the birth of a child a paper containing a few simple rules for feeding and management. This could be done with a minimum of trouble by the registrar of births, a printed form being given to each comer; and the same duty might be performed more efficiently by voluntary visitors who could at the same time see the surroundings of the baby and could, being qualified to do so, give special advice as needed. Some progress has apparently been made in this direction in certain localities, as at Acton, with good results. It must, however, be recognised with regard to the feeding of infants that it is not sufficient merely to give instructions as to the use of pure milk and the proper preparation of it for the child; it is also necessary to provide a supply of milk of the right character and this necessitates much more careful supervision of the milk-supply in its various stages than is at present carried out. Some localities, such as Battersea, have established special depôts for the supply of milk sterilised and prepared for consumption by infants of different ages, and on the whole the departure has met with success and seems worthy of imitation elsewhere. A large proportion of infantile deaths are due to enteritis in the summer months, and in view of the comparative immunity of breast-fed children it can hardly be doubted that the use of sterile food would go far to diminish this factor in the death-rate. With regard to the second great cause of infantile mortality—the social conditions which compel the mother to go to work up to the last moment before her confinement and to return to it again as soon as she is out of bed, leaving her infant to the care of others, and depriving it of its natural sustenance—remedies cannot be so easily suggested. Legislation might, perhaps, be successful in preventing a return to work for at least a month after parturition but the other evils would still remain. It would seem that the most promising step at present possible would be the establishment of municipal crèches for the reception of infants whose mothers were out at work. Here at least the children would receive adequate attention and could be maintained in sanitary surroundings. Sir JOHN GORST alluded in his address to the right of every poor woman to receive medical assistance in labour and to the need for securing such help readily. Certainly no overlapping of local authorities or official red tape should be allowed to interfere with such a right, but in this as in other forms of public assistance it is necessary that some safeguards should be provided in order that the money of the ratepayers may not be spent upon those who are quite capable of paying for medical attendance for themselves.

An interesting question, and one closely related to the problems of infantile mortality, is that of the admission of so called infants—children between three and five years of age—to public elementary schools. Medical opinion is practically unanimous in holding that from the point of view of health such little ones are much better free from the restraints of school life and from the opportunities afforded by aggregation in class-rooms for the spread of infectious diseases. Whooping-cough is one of the chief dangers at this tender age, while the risks of measles and scarlet fever are greatly aggravated where patients are below the age of five years. It is true that scarcely any attempt is made to teach these very young children anything in the form of book knowledge, but the mere insistence upon sitting still and on the maintenance of some unnatural attitude, such as folding the arms, is irksome to babies and is contrary to the dictates of nature. It is far better for them to exercise their limbs freely without rule or guidance. But the arguments against sending infants to the public elementary schools are founded upon the supposition that at home they will be maintained in reasonably hygienic surroundings and receive sufficient supervision to keep them out of actual danger. Unfortunately this hypothesis is too often falsified. The problem, then, is—What is to be done with children of tender years whose homes are insanitary and whose mothers probably are out at work all day? Are they to be looked after in State institutions? And what State institutions would not be liable to the risks of infectious diseases unless the infants were kept permanently interned? Advance along the road of socialism is difficult to arrest when we have once started. Free education was but the thin end of the wedge. The consequences that are arising out of it may even yet be unrecognised. If the social conditions of our industrial classes are to remain as they are at present free meals, free medical attendance, free crèches, and free nurseries may ultimately prove to be bound up with it as necessary corollaries. For medical men these topics are of the first interest, for it is upon medical grounds that all great socialistic developments will be justified.

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The Duke of Northumberland on Liberty.

THE Duke of NORTHUMBERLAND is a great nobleman who has given many indications of regarding his high rank in the most appropriate light, as affording him a vantage ground for the performance of public duty. Among other offices, he fills that of chairman of the Northumberland county council, and in that capacity he recently presided at the ceremony of opening a new hospital for infectious diseases at Newburn, near Newcastle-upon-Tyne. The hospital has been built by the combined efforts of the contiguous districts of Newburn, Gosforth, and Castle Ward, and is intended to serve their united requirements, thus affording a good example of joint action by district councils of a kind eminently calculated to effect economies in the interests of the ratepayers. The DUKE, who delivered an extremely thoughtful and interesting address on the occasion, referred to the difficulties which had sometimes been experienced in uniting local bodies for the attainment of a common object, difficulties which, in the case before him, had either not existed or had been overcome. He pointed out that, so far as could be foreseen, there was no prospect of the attainment of such control over the occurrence and diffusion of infectious diseases as might render isolation hospitals superfluous, although, as became his position as President of the Imperial Vaccination League, he expressed his conviction that this statement had no application to the case of small-pox. He declared his belief that if the population were thoroughly vaccinated and revaccinated no small pox hospitals would be required, and he therefore looked upon a small-pox hospital more or less as an extravagance, although it was an extravagance which would be absolutely necessary until we could persuade the population of this country to adopt the proper means for doing away with small-pox altogether. Such an achievement was within the power of medicine, as had practically been proved in Germany, and he hoped for the day when we should all look back upon small-pox hospitals as antiquated expedients. He hoped, also, that before long it might be possible to prevent scarlet fever and enteric fever from being endemic in the country and, having thus duly congratulated his hearers upon what they had accomplished, or might expect to accomplish, he passed on to condole with them upon the expenses which they were compelled to bear. Amid general applause he declared that, as far as his experience went, representative institutions were very feeble instruments for the promotion of economy. From the House of Commons to the parish council all such institutions were expensive, and although they might have many merits, a question which he would not discuss, they certainly had not the merit of being economical. Moreover, it was an increasing practice on the part of the legislature to leave the details of important administrative measures in the hands of local authorities, and these authorities were hence compelled to incur expenses over which they could exercise only an imperfect control. On these and other grounds it was far more easy to condemn expenditure in the gross than to point to any means by which it might be reduced in matters of detail, and the Duke of Northumberland declared that he and his colleagues in the county council would be very glad if the public would not content itself with merely complaining that the rates were going up but would also explain in what manner they could be kept own. The challenge is one which might fairly be repeated y all municipalities which confine themselves to a lischarge of their proper duties, and in such cases the uggestions of extra economy would probably involve a urrender of efficiency of a kind certain to entail greater cost in the near future.

Passing on from topics of this kind, which were perhaps inevitable on such an occasion, and with regard to which it would be difficult to stray far beyond the boundaries of the commonplace, the Duke went on to advert to a very different set of considerations, to the question, namely, how best to obviate the frequent unwillingness of patients and the friends of patients, especially of the parents of sick children, to avail themselves of the advantages which were offered by institutions like that which he had just declared open. With a statesmanlike recognition of the facts of human nature he pointed out the wisdom of a conciliatory attitude towards parental fears or scruples, however groundless in themselves or however detrimental to the general welfare of the community, and declared that, theoretically at least, the parent was the proper person to educate, clothe, feed, and nurse the child. In a very complex state of society it had been found necessary, however, to interfere between parent and child and to enforce such measures as compulsory education and compulsory notification of infectious disease. It should nevertheless always be remembered that such interference was only justified by the necessities of that complex state of society and that it was to a certain extent contrary to the natural instincts of the parents with whom they were called upon to deal. Parents had, he believed, become greatly reconciled to compulsory education by a growing conviction that it was, on the whole, to the advantage of the children, and if the same parents were made to see that their children when sick were better cared for in infectious hospitals than they could be at home they might be rendered willing to forego that which was the natural instinct of every parent, the nursing of a sick child. It was, however, necessary to produce this conviction. Infectious hospitals, it is true, are not for the benefit of the patients alone but also for the protection of the public; but when a child is ill, the parent, as a rule, cares very little for the public as compared with the child. It is absolutely necessary to the attainment of the full usefulness of the infectious hospital that the parent should be convinced that it is for the good of the child that it should be taken from its home and put into the hospital; and, further, it is absolutely necessary to show the parent that the authorities are willing to afford every facility for the cure of the patient that skill, care, and science can devise.

It is a common fault of reformers that they are seldom able to regard the questions which interest them from the point of view of the persons whose habits they desire to reform. To all such reformers, and their name is legion, we would recommend the careful study of the words of wisdom which we have summarised above. The Duke of Northumberland evidently understands not only human nature in the abstract, but also the human nature of his fellow countrymen in the concrete, and sees clearly the methods which must be employed in order to influence them. It is obvious that if the government of a country could be committed without reserve to the wisest of its population at least one-half of the evils which afflict civilised communities would be promptly remedied. Incorrigible drunkards and incorrigible idlers would be committed to penal colonies and compelled to earn at least an equivalent to the cost of maintaining them. Education would not only be compulsory and universal but would be so controlled as to prepare the educated for the positions in life which it would presumably be their lot to fill. Nuisances productive of disease would no longer be tolerated and all possibilities of communicating infection would be strictly controlled. Instead of any approach to an ideal of this kind we have to deal with masses of ignorance and prejudice which have been carefully cultivated by politicians for their own ends and which rest upon a national character prone to carry its love of liberty to the extent of willingly sacrificing the general good of the community to the freedom of the individual to follow even his most misguided impulses. An interesting little book has lately been published containing a narrative of a visit paid to Berlin by a party of Birmingham brass-workers, who desired to compare the conditions of their trade in Germany with those existing at home. The comparison does not seem to have been made quite fairly, as Berlin is rather a royal capital than a purely manufacturing centre like Birmingham, but the book is full of expressions of simple wonder at a scheme of social order which depends, in the family as in the State, upon a general recognition of the value of discipline. The visitors were amazed at the politeness of the children and at their respectful manner of addressing their elders. They were amazed at the general cleanliness, in clothes and persons, of the industrial classes. They were amazed at the absence of slouching loafers. In a community such as that which they describe there seems to be a recognition that in order to speak with cogency upon grave questions of science or of statesmanship it is necessary to have studied them, and hence there is a general readiness to be guided by authority. Of our own working classes it may be said generally that they have been placed, by the struggles of rival politicians, in possession of more power and of more liberty than they have as yet been educated to use, either for their own advantage or for that of their country. Unless we incur a great war, and the disasters which it would bring upon us, there is reasonable hope that things will mend in time and that the majority will ultimately grow to a perception of the proper use of their opportunities. In order that such a time may come the most pressing duty of the educated is, as Lord SHERBROOKE once said, to educate their masters, and the Duke of NORTHUMBERLAND has shown us the manner in which, in one direction at least, such education may be attempted.

Annotations.

"Ne quid nimis."

MEDICAL MEN IN THE TURKISH STATE SERVICE.

THE Turkish newspapers published in Constantinople are drawing the attention of the Ottoman Government to the deplorable state of medical men engaged in State service in the provinces of the empire. Certain Turkish subjects are afforded a free medical education in the university of the metropolis. They have then, after completing their studies, to serve in districts assigned to them by the Government at a salary of 500 piastres per month (a little over £4 sterling). The duties they have to attend to for this salary are innumerable and of various descriptions. Their sphere of service comprises not only the town or village where they have their headquarters but also the districts around for many miles. They are day and night at the disposal of their patients without having the right of claiming any remuneration whatever. They must be able to engage in every kind of medical practice. They are called upon to perform all sorts of surgical operations. The most difficult cases in midwifery practice fall to their lot. As the surgical and gynæcological appliances at their disposal are far from being efficient it is easy to imagine the inevitable mischief that results in many a direction from such a manner of exercising the medical profession. But this is not all. The Turkish municipal physicians have to perform also the duties of legal advisers in criminal cases. They must examine, in towns on the sea coast, every product of importation, and advise the municipal authorities in all matters of aliment and foodstuffs offered for sale. It is their duty as well to attend to diseased prisoners and to examine physically every candidate for vacant posts in the police or custom house department. They perform the duties of public vaccinators and medical officers of public health. They must treat in case of illness those engaged in the construction of country roads. Very frequently also they are called upon to act as veterinary surgeons; and, to make the list of their duties and obligations more or less complete, they are obliged every month to send in a report of all they have done and seen. The Turkish newspapers of the capital ask, and rightly so, whether there is not an impossibility that any man should do full justice to all these innumerable and varied duties. They draw attention to the fact of the great mortality in the provinces from contagious diseases and also to the inadequate means of combating such formidable epidemics as plague and cholera. They urge the Ottoman Government to increase the provincial medical staff and to augment the rate of allowance in each individual case, and it is to be hoped that the Government will, for the sake of the well-being of its subjects, pay attention to the urgent recommendations. But perhaps the Ottoman Government will be no readier to remedy the drawbacks of the Turkish State Medical Service than British Governments are to remedy the abuses of the Irish Dispensary Service. The medical officers of the Irish Dispensary Service are overworked grossly and underpaid scandalously; the proof of these facts has been demonstrated over and over again, but no measures of reform ensue. We cannot, it would seem, afford to be very severe on the neglect of the Turks to put their State Medical Service in order while we remain so blind to a very similar state of affairs existent in our own country.

NOSCITUR E SOCIIS.

IT will not be out of place to offer a few words of general advice on life at a medical school, seeing that the new students are about to join their chosen institutions in the course of the next few days. It may seem an unblushing platitude to advise the new student to exercise some care in the choice of his friends, but it is a matter of the highest importance to do so. The friendships formed during the first few months at a medical school may influence his whole subsequent career not only during student life but in after life. The friendships made at a medical school are often among the most pleasant and lasting ever made, but nothing is more true than that a man may be known by his friends, while the influence of social environment upon impressionable youth is practically boundless. The main condition necessary for success in the medical profession is work, systematic, methodical, and earnest; the persistent worker always makes the best practitioner, for experience is the most needful thing, and only the student who keeps constantly adding to his practical knowledge, and testing the additions, can be said to be acquiring experience. Hence the medical student has no time for idle friends—he cannot afford to know them if he intends to be a successful man himself. But we do not mean that the medical student should do nothing but work. He should have not only private friends, but should join in the common life, which is often so pleasant and wholesome. The various clubs for games and athletic exercises which exist at all the schools should be supported, as they serve to supply the opportunity for relaxation and physical exercise which are essential to most individuals. They promote relations between the men at various hospitals leading to a healthy rivalry and often to the formation of useful friendships. The student will be wise to avail himself of all chances of taking his recreation with his fellows; exercise is a necessity for him if he is to keep well and work well, while all his manly qualities will be brightened by the stimulus of wholesome games, by their generous rivalry, and discipline to temper. The opportunities offered by the medical and debating societies at his school to acquire a readiness in forming his opinions and a facility in expressing them publicly will often prove of the greatest value in after life to the student. Not only will the young debater learn to propound his views clearly, but, which is better, these views will become themselves more clear if they have to be submitted to the criticism, perhaps the very blunt criticism, of his compeers. Lastly, some outside interest is well worth cultivating, for it is unfortunately true that a too exclusive confinement to professional subjects tends to produce a narrowness of outlook which is regrettable. We dare not, however, lay much stress on this recommendation, for the student's time is so fully occupied with his professional subjects that it is rash to ask him to do more than master those subjects. Yet a hobby will be found very valuable in providing purposeful recreation at times when a cessation of study has been rightly earned.

THE EARTHQUAKES IN CALABRIA.

"AMONG the events moral and material," writes an Italian correspondent, "which give the year now passing a special claim to the title of 'Annus Mirabilis' the appalling earthquake or 'telluric storm' (as Italian seismologists term it) that has visited Calabria Ulteriore will hold a conspicuous place. Rarely, even in that 'classic land of earthquakes,' has there been so widespread and so disastrous a cataclysm. Communes upon communes have been partially engulfed (*inabissati*), villages have either wholly disappeared or have been reduced to ruins, equally unrecognisable with the hundreds of human beings who have perished along with them. Entire families of men, women, and children have been killed outright, while thousands of individuals have sustained injuries of all degrees of gravity, from the lesion that cripples or maims for life to those within the remedial power of minor surgery. Add to all this the panic, the mental prostration, of the thousands of survivors, most of whom are bivouacking in the open, barely clothed, without food or resources of any kind, and some notion will be formed of the human sympathy evoked—sympathy that is oversweeping all Italy, sending relief parties to the scene of destruction and inspiring committees of subscribers, in both of which movements the King (true to the traditions of his house) has at once taken the lead. His Majesty's prompt initiative indeed, loyally and effectively responded to by all classes of his subjects, will have the twofold result of mitigating as far as possible immoderate suffering and of minimising the scarcely less appalling sequelæ consequent on such visitations—disease arising from an infected atmosphere among communities physically and morally predisposed. While all this philanthropy is finding expression in the work of relief it is in the last degree disconcerting to think that the cause of the disaster can neither be explained or provided against—the etiology of earthquakes remaining, and being likely to remain, one of the 'opprobria of science.' At frequent intervals in the seventeenth, eighteenth, and nineteenth centuries that part of Italy known as the 'instep of the Italian boot' has witnessed telluric storms not less destructive than that of Friday, the 8th inst., while all along the littoral, familiar as the Riviera Levante and the Riviera Ponente, the earth's crust appears to be periodically settling down or readjusting itself, causing landslips and subsidences like the recent fatal tragedy at Amalfi, in which a hôtel was engulfed in a few minutes. Just 22 years ago occurred the frightful earthquake at Casamicciola (island of Ischia), notable not only for its harrowing incidents, but also for the famous controversy it evoked between Professor Palmieri, director of the Vesuvian Observatory, and Count Michele de Rossi, called by reason of his improvements in the 'armamentarium seismologicum' the 'Father of Seismology.' Casamicciola, contended Professor Palmieri, was engulfed for this reason—to wit, the gradual, steady thinning of the earth's crust by the perennial escape of sulphureous vapours till its bearing power proved inadequate to sustain the many buildings erected on it of late years for thermopathic purposes. 'Were that the explanation,' rejoined Count de Rossi, 'the submerged buildings would have been found in the perpendicular pose in which they went down, whereas they appeared *en échelon*, clearly the result of that undulatory movement which is one of the typical forms of the earthquake proper.' And round these two theories the controversity raged till it died a natural death—the intelligent outsider concluding that the truth lay somewhere between the two theories. Since then the various geodynamic observatories throughout Italy have been busily engaged in trying to probe the etiology of seismic movements but as represented by the most completely equipped of the number (the Osservatorio di Rocca di Papa in the Agro Romano) they have not come much nearer a scientific explanation than the *χρόμαχοι* of the controversy above referred to (Palmieri and De Rossi). Indeed, Professor Giovanni Agamennone of the Observatory at Rocca di Papa, interrogated as to the causes of this most recent of the Calabrian cataclysms, could only reply that 'in some regions the earth's crust has not yet attained its final adjustment (*sistemazione*) and that in those places, at varying intervals, the soil tends to subside, till it will one day reach its definitive settlement (*assettamento*). For this reason,' he continued, 'earthquakes are unknown in regions of level plains—the Russian Steppes, for example. Mountainous countries, especially if volcanic in character, are much more subject to seismic movements, but not all. The island of Sardinia, to cite one instance, has been absolutely free from such visitations, due, no doubt, to the soil having long attained its *assettamento definitivo*. Asked if the recent eruption in the island of Stromboli could have had any influence on the Calabrian cataclysm, Professor Agamennone replied that it might or it might not—more probably the latter, as preceding earthquakes in Calabria occurred when the island of Stromboli was volcanically quiescent. The professor, meanwhile, is preparing a report which, checked by that also in preparation at the great Geodynamic Observatory at Padua (which ranks next in equipment after that at Rocca di Papa), may throw some light on the phenomena in question. In conclusion, a word of warning may not be thrown away on those of the British public whose sympathies for the sufferers from calamities like the present take the form of contributions in money. In too many cases (that of Casamicciola in 1883 and the terrible inundations in the Venetian territory a year or two before) the monetary subscriptions of the charitable outsider never reached their destination, the distributors having applied them in other directions. Let the charitably disposed send his contribution to the British Consul for consignment to the relief committee known to him, and in this way the malversation of funds (all too notorious in the past) will be made impossible—to the common advantage of the donor and the 'destinatario' alike."

THE HERMITE PROCESS IN POPLAR.

Mr. F. W. Alexander, the medical officer of health of Poplar, presented to the borough council at its meeting on Sept. 7th a report on the manufacture of electrolysed sea water for disinfecting purposes. This process, originated by M. Hermite, a chemist who had made a special study of the processes for the production of "bleach liquor" by electricity, was employed in the first place in certain French seaport towns, including Havre and Rouen. In 1894 an experimental plant was set up in Worthing and this was visited by our Analytical Sanitary Commission, a full report on the process appearing in THE LANCET of May 26th of that year. It was there shown that sea water after electrolysis possessed distinct bleaching and disinfecting properties, due in all probability to the presence of hypochlorous acid. From experimental evidence then obtained it would appear that the magnesium hypochlorite first produced reacted with water to form magnesia and hypochlorous acid. In his report to the Poplar borough council Mr. Alexander pointed out that electrolysed sea water or salt water is not only a powerful deodorant but also a strong disinfectant and one that can be manufactured in bulk at so small a cost that it may be applied to the cleansing and disinfecting of the streets and sewers of a town. The antiseptic power of a solution containing half a gramme of chlorine per litre is stated to be as efficient as a solution of corrosive sublimate of one part in a thousand as used in hospitals. Electrolysed sea water can also be employed to disinfect and bleach clothing without any damage to the latter, in this respect differing from ordinary hypochlorites, which, as a rule, contain a large excess of alkali. In addition to the installation at Worthing referred to above, the process has been in successful operation at Netley and Ipswich and for the last four years at Rolleville, France. As regards expense, Mr. Alexander stated that with a pressure of 110 volts and 30 ampères continuous current 250 litres, or 55 gallons, containing one gramme of chlorine per litre, can be made per hour at a cost of 9*d.* for electricity, including the waste of the rheostat necessary to regulate the current. In a working day of eight hours about 440 gallons could therefore be made at a cost of 6*s.* for electricity. Where sea water is not easily available a solution containing a mixture of rock salt and magnesium chloride may be substituted. In this case for every 55 gallons of fluid there would be required 22½ pounds of salt and five and a half pounds of chloride of magnesium. Taking the price of the former substance at £2 and the latter at £4 10*s.* per ton the total cost, including the 6*s.* for electricity, would amount to 11*s.* 1*d.* per 440 gallons. The Poplar borough council decided to refer the matter to the public health and housing committee to bring up a scheme for the manufacture of electrolysed sea water for disinfecting purposes as a substitute for the disinfectants at present used, and at the same time it appointed delegates to visit towns where the process is at work.

ALCOHOLIC BEVERAGES IN ILLNESS.

Mr. Dawson Burns, D.D., honorary secretary of the London Temperance Hospital, has forwarded to us a paper which was presented to the International Congress against Alcoholism, which met at Budapest during the current week. Dr. Dawson Burns is well known as an enthusiastic advocate of temperance and in the paper before us he gives a glowing account of the good work done at the London Temperance Hospital. At the end of his paper Dr. Dawson Burns says:—

> The conclusions supplied by the experience of the London Temperance Hospital may be concisely summarised as follows:—
>
> 1. That the opinion once very prevalent in England that alcohol was of special value in the general treatment of disease is entirely erroneous.
> 2. That the supposed necessity for alcohol in diseases entailing great exhaustion is also fallacious.
> 3. That the beneficial effects attributed to alcohol may almost invariably be secured by other means.
> 4. That in cases of extreme exhaustion alcohol may possibly be of temporary use but such cases are rare and any special benefit is most likely to occur whenever the patient has not been previously accustomed to use any alcoholic liquor.

No one is more aware than ourselves of the infinite harm done both to individuals and the community by over-indulgence in alcoholic drinks, and we can rejoice with the most enthusiastic total abstainer upon the great diminution which is taking place in the consumption of these beverages, but we cannot help thinking that in cases of illness the reaction from the overdosing with alcohol which was prevalent 30 or 40 years ago is, as is commonly the case with reaction, too violent. Dr. Dawson Burns and many of those who think with him preach a crusade against alcohol, but in our opinion it is too often forgotten that the value of alcoholic beverages in sickness depends not upon their content of alcohol but upon their content of vinous ethers. In certain cases of exhausting diseases, such as typhoid fever and pneumonia, the value of small doses of a good brand of champagne, of a high-class burgundy, or of a really old brandy (the product of the distillation of the grape in a pot-still, which has been allowed to mature by age) cannot be over-estimated. Nor do we think that ammonium carbonate or sulphuric ether, or the other stimulating drugs in the pharmacopœia, can be compared for efficiency with a really old brandy, and it might be truer economy for a hospital to give 90*s.* a dozen for its brandy and to administer the same in drachm doses than to give 48*s.* a dozen and administer it in ounces. If alcoholic stimulants were administered in this fashion less would be given than is now the case, greater benefits to the patients would result, and there would not be so much danger of bringing about an alcoholic habit.

THE CONTROL OF LAUNDRIES IN FRANCE.

A DECREE[1] has been issued by the President of the French Republic relative to the control of laundries in France. It is recommended that soiled linen should not be taken to the laundry unless packed in closed sacks or other suitable containers. Before being sorted the linen and the container should be disinfected by one of the prescribed methods, or by boiling in an alkaline solution, or, at least, should be sprinkled with water to lay the dust. In the last case the containers should be washed in lye or otherwise disinfected. These measures are obligatory in the case of linen from hospitals and sick-rooms. Overalls, exclusively used for the work, should be provided for the workers. These garments should be kept in good order and frequently washed and kept in a place apart from the washhouse and the rooms devoted to the reception of the clean linen. The practice is forbidden of manipulating soiled linen which has not been disinfected or washed in lye in rooms devoted to ironing or to the reception of clean linen. Dirty water is to be conveyed directly from the building by a covered drain. Overseers of laundries are enjoined to draw up rules for the guidance of the workpeople in matters relating to the care of overalls and the necessity for cleanliness at each stage of the work, and forbidding the consumption of liquid or solid food in the laundry.

THE EYELIDS AFTER DEATH.

AT Ballindarragh Bridge, county Fermanagh, on Sept. 2nd, an inquest was held upon the body of a man who had been missing for a week. When found he was immersed in a neighbouring river. There were several wounds on the man's face and it would have been concluded that he met his death by drowning had not the fact been noted by the medical witness that the eyelids were closed when the body was discovered. It was suggested therefore that after death the body might have been thrown from the bridge. This is by no means the first time that the state of the eyelids of a discovered corpse has been adduced as evidence of death resulting from criminal violence. In 1878 the Paris Medical Congress discussed this subject at large and affirmed that in most cases death occurs with the eyes and the mouth open. This is certainly so in asphyxial and in sudden deaths and the fact is often employed to add a ghastly detail to the narration of the event. Where, however, the normal last sleep is continuous with its "twin-brother" death, or where terminal coma supervenes, the eyelids occasionally remain closed. It appears that the tissues of the eyelids are among the first portions of the corpse to undergo death-stiffening; hence, the eyes should be kept shut mechanically for a few minutes immediately after death, when the eyelids will remain closed and will cover the sunken globes. Criminals have occasionally been frightened at the open-eyed appearance of their dead victims and with thoughtful ignorance have closed the eyelids, imagining that by so doing a suspicious clue is avoided; as a matter of fact, they are affording strong evidence against the apparent suicide which they wished the corpse to simulate. Associated with the opened eyelids in death is "*l'imbibition cadavérique du fond de l'œil,*" described by Larcher in 1862. Ordinarily, shortly after death the eye exhibits a glazed, lustreless look without the normal vital reflection, the pupils are still, and the cornea is dull. When the eyelids remain unclosed the sclerotic is exposed to the air and the moisture in the superficial tissue evaporates. Within a few hours a dark oval stain develops on the temporal side of each globe, a condition which is absent when the lids are closed shortly after death. This appearance, which is known as Larcher's sign, is of medico-legal interest, as the stain will be conspicuous even if the lids have been closed some hours after the death occurred. The popular fallacy as to the condition of the eyelids of the dead is illustrated by the faulty emendation of Augustus Toplady's famous hymn composed in 1765; he wrote, in accordance with contemporary physiology: "When my eye-strings break in death"; the usual modern miscorrection reads, "When my eyes shall close in death," which, although a poetical metaphor, does not conform to truth.

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[1] Répertoire de Pharmacie, 1905, No. 6, p. 234.

PLAGUE AND OVERCROWDING AT BOMBAY.

IMPORTANT public meetings have been held at Bombay which may be taken to indicate an awakening of conscience on the part of leading inhabitants. The great mill owners and others are compelled to recognise that the very high death-rate and the prevalence of plague are evils that could in a large measure be checked. The form of precaution which has found most favour is that of inoculation with Professor Haffkine's prophylactic. Some mill owners have promised to give Rs. 50 to the family of any one of their work-people who die from plague within a year after being inoculated. That sounds very well but certain of the mill owners who make this offer are working their employés more than 12 hours a day, and perhaps, as members of the Bombay municipality, are helping to put aside proposals made for the purpose of improving the housing of the poor. Inoculation may prevent a person from dying from plague but if he is overworked, badly paid, and lives in an insanitary, overcrowded dwelling he will die prematurely, though the immediate cause of death be some other sort of disease. Formerly the hours of labour in the Bombay mills were limited by the duration of the daylight and therefore did not exceed 12 hours. Now, however, that electric light has been introduced the work can be prolonged indefinitely and consequently some of the mill hands are now kept at their tasks for 14 or 15 hours a day and this with a temperature in the shade of from 85° to 95° F. Finally, when these wretched people have finished their work they go home to jerry-built houses of so miserable a character that they are not only insanitary but unsafe. A member of the Bombay corporation, pointed out at a recent meeting that "last year 202 notices were issued by the municipal authorities for the removal of unsafe buildings; that in the last five years 122 buildings or parts of buildings have collapsed in the city, killing 26 and injuring 30 people; that nowadays frame buildings in Bombay are made with inferior wood, the work is scamped, and the structures are shaky and jerry-built." Some idea of the insanitary condition of the dwellings may be gathered from the fact that a by-law was proposed to establish 40 superficial feet and 300 cubic feet as the legal minimum of space for each inhabitant. But to enforce this rule it was calculated that it would be necessary to displace 235,000 persons out of a total population of 718,650. Of this population of Bombay the greater part—namely, 80·86 per cent.—occupy one-room tenements and the average number of persons living in each room is 4·21. That cholera and plague should prevail under such conditions is in no wise surprising. Bombay seems to be passing through a somewhat similar phase of economic development as that which afflicted the great manufacturing centres of England in the "forties." It greatly needs a Lord Shaftesbury with his Common Lodging-houses Act of 1851, it needs the British Ten Hours Act, and many of our sanitary and building Acts and by-laws.

PELVIC HYDATID DISEASE.

HYDATID disease in the abdomen or thorax is not uncommon and not specially difficult of diagnosis, but hydatid disease in the pelvis is very rare and correspondingly difficult of diagnosis. Mr. E. Hurry Fenwick has stated that in the literature of the last 200 years he could find only 100 recorded cases of pelvic hydatid disease, of which a little less than half occurred in women. In the *New Zealand Medical Journal* for June Mr. F. R. Riley has reported the following case. In October, 1904, he was called to a man, aged about 50 years, suffering from retention of urine, the history being that for ten years he had had difficulty in micturition. There was a rounded lump in the lower part of the abdomen which reached nearly to the umbilicus—apparently the distended bladder—but there were less pain and distress than were to be expected from the size and tenseness of the swelling. The patient said that he had similar trouble 18 months before and that there was great difficulty in passing the catheter. A No. 10 silver catheter was passed, however, without difficulty and about six ounces of urine were drawn off. The patient was relieved but the abdominal swelling remained as large as ever. Rectal examination showed that the prostate was small. Behind it was a tense elastic swelling and fluctuation could be obtained between the finger in the rectum and the hand on the abdomen. Mr. Riley concluded that the tumour was probably hydatid and recommended operation. But the patient declined, as after this he could pass urine by straining and pressing on the abdomen with his hand. On Nov. 19th retention of urine again occurred. A catheter was passed and seemed to enter the bladder but no urine escaped until after a hot bath when a little was passed. It was decided to operate, when on incising the linea alba the bladder presented uncovered with peritoneum. It was pushed downwards and a cyst came into view. On incising the latter about a quart of clear fluid escaped. The lining membrane was seized with forceps and withdrawn apparently intact. The cyst wall was sutured to the abdominal wall, two drainage-tubes were inserted, and the wound was sutured. Recovery followed and there was no further difficulty in micturition. It is remarkable that in spite of the long duration of urinary obstruction there were no symptoms of nephritis, the urine being perfectly normal. Hydatid cysts in the male pelvis have generally been found on dissection to be in the subperitoneal cellular tissue of the posterior wall of the bladder or in the angle between this layer, the recto-vesical sheath, and the posterior wall of the prostate. As the cyst develops it extends upwards—in the line of least resistance—displacing the small intestines, obliterating the pouch of Douglas, stripping the peritoneum from the posterior wall of the bladder, pressing this organ upwards against the pubes, and pressing the rectum against the sacrum. Then the cyst emerges from the pelvis and is observed for the first time by the patient or his medical adviser, though rectal and vesical pressure symptoms may have existed for some time. Still stripping the peritoneum from the back of the bladder or carrying that viscus with it the cyst at length occupies the preperitoneal space almost as high as the umbilicus or, in extreme cases, still higher. The projection caused by the cyst is increased by the distended bladder and the appearance of a large abdominal tumour is produced. The main stress of the pressure falls on the bladder and ureters. The former may be nipped against the pubes and transformed into a cavity with the shape of an hour-glass. The ureters are dilated and liable to be affected by any inflammatory process which may originate in the cyst. Moreover, an ascending inflammation from the bladder may occur and extend to the kidneys.

THE USE OF PRESERVATIVES IN MILK.

THE vexed question of the use of preservatives in milk has again been raised in a prosecution at Wakefield in which the Farmers' and Cleveland Dairy Company were charged with selling milk adulterated with boric acid to the amount of 4·8 grains per pint. Dr. J. R. Kaye, in his evidence, said he regarded the use of boric acid as not only directly injurious but as a dangerous cloak to insanitary conditions in connexion with the milking. For the defence evidence was given by Dr. Thomas R. Bradshaw of Liverpool who stated that the disuse of milk preservatives in Liverpool had during the past year greatly increased the infantile death-rate, chiefly from diarrhœa, as the milk without the use of preservatives rapidly became putrescent. The departmental committee, after careful inquiry, recommended: "That the use of *any preservative* or colouring matter *whatever* in milk offered for sale be constituted an offence under the Sale of Food and Drugs Act." Dr. Bradshaw holds that the administration of small doses of boric acid is not injurious to health, while the conditions under which milk has to be kept by the poorer classes are such that, unless preservatives are used, decomposition with its attendant dangers is certain to occur. In the case first quoted the bench dismissed the summons because, although there appears to have been no denial by the defendants that the milk contained 4·8 grains of boric acid to the pint, it was not satisfied that the quantity of boric acid in the sample was injurious to health. The bench stated that the matter was one of great public interest and an application for costs on behalf of the defendants was refused.

THE CO-EXISTENCE OF TYPHOID FEVER AND DIPHTHERIA.

IN the *Journal of the Royal Army Medical Corps* for September Lieutenant-Colonel H H. Johnston has reported a rare case of the co-existence of typhoid fever and diphtheria. A soldier, aged 25 years, was invalided from South Africa with "disordered action of the heart" and was admitted into hospital on April 30th, 1905. From May 1st to 7th he suffered from malaise. On the 8th the temperature was 102·4° F. and there were diarrhœa, rose spots on the abdomen, and headache. On the 11th Widal's reaction was obtained. The mouth was very dirty and there was a whitish membrane on the soft palate. On the 12th smears from a throat swab showed large numbers of staphylococci and streptococci and a few bacilli which gave Neisser's staining reaction. Smears from another swab showed the diphtheria bacillus. The temperature ranged up to nearly 104° and was reduced by sponging. On the 13th he was delirious. On the 14th antitoxin was injected but produced no improvement in the patient's condition and had no effect on the temperature or pulse. On the 15th he was unconscious and the temperature was 104·8°. On the 17th, the seventeenth day of the typhoid fever and the seventh day after the membrane was observed, the temperature was 105·8° and death occurred. At the necropsy characteristic typhoid ulcers were found in the ileum. Examination of the fauces was not practicable on account of rigor mortis. Cultures from the spleen yielded a motile bacillus which did not retain Gram's stain, probably the typhoid bacillus. The source of the diphtheria could not be traced.

STERILISATION OF CATGUT BY BENZINE.

M. Beslier, a French pharmacien, has suggested in the *Journal de Pharmacie et de Chemie* (1905, No. 10, p. 497) a method of sterilising catgut by means of benzine. The gut is rolled on glass bobbins and placed in a copper bomb containing crystallisable benzine. The bomb is closed by means of a screw and heated in an autoclave and the benzine is allowed to boil for from 20 to 25 minutes in order to defat and dehydrate the gut. The bobbins are then transferred to an unclosed flask which is immersed in another copper bomb containing benzine and likewise closed with a screw. The bomb is then heated in a stove until a manometer indicates a pressure of two atmospheres, after which the temperature is gradually lowered. This operation should last about one and a quarter to one and a half hours. The screw of the bomb is then replaced by a plug of cotton wool, the greater part of the benzine is removed by means of a syphon, and the bomb is heated on a sand bath. During this operation the atmosphere of benzine is replaced by filtered air. Lastly, enough alcohol is introduced into the flask to preserve the catgut and to supply sufficient water to enable it to regain its suppleness. Catgut sterilised in this manner when tested by means of suspended weights was found to have maintained its original strength.

THE MEDICAL MAN, THE CORONER, AND THE PATHOLOGIST.

A RECENT inquest in the south-western district of London, held by Mr. R. Henslowe Wellington as deputy coroner, affords a typical instance of the policy introduced and insisted upon by Mr. Troutbeck, which no doubt his substitute considers himself obliged to follow. In this case a local medical practitioner, Mr. H. B Greene, was summoned by the police to attend a man who had been found with his throat cut upon Clapham Common. On going to the spot indicated Mr. Greene found that the man was dead and proceeded to make observations as to the probable cause of death, suggesting, among other things, a search which resulted in the finding of a bottle that had contained oxalic acid. He then remained until the police ambulance arrived and the body was removed. At the inquest the jury returned a verdict of suicide after Dr. Freyberger had given evidence, as the result of a post-mortem examination, that death had been due to the wound in the throat and that oxalic acid had been drunk before this was inflicted. Mr. Greene was not summoned to give evidence and his offer to describe what he had seen to the coroner's jury was refused. Two points require to be insisted upon in a case like this as indicating the possible, and indeed probable, results of such ill-advised refusal to take the evidence of the medical man who first saw the dead body. Firstly, an error may be made as to how the cause of death actually arose, so that murder may be mistaken for suicide or for accidental death, and *vice versâ*. Secondly, medical men may well be discouraged from answering a summons to the side of a supposed corpse, as to go when they are bidden to a dead person will result in waste of time. The fee for a post-mortem examination and for giving evidence at an inquest is not large, but it prevents the service rendered from being purely gratuitous; and if in consequence of the fee being withheld members of the medical profession fail to attend in such cases as that described above lives which might be saved will sometimes be sacrificed. For every person who is reported by the discoverer of the tragedy to be dead is not found to be dead, but only the prompt presence of a medical man will, as a rule, enable them to regain a hold on life. This case, by the way, is another of those to which Mr. Troutbeck's excuse that special skill is needed in some cases in order to elucidate the cause of death can in no way apply.

THE UNION OF THE LONDON MEDICAL SOCIETIES.

WITH the opening of the medical session it is hoped that active progress will be made with the scheme for amalgamating the London medical societies. As stated in THE LANCET of July 29th (p. 310) a meeting of the representatives of the various societies on July 19th last adopted a report on the subject. This report will be submitted at an early date to the members of individual societies by their councils for discussion. As soon as the societies forward their amendments and criticisms to the honorary secretaries the executive committee will be in a position to take definite steps in the matter.

NORMAN KERR LECTURE.

THE first Norman Kerr memorial lecture will be delivered by Dr. T. D. Crothers (Professor of Mental and Nervous Diseases in the New York School of Clinical Medicine, secretary of the American Medical Society for the Study of Alcohol and Narcotics, and editor of the *American Quarterly Journal of Inebriety*) on Tuesday, Oct. 10th, at 8.30 P.M., in the rooms of the Royal Medical and Chirurgical Society, 20, Hanover-square, W. The lecture will be preceded by a reception by the President of the Society for the Study of Inebriety (Dr. Harry Campbell) and its council, and will be followed by a conversazione. It is greatly desired that a large and representative meeting should assemble to welcome and hear Dr. Crothers, whose researches into the study of inebriety are so well known. Admission will be by ticket only, which may be obtained on application to Dr. T. N. Kelynack, honorary secretary, Society for the Study of Inebriety, 120, Harley-street, W. As will be seen by a letter which we publish in another column it is proposed to raise a fund the interest of which shall be applicable to the support of the lectureship.

THE medical officer of health of the Cape Colony reports that for the week ending August 19th the condition of the colony as regards plague was as follows: At Port Elizabeth one case of plague was discovered during the week—namely, that of an Indian male, found dead. In other districts of the colony no case of plague occurred in human beings but plague-infected rodents were found at Port Elizabeth, East London, and King William's Town. As regards the Mauritius a telegram from the Governor received at the Colonial Office on Sept. 8th states that for the week ending Sept. 7th there were seven cases of plague reported and seven deaths from the disease.

WE are asked to announce that in consequence of a family bereavement Dr. E. Markham Skerritt will be unable to fulfil his engagement to preside at the annual dinner of the old and present students of the Medical Faculty of University College, London, on Oct. 2nd. The chair will be taken by Sir Thomas Barlow, Bart., K.C.V.O.

THE annual meeting and dinner of the Association of Public Vaccinators of England and Wales will be held at the Midland Hotel, Manchester, on Friday, Oct. 27th. This is the first time that the annual meeting has been held in the provinces and a successful reunion is anticipated. The dinner will be served at 6.30 P.M., and from the interest already manifested by the members in the surrounding district a large gathering is anticipated. Any information desired by public vaccinators will be gladly given by the local secretary, Dr. F. P. Sarjant, 1, Grosvenor-terrace, Withington, Manchester.

HIS Majesty's Government has decided to send representatives to the International Congress of Tuberculosis, to be held in Paris, Oct. 2nd to 8th. Dr. C. Theodore Williams has been accredited as one of the representatives and Dr. H. Timbrell Bulstrode as the other.

Professor William Osler has accepted the post of Thomas Young Lecturer on Medicine at St. George's Hospital and will give a series of lectures and demonstrations at the hospital next spring on the Diagnosis of Abdominal Tumours.

THE ANNUAL REPORT OF THE MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD.

FIRST NOTICE.

WE have received the supplement to the thirty-third annual report of the Local Government Board containing the report of the medical officer of the Board. This report relates to the year 1903-04 and, like its predecessors, contains material of high value insuring it a welcome from all engaged in public health administration. We propose to give in subsequent articles a more detailed account of the contents of this volume but we may on the present occasion briefly refer to some of the subject matter included in Mr. W. H. Power's report and in the papers of his colleagues of the medical department which are appended to his introductory pages.

Mr. Power's opening paragraphs give an account of the results obtained at the International Sanitary Conference of Paris, 1903, at which the British representatives included Dr. Theodore Thomson, one of the medical inspectors of the Local Government Board. Mr. Power regards the conclusions which were arrived at as being, on the whole, satisfactory. The Paris Convention, he says, "may be regarded as having in greater degree than any previous International Sanitary Convention attained that combination of due and sufficient regard for public health with removal at the same time of unnecessary restrictions on commerce which it has always been the object of Great Britain to secure," although he notes that diversities of opinion on the rat question could not be reconciled to the extent of obtaining security that measures of rat destruction on board ship should in no case be needlessly applied. In respect of other questions a tendency, which was more conspicuous in 1903, was shown to accept at a later conference British views.

Turning to domestic administration Mr. Power finds strong reason to condemn two urban district councils for failure to insist upon the most elementary requirements of the Public Health Act. The reports presented by Dr. Reece and Dr. Johnson respectively on the Spennymoor urban district and on the urban district of Tyldesley-with-Shakerley describe conditions with which we are familiar in the accounts which were published many years ago by the Board of Health as evidence of the need of a public health law and of sanitary administration. That these conditions should exist 30 years after the passing of the Public Health Act is certainly astonishing and indicates the need of a further control of so-called sanitary authorities. Probably this will be found in the development of the administration of county councils, bodies which need to be provided with much larger powers than they now possess to deal with local insufficiencies, and in this connexion it is interesting to note that Dr. Reece's inquiry into the sanitary conditions of the former district was due to representations by the Durham county council. How soon Parliament will be prepared to give its attention to the need for a more complete sanitary administration cannot at the moment be seen, but its action must undoubtedly be quickened by the publication of such reports as those to which we refer. Another locality which is cited as failing in a different respect is the town of Whitehaven. Whitehaven has in the past had an unsatisfactory reputation for the prevalence of typhus fever among its inhabitants; in 1901 the population suffered from an outbreak of enteric fever which brought Dr. H. T. Bulstrode upon the scene and led to attention being directed to the unsatisfactory condition in which the working classes were housed. Included among the appendices to Mr. Power's report is a report by Dr. Reginald A. Farrar which shows that as the result of subsequent inquiry it was found that little had been done to remedy the evils pointed out by Dr. Bulstrode, evils due "to the unregulated erection of dwellings upon every available space within the town." The need of a scheme of demolition and of provision of additional house accommodation was obvious as the only effective remedy, and the story of Whitehaven teaches the lesson of "the importance of preventing recurrence of building mistakes in future"—"a lesson," Mr. Power points out, "of which heed should be taken throughout the country."

Of other reports of interest made during the year we may mention one by Mr. Hooper and Dr. Buchanan relating to the granting of a loan to the Bedford town council for the improvement of the water-supply to that town, which is of importance to all concerned in the supply of water to communities, and another by Dr. S. M. Copeman relating to an outbreak of "epidemic skin disease" among the inmates of the Hendon hospital of the Central Sick Asylums Board. The facts elicited by Dr. Copeman pointed to milk as a probable cause and suggested that preservatives might be concerned in the causation of the disease.

With respect to vaccination Mr. Power is able to show that in the five years 1898-1902 there has been a gradual decrease in England and Wales of "the percentage of births remaining unvaccinated," this percentage declining from 26·6 to 15·2. This improvement has, of course, not been uniform over the whole country and further it is noted that an increase in the proportion of children born who are vaccinated is sometimes attended by an increase in the proportion of certificates of conscientious objection. In London the number of certificates of conscientious objection is small but the improvement of vaccination administration is slow notwithstanding the recent experience of small-pox in the metropolis, pointing undoubtedly in some unions to serious laxity of administration. Referring to the excellent results obtained in Germany Mr. Power cites the report of Dr. R. Bruce Low on the results obtained in that country from which epidemic small pox has practically disappeared, and he adds that "it is not possible to deny that had this country given heed, as Germany has done, to the lessons of the small-pox pandemic of 1870-73 London might have been saved the enormous cost which she has since been called upon to bear in removal and maintenance of her small-pox hospitals beyond the metropolis."

The auxiliary scientific investigations made under the direction of the Board include experiments by Dr. Haldane and Dr. Wade on the value of the Clayton process in destroying rats, in which it was found that this process had largely failed when the holds of the ship were full of cargo. They suggest that the failure might be overcome by the addition to sulphur dioxide of a small proportion of carbon monoxide. The practical difficulties are, however, found to be considerable and further inquiry is being made into the matter. Dr. Klein has been engaged in inquiries into the differences between the plague bacillus of the rat and human being; Dr. Gordon has reported upon the contamination of air of occupied rooms by particulate matter emanating from the bodies of persons assembled within them and into "mixed infections"; Dr. Klein writes on the influence of symbiosis on the virulence of pathogenic microbes; Dr. Sidney Martin on the toxic action and on the reaction of the toxin of proteus vulgaris; Dr. Houston on the bacteriological examination of the excreta of man, sea fowl, and fish, and of certain potable waters; and Dr. Alan B. Green on the employment of chloroform in connexion with vaccine lymph. Dr. Green's conclusions seem to show that we have in chloroform an agent of material value in the purification of vaccine. To these valuable contributions we hope to refer later.

HOSPITAL SATURDAY AT PLYMOUTH.—The treasurer of the South Devon and East Cornwall Hospital has received £508, being the amount collected in Plymouth on Hospital Saturday (July 15th)

MEDICINE AND THE LAW.

The Death of a Coroner leaving an Inquest Unfinished.

THE jury assembled to continue an adjourned inquest in South Staffordshire recently had a curious point laid before them illustrating the inconvenience that may arise from the maintenance of venerable legal institutions, for which the necessity has long passed away. The coroner who had opened the inquest had died since he adjourned it, so that a new inquiry had to be opened by the deputy coroner. The body, however, had been buried meanwhile by the relatives, presumably in accordance with an order made by the deceased coroner, although the deputy who foresaw the deadlock which would arise had endeavoured to delay the funeral. In these circumstances the jury, although composed of the same persons who on the first occasion had viewed the body, would not have done so as part of the new inquest and the deputy coroner seems to have considered the difficulty insurmountable, for he dismissed them until he should have obtained an order for exhumation from the Home Secretary. Strictly speaking, he was no doubt right, but he could hardly have been blamed if he had neglected the letter of the law in the somewhat improbable event of anyone observing the omission. Attention is frequently called to the unpleasant, unnecessary, and possibly dangerous character of the ceremony of viewing the body, a practice which has survived from bygone days when trial by battle, witch-burning, and many other legal institutions not now considered necessary were upheld and respected. The sight of the body by jurymen neither acquainted with the deceased during life nor possessed of any medical knowledge can convey absolutely nothing to them to supplement the evidence of identification and of the cause of death, which will be laid before them; and no doubt when a new Coroners Act is passed the viewing of the corpse will be done away with.

The Verdict of "Suicide while Insane."

At an inquest held recently at Lancaster it was proved that the deceased, the head mistress of St. Anne's National School, had contrived to obtain carbolic acid from three different druggists by sending a pupil teacher to buy it on the pretext that it was needed for an object lesson. The contents of the three bottles thus procured had been poured into a teacup and drunk by her. Before doing this she had forwarded to her sister a long letter, from which the following passages were laid before the jury:—

> I have done what I have done not with a suicidal wish, but because I truly and reverently believe it to be the wisest and most honourable course left open to me. I wrote a book, entitled "The Fulfilment," four years since. It contains one of two things, either truth or page upon page of blasphemy. I know it to be truth, but so simple that the world can hardly recognise it.
>
> Whilst I stand in the light I'm afraid the truth cannot be seen at all, but when I'm gone and the book has a fair chance of being read and discussed, as it deserves to be, it will appear different from what it ever can do with me living. No book was ever written by human hand more reverently and with greater purity of thoughts. I tried to publish it at the time it was written but failed, and since then have gone on writing patiently and spending money willingly with the one aim of making an opening for it, but I am as near to-day as four years since.
>
> If the book, "The Fulfilment," had been less near to God and less sacred to me I would have fought for it well with earthly weapons; but it was given to me out of the great silence, and I am giving it to the world the same. That is the simple honest truth of the whole matter. I have tried to give God's gift to the world with as little of stumbling block as possible. If alive, many, who while reading the book, would scarcely take me seriously, but otherwise they must, of necessity, do so when dead.

According to the reports of the case which have been published in the newspapers the coroner, in addressing the jury after reading the above, told them that it was "idle to suggest insanity" but that "after the letter" a verdict of death from the effects of carbolic acid self-administered might be returned and the jury unanimously "accepted" the verdict thus proposed to them. In a large number of instances of suicide coroners' juries deliver a verdict to the effect that the deceased was of unsound mind when he took his life, with little or no evidence of mental unsoundness, temporary or otherwise, before them and they do so in order to prevent the distress which may be occasioned to surviving relatives by a finding of self-murder. In the above case it would be difficult to say on what ground a verdict intentionally omitting all mention of insanity was returned or how the letter quoted could have been thought to point towards anything but mental derangement on the part of its author. There does not, however, seem to have been exper evidence to guide the jury such as any medical man could have given with the letter of the deceased and the history of her life before him, a life which in her position as head mistress must have included much hard work and anxiety. If the verdict of a coroner's jury is to be of any value or importance it should be based upon the best evidence obtainable. If it is looked upon as of no importance it is not easy to see why jurymen should be asked to waste their time in returning it.

GREAT REDUCTION IN THE CHICAGO DEATH-RATE.

THE health authorities of Chicago claim that the death-rate of that city has been reduced by more than 50 per cent. during the last 50 years, and within the last ten years something like half this improvement has been effected. The results due to an outlay of £20,000,000 on a great drainage canal, on sewers, water mains, and on raising the level of many parts of the city so as to render drainage possible, are now telling on the health of the population. Yet if much money has been spent on public works the Health Department has been starved in a manner that is not creditable to the great western city. It appears that at San Francisco the Health Department costs 64 cents per annum per inhabitant. This is the highest figure recorded. At New York and at Boston the cost is 30 cents per head, at Philadelphia 23 cents, but at Chicago it is only 10 cents It is doubtful, however, whether this is a proper way of estimating the question. Where the population consists mainly of wage earners the amount paid per head cannot be very high. It would be more to the point to know what percentage of the total expenditure incurred by the municipality was devoted to the Health Department. In any case, the following figures relating to the six largest towns in the United States give an indication of the progress accomplished. The population of New York in 1900 was estimated at 3,437,202; the death-rate in 1893 was 26·8 per 1000, and by 1900 it had fallen to 20·4, or a reduction of 23·8 per cent. In Philadelphia, with its population of 1,293,697, there has been no improvement; the death-rate was 21·2 on both occasions, nor has there been any improvement at Baltimore with its population of 508,957 and death-rate at 21·0. But at St. Louis, with a population of 575,238, the death-rate has fallen from 21·2 in 1893 to 17·9 in 1900, or a reduction of 15·5 per cent., and at Boston from 24·0 to 20·1, or a reduction of 16·2 per cent. during the same period. The population of Boston was 560,892 according to the census of 1900. Now Chicago seems to have beaten all these records. Its population was set down in 1900 at 1,698,575, showing that it is the second largest town in the Union. The death-rate in 1893 was 21·6 and in 1900 it was 16·2. This is a reduction of 25 per cent. In 1904 the death-rate of Chicago was only 13·62 per 1000. There was an improvement along the whole line with the exception of pneumonia, heart disease, and Bright's disease. The increase in deaths from pneumonia since 1893 is equal to 17·2 per cent.; from heart disease to 27·7 per cent.; and from Bright's disease to 73·2 per cent., that is, 56 deaths during 1893 from Bright's disease and 97 deaths in 1904 per 100,000 of the population. This increase is, however, of little importance when compared with the great decrease in other respects. Thus in 1893 the deaths of infants under one year of age was equal to 246 per 1000 and in 1904 to only 124 per 1000. The death-rate of children from one to five years has been reduced from 35 per 1000 in 1893 to 13 per 1000 in 1904. The average duration of life was 22·8 years in 1893, and it was 32·5 years in 1904. Thus within 12 years the expectation of life has increased for every man, woman, and child living at Chicago to the extent of nine years and nine months. Commenting upon these figures, Dr. Arthur R. Reynolds, chief of the Chicago Health Department, quotes the following passage from the leader of a prominent Chicago daily newspaper:—

> A decrease in death-rate is one of the most indisputable benefits of material progress. When material progress means simply getting to San Francisco ten hours sooner, or talking with King Edward by submarine telephone, or working three times as fast and as hard as our grandparents, it is easy to ask: Why, after all, should we regard material progress as a good thing? But material progress, as shown in medical and sanitary science, though it is inextricably bound up with every other kind of material progress, stands on ground which is not shaken by a single quiver of doubt. A decreased death-rate means that families are kept intact, that sorrow is held at bay, that society retains the services of useful men, that the capital which society has invested in a young man is not lost before dividends have been paid, that the time is coming when most human leaves will drop from the world tree in their autumn instead of being violently torn from it in their summer.

The Chicago newspaper puts the matter eloquently and pithily and we congratulate the great city of the west upon its progress.

OPENING OF THE MEDICAL SCHOOLS.

WINTER SESSION, 1905-06.

LONDON.

St. Bartholomew's Hospital.—The session will begin on Oct. 2nd. The annual dinner will take place on the same evening, when Mr. A. A. Bowlby, C.M.G., will preside. Lord Ludlow will be the guest of the evening.

Charing Cross Hospital.—The session will be opened on Monday, Oct. 2nd, by the annual prize distribution and an address to the students in the Anatomical Theatre of the Medical School, at 4 P.M., by Sir James Crichton-Browne, F.R.S. The dinner of the past and present students will take place on the evening of the same day.

St. George's Hospital.—The session will commence on Oct. 2nd, on which day, in the board room at 3 P.M., the prizes will be presented and an inaugural address delivered by Mr. R. Brudenell Carter, F.R.C.S. Eng. The annual dinner will take place at the Whitehall Rooms of the Hôtel Métropole on the same evening at 6.30 for 7 P.M. The chair will be taken by Mr. A. William West.

Guy's Hospital.—The session will be inaugurated on Oct. 2nd by the annual house dinner, which will take place in the College Hall. Dr. Pye-Smith will take the chair and in all probability Mr. Cosmo Bonsor will also be present.

King's College Hospital.—The session will commence on Oct. 3rd, when Professor T. Clifford Allbutt will distribute the prizes and give the opening address on Medical Education in London. The address will be given in the large theatre at King's College at 3 P.M. The annual dinner of old students of King's College Hospital will be held at 7 o'clock on the same evening at the Hotel Cecil, when Mr. Arthur A. Napper will preside. Tickets may be obtained from the honorary secretaries: Dr. Percy G. Lewis, 22, Manor-road, Folkestone; Major M. Percy Holt, D.S.O., R.A.M.C., King's College Hospital; Dr. J. F. W. Silk, 47, Devonshire-street, Portland-place, London, W.; Mr. Albert Carless, 10, Welbeck-street, London, W.; and Dr. John Charlton Briscoe, 110, Harley-street, London, W.

London Hospital.—The session will open on Oct. 2nd. On the same evening a dinner of the old students will be held at the Prince's Restaurant, Piccadilly, W., Sir Frederick Treves, G.C.V.O., in the chair.

St. Mary's Hospital.—The session will begin on Oct. 2nd, when an introductory address will be delivered by Dr. Wilfred Harris. The annual dinner of past and present students will be held at the Whitehall Rooms of the Hôtel Métropole on Oct. 3rd at 7 P.M., Dr. Carey Pearce Coombe being in the chair.

Middlesex Hospital.—The session will open on Oct. 2nd at 3 P.M., when Dr. R. A. Young will give an introductory address, after which the prizes gained during the previous year will be distributed by Sir Richard Douglas Powell, Bart., K.C.V.O., President of the Royal College of Physicians of London, and consulting surgeon to the hospital. The annual dinner of the past and present students and their friends will take place at the Trocadéro the same evening at 7 o'clock precisely, Dr. W. Essex Wynter in the chair.

St. Thomas's Hospital.—The session begins on Oct. 2nd. The annual students' dinner will be held at the Hotel Cecil on Sept. 30th at 7 for 7.30 P.M.

University College Hospital.—The session will open on Oct. 2nd at 4 P.M., when the Dean's report on the progress of the medical school will be read, after which an introductory lecture will be delivered by Professor H. R. Kenwood, M.B., D.P.H. An introductory address to new students will be given by the Principal at 1.40 P.M. on Tuesday, Oct. 10th.

Westminster Hospital.—The winter session will begin on Oct. 2nd. The annual dinner will take place on the opening day at the Trocadéro, Mr. Gustavus Hartridge in the chair. Tickets can be obtained from the secretaries of the dinner committee, Mr. Arthur H. Evans, 84, Harley-street, W.; Mr. H. Austin Smith, Westminster Hospital; and Mr. G. L. H. Johnston, Westminster Hospital.

London (Royal Free Hospital) School of Medicine for Women.—The session will begin on Oct. 2nd, when the introductory address will be delivered by Mrs. Bryant, D.Sc., Litt.D., at the medical school.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8216 births and 4807 deaths were registered during the week ending Sept. 9th. The annual rate of mortality in these towns, which had been 17·3 per 1000 in each of the three preceding weeks, declined to 16·1 per 1000 last week. In London the death-rate was 15·9 per 1000, while it averaged 16·1 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 6·7 in King's Norton, 7·6 in Handsworth (Staffs.), 8·2 in Halifax, 9·3 in Hornsey, 9·5 in Croydon, 9·9 in Walthamstow, and 10·4 in Barrow-in-Furness; the highest rates were 21·1 in Wigan, 21·2 in Stockport, 21·6 in Preston, 21·9 in Norwich, 22·3 in Salford, 24·0 in Merthyr Tydfil, and 24·6 in Burnley. The 4807 deaths in these towns last week included 1090 which were referred to the principal infectious diseases, against 1574, 1580, and 1432 in the three preceding weeks; of these 1090 deaths 897 resulted from diarrhœa, 55 from whooping-cough, 43 from measles, 33 from "fever" (principally enteric), 32 from scarlet fever, and 30 from diphtheria, but not any from small-pox. No death from any of these diseases was registered last week in Bournemouth or Coventry; among the other towns they caused the lowest death rates in Hornsey, Reading, Devonport, King's Norton, and Halifax, and the highest rates in Wolverhampton, Grimsby, Wigan, Bury, Salford, Burnley, and Preston. The greatest proportional mortality from measles occurred in Barrow-in-Furness and Rhondda; from whooping-cough in Leyton and Rochdale; from "fever" in Bootle; and from diarrhœa in Wolverhampton, Wigan, Bolton, Bury, Manchester, Salford, Burnley, Preston, and Rotherham. The mortality from scarlet fever, and from diphtheria showed no marked excess in any of the large towns. No death from small-pox was registered last week in any of the 76 towns and no case of small-pox remained under treatment in the Metropolitan Asylums Hospitals at the end of the week. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2982, against 2735, 2762, and 2873 at the end of the three preceding weeks; 443 new cases were admitted during the week, against 361, 343, and 427 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 117, 118 and 131 in the three preceding weeks, further rose to 133 last week, and were four above the number in the corresponding period of last year. The causes of 41, or 0·9 per cent, of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Bristol, Nottingham, Salford, Leeds, Newcastle-on-Tyne, and in 49 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, King's Norton, Liverpool, St. Helen's, Burnley, Blackburn, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 15·1, 14·0, and 14·8 per 1000 in the three preceding weeks, declined again to 14·0 per 1000 during the week ending Sept. 9th, and was 2 1 per 1000 below the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·4 in Greenock and 12·1 in Aberdeen to 14·6 in Paisley and 17·5 in Dundee. The 469 deaths in these towns last week included 41 which were referred to diarrhœa, nine to whooping-cough, seven to measles, six to "fever," four to diphtheria, and two to scarlet fever. In all, 69 deaths resulted from these principal infectious diseases last week, against 74, 91, and 96 in the three preceding weeks. These 69 deaths were equal to an annual rate of 2·1 per 1000, which was 1·5 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 44, 61, and 63 in the three preceding weeks, further declined again last week to 41, of which 17 occurred in Glasgow, 8 in Edinburgh, seven in Aberdeen, four in Paisley, and three in Dundee. The deaths from whooping-cough, which had been 16, 18, and 14, in the three preceding weeks, further declined to 9 last week, and included five in Glasgow and three in Edinburgh. The fatal cases of measles, which had been eight, nine, and seven in the three preceding weeks, were again seven last week, and included six in Glasgow. The deaths from "fever," which had been five, one, and four in the three preceding weeks, further rose again last week to six, of which five were registered in Glasgow, one of these being a case of typhus fever. The fatal cases of diphtheria, which had been six in the preceding week, declined to four last week, and included three in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 41, 44, and 53 in the three preceding weeks, further rose last week to 60, and were slightly in excess of the number in the corresponding period of last year. The causes of 15, or more than 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 19·9, 19·8, and 22·0 per 1000 in the three preceding weeks, declined again to 18·4 per 1000 during the week ending Sept. 9th. During the past four weeks the death-rate has averaged 20·0 per 1000, the rates during the same period being 16·7 in London and 13·8 in Edinburgh. The 134 deaths of persons belonging to Dublin registered during the week under notice were 26 below the number in the preceding week, and included 17 which were referred to the principal infectious diseases, against 21, 27, and 23 in the three preceding weeks; of these 12 resulted from diarrhœa, four from "fever," and one from diphtheria, but not any from small-pox, measles, scarlet fever, or whooping-cough. These 17 deaths were equal to an annual rate of 2·3 per 1000, the death-rates last week from the principal infectious diseases being 3·1 in London and 2·3 in Edinburgh. The fatal cases of diarrhœa, which had been 18, 25, and 19 in the three preceding weeks, further declined last week to 12. The fatal cases of "fever" numbered four last week, against one, none, and one in the three preceding weeks. The 134 deaths in Dublin last week included 35 of children under one year of age and 36 of persons aged 60 years and upwards; the deaths of infants slightly exceeded the number in the preceding week, while those of elderly persons showed a decline. Six inquest cases and three deaths from violence were registered; and 43, or nearly one third, of the deaths occurred in public institutions. The causes of six, or more than 4 per cent., of the deaths registered in Dublin last week were not certified.

VITAL STATISTICS OF LONDON DURING AUGUST, 1905.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·8 per 1000 of the population, estimated at 4,684,794 persons in the middle of the year. In the three preceding months the rates had been 6·2, 6·8, and 6·8 per 1000 respectively. The lowest rates last month were recorded in Paddington, St. Marylebone, Hampstead, Holborn, Greenwich, and Lewisham; and the highest rates in Fulham, Shoreditch, Bethnal Green, Stepney, Southwark, and Bermondsey. Only two cases of small-pox were notified last month, against 11, eight, and four in the three preceding months, and no small pox patients remained under treatment in the Metropolitan Asylums hospitals at the end of the month. Scarlet fever showed a slightly increased prevalence during last month; this disease was proportionally most prevalent in Fulham, Shoreditch, Bethnal Green, Stepney, Southwark, Bermondsey, and Wandsworth. The Metropolitan Asylums hospitals contained 2860 scarlet fever patients at the end of last month, against 2236, 2444, and 2527 at the end of the three preceding months; the weekly admissions averaged 344, against

ANALYSIS OF SICKNESS AND MORTALITY

AUGUST, 1905.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1905.	NOTIFIED CASES OF INFECTIOUS DISEASE.										DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,684,794	2	1930	492	—	177	3	23	435	—	3067	6·8	—	115	56	47	113	—	25	1	1760	2112	4·7	7260	16·2	236
West Districts.																										
Paddington	147,935	—	21	6	—	2	—	1	10	—	40	2·8	—	3	—	—	2	—	1	—	35	41	2·9	173	12·2	169
Kensington	180,083	—	36	7	—	6	2	—	11	—	62	3·6	—	8	3	—	3	—	1	—	45	60	3·5	230	13·3	228
Hammersmith	119,037	—	42	18	—	5	—	1	10	—	76	6·7	—	2	3	1	1	—	2	—	49	58	5·1	168	14·7	225
Fulham	167,210	—	119	25	—	10	—	4	6	—	164	10·9	—	3	2	—	1	—	—	—	106	112	7·4	261	16·6	327
Chelsea	74,496	—	16	5	—	1	—	1	7	—	30	4·2	—	—	2	1	2	—	—	—	16	21	2·9	94	13·2	162
City of Westminster	175,606	—	34	11	—	2	—	—	14	—	61	3·6	—	14	2	2	2	—	1	—	21	42	2·5	224	13·3	193
North Districts.																										
St. Marylebone	129,453	—	18	11	—	4	—	—	8	—	41	3·3	—	2	—	2	1	—	1	—	22	28	2·3	151	12·2	117
Hampstead	88,142	—	6	4	—	4	—	—	4	—	18	2·1	—	—	—		3	—	—	—	5	8	0·9	86	10·2	115
St. Pancras	236,185	—	118	35	—	12	1	1	26	—	193	8·5	—	3	1	2	8	—	—	—	75	89	3·9	370	16·3	265
Islington	342,904	—	114	27	—	13	—	3	26	—	183	5·6		13	2	3	5	—	2	—	87	112	3·4	465	14·1	208
Stoke Newington	62,828		13	1	—	2	—	—	3	—	19	3·8	—	1	—	—	—	—	—	—	21	22	4·3	71	14·0	292
Hackney	228,479	—	74	29	—	18	—	—	21	—	142	6·5		5	—	3	2	—	5	—	138	153	7·0	365	16·7	256
Central Districts.																										
Holborn	56,481	—	7	3	—	1	—	—	4	—	15	2·8	—	—	1	1	5	—	—	—	8	15	2·8	86	15·9	100
Finsbury	98,207	—	56	11	—	3	—	—	6	—	75	8·0	—	3	2	2	4	—	—	—	59	70	7·4	219	23·3	245
City of London	22,425	—	5	3	—	—	—	—	1	—	9	4·2	—	—	—	—	—	—	—	—	2	2	0·9	26	12·1	121
East Districts.																										
Shoreditch	116,665	—	92	11	—	3	—	1	9	—	116	10·4	—	3	4	1	5	—	—	—	66	79	7·1	258	23·1	287
Bethnal Green	130,401	—	82	26	—	6	—	—	15	—	129	10·3	—	4	3	2	5	—	1	—	62	77	6·2	256	20·5	234
Stepney	305,466	—	258	61	—	14	—	3	40	—	376	12·8	—	11	11	4	23	—	—	1	174	224	7·6	583	19·9	250
Poplar	170,280	—	82	31	—	12	—	—	22	—	147	9·0	—	2	2	2	7	—	2	—	113	128	7·8	346	21·2	312
South Districts.																										
Southwark	208,628	—	125	23	—	6	—	2	33	—	189	9·5	—	11	6	1	3	—	—	—	100	121	6·1	390	19·5	236
Bermondsey	129,006	—	74	17	—	5	—	2	18	—	116	9·4	—	4	—	2	5	—	1	—	73	85	6·9	266	23·1	260
Lambeth	313,046	—	74	29	—	6	—	3	28	—	140	4·7	—	4	1	6	4	—	2	—	107	124	4·1	500	16·7	232
Battersea	177,632	—	90	19	—	2	—	2	17	—	130	7·6	—	6	2	2	7	—	—	—	78	95	5·6	290	17·0	257
Wandsworth	265,392	—	166	25	—	13	—	1	28	—	223	8·8	—	4	4	3	8	—	2	—	92	113	4·4	396	15·6	273
Camberwell	271,240	1	86	17	—	16	—	—	40	—	160	6·2	—	2	3	3	2	—	2	—	80	92	3·5	354	13·6	212
Deptford	114,495	—	51	12	—	3	—	1	10	—	77	7·0	—	1	—	—	1	—	—	—	38	40	3·6	148	13·5	178
Greenwich	103,493	—	17	5	—	4	—	—	7	—	33	3·3	—	3	—	1	1	—	—	—	36	41	4·1	152	15·3	164
Lewisham	144,420	—	32	7	—	1	—	—	4	—	44	3·2	—	1	—	1	1	—	1	—	13	17	1·2	133	9·6	123
Woolwich	125,372	1	32	13	—	3	—	2	7	—	68	4·8	—	2	2	2	1	—	1	—	35	43	3·6	159	13·2	168
Port of London	--	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

302, 301, and 338 in the three preceding months. The prevalence of diphtheria showed a considerable decline from that recorded in the three preceding months; among the various metropolitan boroughs the greatest proportional prevalence of this disease occurred in Hammersmith, Fulham, St. Pancras, Bethnal Green, Stepney, and Poplar. The number of diphtheria patients under treatment in the Metropolitan Asylums hospitals, which had been 634, 715, and 785 at the end of the three preceding months, had declined to 665 at the end of last month; the weekly admissions averaged 83, against 89, 111, and 118 in the three preceding months. Enteric fever was rather more prevalent during August than it had been in the preceding month; the greatest proportional prevalence of this disease was recorded in Fulham, St. Pancras, Hackney, Poplar, Wandsworth, and Camberwell. There were 121 enteric fever patients in the Metropolitan Asylums hospitals at the end of last month, against 80, 78, and 94 at the end of the three preceding months; the weekly admissions averaged 24, against 14, 10, and 17 in the three preceding months. Erysipelas was proportionally most prevalent in Stepney, Poplar, Southwark, Bermondsey, and Camberwell. The 28 cases of puerperal fever notified during the month included four in Fulham, three each in Islington, Stepney, and Lambeth, and two each in Southwark, Bermondsey, Battersea, and Woolwich.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in public institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the five weeks ending Sept. 2nd the deaths of 7260 persons belonging to London were registered, equal to an annual rate of 16·2 per 1000; in the three preceding months the rates had been 14·0, 12·1, and 11·9 per 1000. The death-rates last month ranged from 9·6 in Lewisham, 10·2 in Hampstead, 12·1 in the City of London, and 12·2 in Paddington and in St. Marylebone, to 20·5 in Bethnal Green, 21·2 in Poplar, 23·1 in Shoreditch and in Bermondsey, and 23·3 in Finsbury. The 7260 deaths from all causes in London last month included 2112 which were referred to the principal infectious diseases; of these, 115 resulted from measles, 56 from scarlet fever, 47 from diphtheria, 112 from whooping-cough, 25 from enteric fever, one from ill-defined pyrexia, and 1756 from diarrhœa. The lowest death-rates from these diseases were recorded in the City of Westminster, St. Marylebone, Hampstead, the City of London, and Lewisham; and the highest rates in Fulham, Hackney, Finsbury, Shoreditch, Stepney, and Poplar. The 115 deaths from measles were 56 below the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Kensington, the City of Westminster, Islington, Stepney, Southwark, and Battersea. The 56 fatal cases of scarlet fever showed a slight decline from the corrected average number; among the various metropolitan boroughs the greatest proportional mortality from this disease was recorded in Hammersmith, Finsbury, Shoreditch, Bethnal Green, Stepney, and Southwark. The 47 deaths from diphtheria were only one-third of the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in St. Marylebone, Hackney, Finsbury, Bethnal Green, Bermondsey, Lambeth, and Woolwich. The 112 fatal cases of whooping-cough were 26 below the corrected average number; among the various metropolitan boroughs the highest death rates from this disease were registered in Holborn, Finsbury, Shoreditch, Stepney, and Poplar. The 26 deaths referred to "fever" were 31 fewer than the average number in the corresponding periods of the ten preceding years; of these 26 deaths, five occurred in Hackney, and two each in Hammersmith, Islington, Poplar, Lambeth, Wandsworth, and Camberwell. The 1756 fatal cases of diarrhœa were 28 below the corrected average number; this disease was proportionally most fatal in Fulham, Hackney, Finsbury, Shoreditch, Stepney, and Poplar. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was more than 7 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 236 per 1000. The lowest rates of infant mortality were recorded in Chelsea, St. Marylebone, Hampstead, Holborn, the City of London, and Lewisham; and the highest rates in Fulham, Stoke Newington, Hackney, Shoreditch, Poplar, Southwark, and Battersea.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS

Captain W. A. Woodside has arrived at York for duty in the Northern Command. Captain J. W. H. Houghton and Captain N. J. C. Rutherford have taken up duty in the London District. Lieutenant-Colonel H. W. Hubbard has been appointed Medical Officer, London recruiting area.

INDIAN MEDICAL SERVICE.

The following appointments of Principal Medical Officers have been made in India:—Peshawur Division: Colonel W. L. Chester. Rawul Pindi Division: Colonel B. M. Blennerhassett. Abbottabad and Sialkote Brigades: Colonel H. R. Whitehead. Lahore Division: Colonel H. J. W. Barrow. Sirhind and Jullundur Brigades: Colonel H. Hamilton. Mhow Division: Colonel W. S. Pratt. Jubbulpore and Jhansi Brigades: Colonel J. F. Williamson. Poona Division: Colonel F. W. Trevor. Aden Brigade: Colonel J. S. Wilkins; Lieutenant-Colonel W. G. H. Henderson to officiate, vice Colonel Wilkins on leave. Meerut Division: Colonel W. E. Saunders. Lucknow Division: Colonel G. D. N. Leake; Lieutenant-Colonel D. Wardrop to officiate, vice Colonel Leake on leave. Presidency and Assam Brigades: Colonel H. K. Mackay. Secunderabad Division: Colonel A F. Dobson. Bangalore and Southern Brigades: Colonel P. H. Benson. Burmah Division: Colonel T. J. H. Wilkins.

Captain H. A. F. Knapton has been appointed Deputy Sanitary Commissioner, Scinde Registration District. Captain R. E. Lloyd, 9th Bhopal Infantry, Allahabad, has been appointed Surgeon Naturalist, Marine Survey, Bombay.

IMPERIAL YEOMANRY.

The King's Colonials: Surgeon-Lieutenant C. J. Symonds to be Surgeon-Captain. Nottinghamshire (Sherwood Rangers): Surgeon-Lieutenant G. Thomson to be Surgeon-Captain.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Shropshire and Staffordshire: Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel J. P. Massingham to be Surgeon-Lieutenant-Colonel.

Rifle: 4th Volunteer Battalion the Royal Fusiliers (City of London Regiment): Henry Cecil Nicholls, to be Surgeon-Lieutenant. Surgeon-Lieutenant H. C. Nicholls is borne as Supernumerary whilst doing duty with the Bearer Company of the 1st London Volunteer Infantry Brigade. 1st Volunteer Battalion the Queen's Own (Royal West Kent Regiment): Surgeon-Captain C. Vise to be Surgeon-Major.

VOLUNTEER OFFICERS' DECORATION.

The Volunteer Officers' Decoration has been conferred on the undermentioned medical officers of the Volunteer Force:—*Northern Command*: Northern Command, Royal Army Medical Corps (Volunteers) Manchester Companies: Lieutenant Colonel and Honorary Colonel William Coates, C.B. *Eastern Command*: Harwich Bearer Company, Royal Army Medical Corps (Volunteers): Major and Honorary Lieutenant-Colonel Stanley Stenton Hoyland. East Surrey Bearer Company, Royal Army Medical Corps (Volunteers): Major and Honorary Lieutenant-Colonel John James de Zouche Marshall. *Welsh and Midland Command*: 2nd (Earl of Chester's) Volunteer Battalion the Cheshire Regiment: Supernumerary Surgeon-Captain Henry William King (Brigade Surgeon-Lieutenant-Colonel, Senior Medical Officer, Cheshire Volunteer Infantry Brigade).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Frederick H. Gervis, 17th Middlesex Volunteer Rifle Corps, to be Surgeon-Captain. Surgeon-Major Frederick W. Gibbon to be Surgeon-Lieutenant Colonel.

ROYAL ARMY MEDICAL COLLEGE

Major C. G. Spencer, R.A.M.C., has joined from the Curragh on appointment as Professor of Military Surgery in succession to Major-General W. F. Stevenson, C.B., retired. Lieutenant-Colonel Robert J. S. Simpson, C.M.G., R.A.M.C., to be Professor of Military Medicine, vice Lieutenant-Colonel K. McLeod, I.M.S., retired pay, who has vacated that appointment.

DEATHS IN THE SERVICES.

Surgeon-Major-General Philip Broke Smith, M.D. Edin., Army Medical Service (retired), and formerly of the 87th Royal Irish Fusiliers, on Sept. 4th, at Cheltenham, aged 71 years. He entered the service in September, 1857, as an assistant surgeon, was promoted surgeon in December, 1871, surgeon-major in March, 1873, deputy-surgeon-general in May, 1882, and surgeon-major-general in October, 1892, retiring in July, 1894.

THE TRAINING OF ORDERLIES IN THE ROYAL ARMY MEDICAL CORPS.

A conjoint report of the Advisory and Nursing Boards recommends that the non-commissioned officers and men of the Royal Army Corps should be divided into the following four sections:—

1. Nursing Section:—
    (a) All non-commissioned officers above the rank of sergeant.
    (b) Non-commissioned officers and orderlies of the first, second, and third class.
    (c) Compounders and operation-room attendants.
    (d) Skiagraphists and electrical attendants and masseurs.
2. officers not above the rank of sergeant.
    (b) Cooks—privates.
3. Clerks' Section:—
    (a) Clerks-non-commissioned officers not above the rank of sergeant.
    (b) Clerks—privates.
4. General Duty Section:—
    (a) Non-commissioned officers not above the rank of sergeant and men as follows: (b) for sanitation; (c) for pathological and laboratory attendants; (d) pack store and steward's store; (e) carpenters; (f) gardeners; (g) servants to officers; (h) postmen; (i) mortuary attendants; and (j) handymen generally.

It is further recommended that when eligible men enlist into, or are transferred to, the Royal Army Medical Corps their advancement should depend mainly upon efficiency in the nursing section. For selected non-commissioned officers and men for nursing, 6*d*. per day over and above corps pay is suggested, together with a distinction in their dress. It is advised that instead of a recruit who has passed through a course of instruction at Aldershot, in the training school and in the Cambridge Hospital, being transferred to other hospitals as is the case now, the recruit for the nursing section should be transferred to specially selected hospitals, and that he should not be regarded as a proficient nurse until he has undergone further courses in such hospitals. Those recommended are the Royal Victoria, Herbert, Cambridge, and Connaught Hospitals; the military hospitals at Devonport, Colchester, Shorncliffe, Chatham, and York; the Royal Infirmary, Dublin; the military hospitals at the Curragh, London, Malta, Gibraltar, and Egypt. When the man joins any such hospital his training, it is recommended, should be placed in the hands of the matron, and that this training should not be interfered with by other duties. Efforts are to be made to encourage and enable men to pass from one class of orderly to another. Men of the nursing section must not be called on to do menial hospital work, presumably sweeping and scrubbing floors, for which the general duty section men are available.

The organisation and training of the non-commissioned officers and men of the Royal Army Medical Corps should increase their efficiency and usefulness in connexion with their hospital and other duties if the changes and reforms recommended are adopted. They seem to be quite in the right direction and will, we hope, stand the test of practice.

THE LATE WAR IN THE FAR EAST.

An armistice is in preparation and will be soon settled, which will, it is trusted, put an end to the skirmishing affrays which have been reported as having occurred in Manchuria since peace was concluded. According to recent intelligence received from Tokio through Reuter's special service we learn that the *Official Gazette* publishes a statement, based upon medical evidence, as to the use of "dum-dum" bullets by the Russians in the fighting at Vladimirof and in other engagements in Sakhalin. It also records alleged abuses of the Red Cross on the part of the Russians. We may remark, however, that as a rule we attach but little importance to charges of this kind, which, although made no doubt in good faith, we are glad to say usually turn out to be erroneous or incapable of being substantiated on further inquiry.

The *Russki Invalid* has a report of General Baron Bilderling on the losses in the 17th Russian Army Corps during the year following its arrival in Manchuria. The total numbers compelled to leave the ranks were 445 officers and 18,128 men, or more than half of the total effective. Of the officers nearly all the commanders of regiments and the greater part of those of lower rank have been either killed, wounded, or placed upon the sick list. Many officers and men returned to the ranks after having been wounded, and were wounded a second or a third time, or oftener. The heaviest losses were suffered by the infantry, which lost 412 officers, or 60 per cent., and 17,587 men, or more than 55 per cent. The engineers lost 37 men, or 4 per cent. The artillery lost 30 officers, or 25 per cent., and 299 men, or 7 per cent. The second independent brigade of cavalry lost 13 officers, or 16 per cent., and 248 men, or 14 per cent. All these losses, however, had been made good by reinforcements from Russia.

Lord Methuen has notified, in the Eastern Command, that courses of instruction will be held annually, commencing on the 1st of January, April, July, and October, at the Royal Herbert Hospital, Woolwich, and the Military Hospitals at Shorncliffe, Chatham, and Colchester, for medical officers of Imperial Yeomanry and Volunteers who desire to qualify for promotion by being attached for 14 days to a military hospital, as laid down in the Yeomanry and Volunteer Regulations.

Fleet Surgeon J. Lloyd Thomas, R.N., of the *Excellent*, has been selected to represent the medical department of the Royal Navy at the Military Medical Congress to be held at Detroit at the end of this month. The medical department of the Army will be represented by Colonel W. J. R. Rainsford, C.I.E., R.A.M.C., Principal Medical Officer, Bermuda.

Captain L. N. Lloyd, R.A.M.C., has been selected to succeed Major T. W. Gibbard as adjutant of the London Volunteer Companies of the Royal Army Medical Corps.

Correspondence.

"Audi alteram partem."

THE LANGUAGE OF THE PYGMIES.

To the Editors of THE LANCET.

SIRS,—I do not think (as your readers might be led to suppose by a phrase in Dr. Albert Churchward's letter of Sept. 2nd)[1] that I ever made a dogmatic assertion that the pygmies of the Congo Forest had no special language of their own. I have only noted or stated from time to time that the various researches made into the question by Schweinfurth, de Compiègne, Stanley, Wolff, Von Wissmann, the Italian anthropologists who made a careful investigation of Akka pygmies brought to Italy in the "eighties" of the last century, and myself (who have examined locally pygmies of the Ituri Province and Mboga) have not revealed any special pygmy language, any form of speech peculiar to the pygmies in the same way that the Bushman language is peculiar to the Bushmen. But I should be one of the first to admit that our researches into this most interesting question have only as yet touched the fringe of the subject. Some missionary of science ought, if possible, to live for about a year amongst the pygmies in some part of the Congo Forest before we can be quite certain that they possess no peculiar language of their own.

All the authorities I have enumerated above have shown, consciously or unconsciously, up to the present time that the pygmies whom they examined spoke a language which was shared by adjoining negroes of ordinary stature and often markedly superior physical development. Schweinfurth's Akkas (at any rate those who were examined in Italy) spoke Mangbettu, the language of the Mangbettu people, who in their physical type are tall negroes suggesting more than a dash of ancient Caucasian intermixture. The Obongo of Du Chaillu and the Marquis de Compiègne, in the few words recorded of their speech, used a degraded Bantu dialect; and this is also the case with all the records of pygmy speech obtained from the more southern parts of the great Congo

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[1] THE LANCET, Sept. 9th, 1905, p. 784.

Forest by Stanley, Wolff, &c., and also by myself in the north-east in part of the Ituri Province.[2]

When I first examined the pygmies from the central or northern part of the Ituri Province I thought I had lit upon an independent type of language in the dialect which I wrote down; but soon afterwards I found it to be almost identical with the language of the tall forest negroes of the Mbuba tribe. Comparing this Mbuba language, however, with vocabularies of Momvu, spoken further to the north, I found that Mbuba and Momvu were almost identical. This is the language which is spoken by the Congo pygmies now in London, brought over by Colonel Harrison, as anyone can easily ascertain by comparing their speech with my printed vocabularies in "The Uganda Protectorate." I visited these pygmies several times this summer in London. Not only did they recognise all the words in their language which I pronounced with care, but in all their answers to my questions it was clear that the dialect they spoke was identical, with the exception of a few words, with what I had transcribed close to their own homes in 1900. Moreover, when they talk amongst themselves they make use of the same speech. It is, of course, quite possible they may have an esoteric language, really their own; but this at any rate has never been indicated as yet by any evidence.

There is one interesting feature, however, to be noted about the pygmies' use of the Mbuba language. Their pronunciation of it varies considerably between individuals. Some pygmies almost entirely avoid the pronunciation of K, supplying its place by a hiatus or gasp. This peculiarity does not seem to be characteristic of divisions of the tribe but of individuals and was observable amongst those in London as well as amongst the pygmies whom I encountered myself in and around the north eastern corner of the Congo Forest. Of course the Mbuba language might be the original pygmy speech; but in that case they have impressed it on perhaps 100,000 forest-dwelling negroes of ordinary negro physical type, such as the Momvu, the Mbuba, &c.

The Mbuba tongue is a polysyllabic language with a Bantu phonology and a grammar more akin to Madi and to the Nilotic family.

The Lendu people to the west of Lake Albert have a very peculiar language which, like the Momvu, has no known congeners, but I have never heard this used by pure-blooded pygmies. On the other hand, the Lendu, though they offer a great [illegible] types, present among themselves occasic[illegible]rkedly resembling the pygmies in appearance. I believe that this submerged pygmy type may be traced as far north as the Bongo country of the Sudan (where it is known as the "Red" Bongo), just as the pygmy physical type crops up in a slightly altered form in parts of the Uganda Protectorate to about as far east as the slopes of Mount Elgon, one of the distinguishing features of this type being the unmistakeably pygmy nose,[3] which is so very unlike the nose of the Bushman or Hottentot. The pygmy may be the oldest *living* African race and in the hurly-burly of 100,000 years or so may have lost the distinctive speech which it had, perhaps, developed by the time it reached Africa, though a good deal of this original African tongue may permeate the structure of other groups of more successful language families. In their present condition, in fact, the pygmies may forecast the state of negro Africa 200 or 300 years hence, in which it is quite possible that all negro languages except a Bantu jargon may have died out, their places being taken by English, French, Portuguese, Arabic, Italian, Spanish, German, and Dutch. But we know so little as yet about the whole question of the pygmies and their relations with other African types that no one has a right to be dogmatic on any subject connected with them.

I am, Sirs, yours faithfully,

Regent's Park, N.W., Sept. 11th, 1905. H. H. JOHNSTON.

THE CONDITION OF THE BLOOD VESSELS DURING SHOCK.

To the Editors of THE LANCET.

SIRS,—I have read Mr. John D. Malcolm's paper on this subject[4] with much interest; it is one which essentially invites criticism. A complete criticism of his paper and of the hypothesis which he there puts forward to explain the phenomena of shock would oblige me to trespass unduly upon your valuable space and I shall therefore confine myself to a few points only.

Mr. Malcolm says: "If the vaso-motor centre is exhausted in shock some explanation is required of the fact that the whole surface of the body is not suffused with blood in that condition." I think the explanation is that flushing of the skin with blood only occurs as the result of dilatation of the superficial vessels *when the general blood pressure is still high:* if the general blood pressure is low and the dilatation of the superficial vessels is merely part of a general relaxation of the vascular system we should not expect to find flushing of the skin with blood. Moreover, in shock the exhaustion of the vaso-motor centres is not a sudden process but takes place slowly, the vessels in the splanchnic area first becoming dilated. And in the early stages of shock contraction of the peripheral arterioles occurs to compensate, if possible, for the fall in blood pressure brought about by the dilatation of the splanchnic blood vessels. Full dilatation of all the arterioles does not occur until the vaso motor centres are completely exhausted and death is imminent.

I do not think that either Dr. G. W. Crile or myself ever maintained that there is a sudden change from extreme contraction of the blood vessels to complete relaxation when shock occurs. On the other hand, I believe the process to be extremely gradual. Complete relaxation of all the vessels controlled by the vaso-motor centres produces a fall in blood pressure which is at once fatal unless the blood pressure can be quickly raised again. The nearest approach to such a condition is seen in a patient suffering from shock who becomes suddenly collapsed as the result of being inadvertently raised in bed. Mr. Malcolm says: "I was led to believe that the phenomena of shock are due to a contraction of the arteries by noting that evidence of anything like a dilatation of the vessels generally, or in exposed parts of the splanchnic area alone, is usually wanting during life even in conditions of the most severe shock produced by abdominal operations." I cannot understand this statement, as the engorgement of the splanchnic vessels with blood during severe shock is, I should have thought, beyond dispute. I have certainly repeatedly observed it both in patients during abdominal operations and in animals during experiments. And even supposing that contraction of the vessels and not dilatation is the cause of shock, where, then, does the blood go to? As the blood is incompressible it must go somewhere.

The chief argument, however, against Mr. Malcolm's theory is that adrenalin and other drugs which cause contraction of the peripheral arterioles are beneficial in cases of shock. If contraction of the vessels were the cause of shock then adrenalin instead of benefiting the condition should cause it.—I am, Sirs, yours faithfully,

Sept. 11th, 1905. P. LOCKHART MUMMERY.

INSPECTION OF NURSING HOMES.

To the Editors of THE LANCET.

SIRS,—It is to be hoped that the proposal to obtain registration and supervision of nursing institutions will not be relegated to a distant future through lack of the necessary advocacy in the medical press. Hospitals are protected by their appeals for *public* support, which entails a wholesome spirit of criticism, duly leavening the munificence of the charitable. State infirmaries, workhouses, and similar places for the sick are inspected as well as run out of the taxes and rates. Private establishments, however, escape any *expert* inspection, although they are attracting and carrying out an increasing amount of serious work.

It is inevitable that the struggling inseparable from keen competition, notwithstanding in many cases the best intentions, will occasion untold mischief in a certain proportion of so called nursing homes at the expense of patients who have accepted positions in which they are no longer able to decide for themselves what is the best course for them to follow unless Government steps in with a watchful care of the interests of the sick and an eye by no means unfriendly on the management.

All precedent establishes that institutions found to be honest and successful in the work they carry out only gain in popularity and prestige by becoming responsible to the State for their efficiency. Experience of practice, private as well as hospital, should be an indispensable qualification of the gentlemen appointed inspectors, who should be required to give their whole time to the new duties. A few would suffice for Great Britain and Ireland.

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[2] Where the pygmies, like the surrounding forest negroes, speak Kibira, a broken-down Bantu speech allied to Manyema.

[3] Very broad and depressed, the extended alæ being nearly on a level with the tips and bridge of the nose.

[4] THE LANCET, August 26th, 1905, p. 573.

I am, Sirs, yours faithfully,
Liverpool, Sept. 9th, 1905. GLYNN WHITTLE, M.D. Cantab.

THE VALUE OF LEAD AS AN EXTERNAL APPLICATION IN INFLAMMATION.

To the Editors of THE LANCET.

SIRS,—When reading the accounts given in modern surgical text-books of the various treatments of inflammation I have been struck by the fact that I find no mention of the use of lead as a local application. To those who are not in the habit of thus using lead lotion it will, I think, be a surprise to find how this application appears to modify many inflammatory processes. I am in the habit of applying lead lotion (I generally employ it tepid) on lint covered over with oiled skin to lacerated fingers and other lacerated and bruised wounds, to inflamed joints after injury, to inflamed bursæ patellæ, and to large bruised surfaces, particularly if suppuration is feared or threatened, and there is no doubt that the healing and absorption proceed as though the inflammatory action was in some way checked by the application. When there is evidence of inflammation spreading upwards from a wound hot fomentations to the wounded surface and lead applications to the reddened surface of the skin I invariably find markedly assist in lessening the spreading inflammation. It may be not unlikely that this remedy is frequently made use of, but our text-books of the present day are so full of the skilful discoveries of modern pathology and bacteriology that there is perhaps a danger of some of the older remedies being passed by unless their method of action can be explained and made to fit in with present-day explanations founded upon bacteriological research.

In view of these researches I do not pretend to suggest how lead acts when applied locally in these cases, but it appears safe to assume that in some way it assists the tissues in resisting the onslaught of whatever may have caused the inflammatory process. The recent knowledge which the study of bacteriology has afforded has so centred attention upon the important action of bacteria and their effects upon the tissues, and the supreme importance of combating these, that the possible importance of efforts being made to assist the invaded tissues to exert to their full extent the undoubted power which they possess to resist and to overcome the inroads made upon their defences has, perhaps, been thrown into the background. It is purely upon these defences and upon the power and opportunity which the tissues may possess for exerting to the full their defensive and protecting action that the success or otherwise of their defensive warfare against invasion must depend. The object of my communication is to draw attention to what appears to me to be the importance of paying attention to the aiding and strengthening of this defensive action, which is perhaps apt to be neglected in the modern rush to prevent or to destroy the hostile invaders and it certainly seems to me that in lead applications we possess one method which is at any rate worthy of mention and of sufficient value to make us pause to consider whether it is not worth while to pay some little more attention to the possibilities of measures which may assist the defensive powers with which nature has provided the tissues and which, all important as they are, appear to me to have received in modern investigation less prominence than they deserve.

I am, Sirs, yours faithfully,
H. POOLE BERRY, M.B. Lond., M.R.C.S. Eng.,
Sept. 6th, 1905. Surgeon to the Grantham Hospital.

NORMAN KERR LECTURESHIP.

To the Editors of THE LANCET.

SIRS,—Twenty-one years ago the late Dr. Norman Kerr founded the Society for the Study of Inebriety. It has been thought by many of his old friends that the coming of age of the society would afford a fitting opportunity to perpetuate his memory. The council have therefore decided to found in connexion with the society and in recognition of his enduring work in relation to the study of inebriety a "Norman Kerr" lectureship. It is believed that many well-known persons would be ready to deliver such a lecture before the society, both in honour of the founder thereof and for the furtherance of the investigations that he so ably inaugurated. It has also been suggested that a sum of £300 should be raised to form a fund, the interest of which should be available for the purposes of the lectureship. Towards this amount nearly £100 have already been promised. We feel sure that these proposals will meet with the approval of all the members and associates of the society and with others who knew Dr. Norman Kerr. All contributions towards the special "Norman Kerr Lectureship Fund" should be sent to the honorary treasurer of the same, Mr. McAdam Eccles, 124, Harley-street, W.—We are, Sirs, yours faithfully,

HARRY CAMPBELL,
President.
W. MCADAM ECCLES.
Honorary Treasurer of Special Fund.
T. N. KELYNACK,
Sept. 11th, 1905. Honorary Secretary.

RAINFALL IN AUGUST.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Sept. 9th, p. 798, one of your Irish correspondents states that it rained continually on August 25th and 26th for 39 hours in the *north of Ireland*, with a record of 2·95 inches, and that "the total rainfall in *Ulster* for the month was 7·82 inches." As it is not indicated what part of Ulster he writes from your readers might assume the abnormal rainfall to be general throughout that province. It was not so, for here on the north-west coast of Donegal, Ulster, the total rainfall for August was 5·17 inches; for the last ten days of August (four rainless) the total rainfall was only 0·96 inch. In August, 1904, the record was 5·03 inches; in 1903, 6·27 inches.

I am, Sirs, yours faithfully,
J. J. MACGRATH.
St. Helens, Dunfanaghy, Co. Donegal, Sept. 9th, 1905.

THE SALE OR PURCHASE OF A MEDICAL PRACTICE.

To the Editors of THE LANCET.

SIRS,—May I be permitted to offer a few remarks on the above subject based on an experience of 30 years devoted solely to that particular branch of business and during which time a very large percentage of the transfers in England have passed through my hands? Without wishing to question your contributor's knowledge of the law I am sorry to find there are several suggestions as to clauses in agreement not at all in accord with present-day custom. Cut and dried forms from text-books of many years ago may be all very well in the transfer of a commercial business but with the many peculiarities incident to the transfer of medical practices an agreement has to be prepared adapted to the requirement of each particular case and constant variations from stock forms are daily arising. I will deal with a few of the more important points in your contributor's article.

First, as to the sale or lease of vendor's house. In the sale of a medical practice the transfer of vendor's house is a most essential part of the goodwill and on no account should a purchaser sign any document without this being secured to him in the agreement for transfer.

Clause 2.—Your contributor assumes that appointments are not to be included in transfer. In probably 99 cases in a 100 *all* appointments are intended to be included, seeing they usually form a very valuable portion of the practice and a special clause is inserted providing for the vendor doing his best to transfer them, with a proviso for a reduction in price in event of failure. The word *customers* is never employed in the transfer deed of a medical practice.

Clause 3.—Covenant to introduce purchaser. Your contributor says: "Any debts due to the practice collected after date of transfer shall belong to the purchaser." This is an erroneous statement. All book debts due to vendor up to day of transfer belong to him and no matter when paid, whether to him or his successor, they are the sole property of vendor. In many cases a year's income or more is on the books at time of transfer and it would be manifestly absurd that these should be given away to the purchaser who has had no part in earning them.

Clause 4.—Outgoings during introduction will not, as a rule, include rent of house. In a long introduction the purchaser usually takes separate rooms or a house and each party pays their own rent and taxes, &c., with possibly a provision for a small payment to vendor for joint use of surgery premises. If purchaser lives in same house it is usually arranged that purchaser pays a fixed sum per week for board and lodging.

Clause 5.—The deduction for appointments not transferred is at the same rate as purchase price and not necessarily two years' value ; for instance, if practice is bought at one year's purchase appointments would be allowed at same rate.

Clause 6.—Restrictive covenant. This is perhaps the most vital point of any and your contributor hardly realises its full import. First of all, a ten-mile limit in a London practice is an unheard of and utterly unreasonable one. Many a man now in Harley-street or thereabouts began his career in, perhaps, Mile End or Southwark and sold out on purpose to move West. Is he to be shut out of all practice for ten miles round? From one to three miles is ample in any London practice and is the limit agreed on in 99 cases out of 100. Secondly, the time must on no account be limited. When a vendor sells he sells for all time and cannot expect to be able to return in ten years or at any time. To quote an instance, A sells his practice to B. At the end of, say, ten years B dies or wishes to sell with a *ten-years' restriction only. B or his representatives* cannot possibly do so, for with the possibility of A returning or recommending someone else to do so the goodwill is valueless to anyone. It is almost an invariable custom to make the covenant a *perpetual* one and manifestly this is perfectly fair and reasonable and has, moreover, been upheld in the law courts as such.

Clause 7.—In the absence of any special agreement purchaser is *not* at liberty to collect the vendor's debts, but generally he consents to receive them on behalf of vendor and duly account for them.

Clause 8.—I presume purchaser is intended for the word "vendor" in third line, otherwise the clause is unintelligible.

Clause 10.—Drugs and fixtures are usually an extra and purchased at a valuation or an agreed sum.

I can substantiate all my statements by reference to draft assignments prepared by my solicitors for such transfers.

I am, Sirs, yours faithfully,
Sept. 11th, 1905. PERCIVAL TURNER.

SANITATION AT ST. MORITZ.

To the Editors of THE LANCET.

SIRS,—In your issue of August 19th Dr. T. W. Parkinson has drawn attention to the "faulty drainage and consequent bad smells" that his patients have complained of. He furthermore alleges that the local authorities display absolute indifference to these complaints. The charge is an indefinite one and Dr. Parkinson's hope that something in the nature of a reply should be sent to the medical press is rather difficult to fulfil. At the same time we must admit that, chiefly owing to the introduction of the railway to the village last winter, certain accidental defects occurred that were difficult to contend with at that moment when the ground was deeply frozen. It is true, moreover, that in certain portions there were bad smells and that the visitors complained of them.

We maintain, however, that the main drainage was sound and that the public health was in no way endangered. The sanitary council (*Sanitätsrath*) of every Swiss canton publishes its statistics periodically. We also forward you these which we would like to point out were in print long before Dr. Parkinson's letter. Perhaps it may serve as a further assurance to him and all those other physicians who send patients to this winter resort to know that the chief main drainage of the village is now carried right out into the river Inn, whence it issues from the lake of St. Moritz with torrential force. All this and much other important sanitary work was accomplished during the spring under the personal supervision of a well-known English sanitary engineer who, moreover, thoroughly opened up and relaid the defective drains referred to. Therefore, the local authorities did everything that was possible in their power.

With regard to the state of the public health during this summer we can positively assert that St. Moritz has never been in a more sanitary condition and has been free from all those zymotic maladies that are associated with inefficient drainage.—We are, Sirs, yours faithfully,

J. FRANK HOLLAND, M.D. R.U.I.,
British Consul.
PAUL GREDIG, M.D.,
President of the Society of Practising Physicians of the Upper Engadine.
British Consulate, St. Moritz, Sept. 11th, 1905.

WEST HAM AND EAST LONDON HOSPITAL.

To the Editors of THE LANCET.

SIRS,—At the suggestion of the Duchess of Marlborough a bazaar will be held at the Stratford Town Hall on Oct. 26th, 27th, and 28th, 1905, in aid of the extension fund of the above hospital. The committee of the hospital has acquired at considerable cost the high school buildings adjoining the hospital premises and upwards of £20,000 are required for the equipment of these as an addition to the hospital and the equipment of a nurses' home. The nurses at present sleep in the hospital premises and it is considered by competent authorities most important that they should have a separate residence. It is extremely urgent that a sum *of money should be raised this year* in order that the committee may avail itself of the very handsome offer of the Annie Zunz trustees. These gentlemen have offered that if during the current year the committee raises £7000 towards the above-mentioned object they will augment this amount from funds at their disposal for charitable purposes by the sum of £3000, making £10,000 in all. Up to the present only a small portion of the necessary funds has been acquired and the committee is earnestly hoping to make £2000 or £3000 by the bazaar. Help in money or in kind should be sent to the honorary secretary, P. J. S. Nicoll, Esq., M.D., 2, Romford-road, Stratford, E., or to the honorary treasurer, George Hay, Esq., J.P., Stratford, E., or to the secretary at the hospital, and it should be mentioned whether it is sent for the bazaar fund or (if preferred) for the maintenance of the hospital. I am, Sirs, yours faithfully,

THOS. ALEX. COOK,
Chairman of the General Committee.
Bow, London, E., Sept. 12th, 1905.

THE TECHNIQUE OF THE EXAMINATION OF THE SPUTUM FOR TUBERCLE BACILLI.

To the Editors of THE LANCET.

SIRS,—With reference to the correspondence in your columns upon this subject the following method will, I believe, be found both rapid and effective. Take a rather finely pointed dissecting forceps, the points of which have been anointed with vaseline, two ordinary photographer's mounted steel pins, a clean cover-slip, and a spirit lamp. With the two pins (by crossing and drawing them across each other, thus converting the X into a V) cut out three minute pieces of sputum *selected* from different parts of the sample; then with the pins in V formation lift the selected morsels on to the cover-slip, gently touching the sides of the glass bowl with them in transit. This manœuvre gets rid of superfluous moisture. Now gently seize the cover-slip by one of its corners between the blades of the anointed forceps and hold it over the spirit lamp at a distance. Practice soon appreciates. With one of the pins move the little masses of sputum over the heated upper surface of the cover-slip. These then leave a little trail behind them not unlike that left by a slug and very rapidly become entirely reduced to their leavings, which are deposited in an admirably thin fashion provided the temperature of the glass is right.

I believe this is the very best and quickest way of making sputum films. Fix by passing through the flame. Now allow four drops of carbol fuchsin to fall successively upon the film from a stoppered bottle (by loosening the stopper and tilting). These heap themselves up in a rather alarming fashion, but by virtue of something of the nature of capillarity do not run over. The advantage of having the points of the forceps vaselined is also appreciated at this point, as when well greased they refuse to act as conduits and the application of this fat is at the same time finger saving, temper saving, and floor saving. Heat over the lamp till steam arises, walk one yard to a gently running tap; wash; pour on four drops of nitric acid (1 in 4); wash again (repeat nitric acid if necessary); drop on freshly made methyl blue solution; wash; dry over flame; mount and examine (under oil immersion lens which in my experience is much more quickly adjusted than the one-eighth inch objective). My procedure takes four and a half minutes by the clock. I am, Sirs, yours faithfully,

Sept. 11th, 1905. E. T.

PS.—I personally consider it undesirable ever to utter the diagnosis of pulmonary tuberculosis until after I have been able to demonstrate the presence of tubercle bacilli in the sputum.

THE FIRST INTERNATIONAL CONGRESS OF ANATOMY.

(FROM A CORRESPONDENT.)

SWITZERLAND has given the world one of its brightest object lessons in federation and no more appropriate centre than Geneva could have been chosen for the meeting of the First International Federative Congress of Anatomists—even apart from the fact that the earliest and most enthusiastic advocacy of such a congress came from the men of science of that centre itself. While hitherto the progress of anatomical science has been fostered by five great societies, one each in Great Britain and Ireland, Germany, France and Switzerland, America, and Italy, and while the doings of each have become well known to all through the agency of their published transactions, these societies have never actually touched hands until the early days of last month, when a meeting in the first federative congress became an accomplished fact.

"Geneva," said Professor Eternod to the members of the congress in his opening address as President "is justly proud of inscribing in her book of gold the memory of your stay within her walls and to witness this federation, unique of its kind. Geneva, an ancient centre of science and light; Geneva, the old impregnable rampart of liberty of conscience and thought; Geneva, an ancient and proud republic which freely gave itself to the Helvetian Confederation; Geneva, that saw the birth of another federation eminently international and humanitarian—the International Society of the Red Cross,—Geneva, I say, was peculiarly well fitted to see the birth in its midst of the first international federation of anatomists."

The members of the congress numbered over 300, including a few ladies, and representing poles of medical science so far asunder as Sydney and Cairo in the south, Upsala in the north, Kiew in the east, and Baltimore and Montreal in the west. Between 20 and 30 members of the Anatomical Society of Great Britain and Ireland were included, with Professor J. Symington of Belfast as President, Dr. T. H. Bryce (Glasgow) as vice-president, and Professor C. Addison, Charing Cross Hospital, London, as secretary.

Quite apart from its inspiring traditions it would be difficult to imagine any place more delightfully situated for a summer vacation congress than Geneva. Its broad harbour, stately buildings, imposing streets and bridges circle, like a crown, the western end of Lake Leman, the broad Rhone sweeps through beneath its many arches and the noble towers of St. Pierre form striking pinnacles among the roofs of the city. Northward the eye is carried over the wide, ever-changing expanse of the lake to the beautiful vine-clad hills above Lausanne and from village to village clustering by its blue waters to its farthest end where the giant Dent-du-Midi towers over the Castle of Chillon. Flanking the city boundaries on the south is La Grande Salève, a mighty mountain barrier of rock which the setting sun burnishes nightly into a mass of bronze, and away over the pine-crested tops of the nearer hills are seen the snowy summits of Mont Blanc and its long range of rival peaks. The city boasts an excellent service of electric trams with lines conveniently planned for transporting one with ease from point to point; awning-covered, light, and noiseless cabs abound in plenty and a frequent service of swift motor launches skim across and around the blue waters of the harbour all day long. The hotels are roomy and spacious, their management aiming at all points to alleviate the burning heat of an August day. There are museums and galleries of science, archæology, industry, and art to occupy odd hours by day and numerous splendidly appointed cafés, each with its competent little string orchestra in the open air, add comfort and enjoyment to the cool of the evening hours.

The business of the congress was divided into two daily sessions, the forenoons from 8.30 to noon being devoted to the reading of original papers and discussion thereon in the Aula of the University—a stately spacious building in the centre of the city—where, too, all the offices of the congress were located. In the afternoons from 2 till 4 the congress met in the School of Medicine—a handsome modern block of buildings situated on the outskirts of the city near to the junction of the rivers Arve and Rhone. When it is stated that nearly 90 original papers were read in the course of four morning sessions some idea of the activity of the congressists may be formed. Each speaker was allowed ten minutes and in this short time he was bound to expound results which must in many cases have represented years of patient industrious research. The President was armed with an Alpine cow-bell, a bland enough instrument when heard in open air on hilly pastures but most imperative and effective when swung in the face of an impetuous man of science struggling with the middle stages of his exposition. A few minutes were allowed to any speaker who wished to discuss the paper and then the original essayist had a few minutes more in which to reply. All the papers communicated are to be published in due course in the records of the congress and the attitude of different speakers was interesting in consequence. While our British representatives contented themselves with giving a brief summary of their results, preferring to demonstrate their points at leisure in the afternoon meetings, which were of a less formal nature, and abstaining from the mental stress of trying to cover a wide field in the short time allotted, our foreign *confrères*, on the other hand, seemed determined to seize every available moment. Sometimes, in fact, the expositor had begun his discourse even as he was mounting the steps of the rostrum and only finished when convinced that the piercing tones of the president's cow bell must beat him down at last.

Most of the papers were non-controversial and so business proceeded apace, but there were some very lively discussions. Often, the moment the essayist finished, a sea of upstretched hands and snapping fingers faced the president and then the subject under discussion would be bandied about from tongue to tongue and from language to language with a lightning rapidity that would baffle any but the most experienced linguist. Occasionally, too, when the discussion had to be curtailed by the rules of debate, the critic would literally buttonhole his man as he stood down from the rostrum, so that several subordinate discussions were frequently proceeding in odd corners of the Aula. It must be confessed that in this section of the work of the congress the English-speaking star seldom appeared in the firmament. In fact, compared with the linguistic facility of our continental comrades we were a somewhat sorry lot: excellent scholars and adept *followers* of the spoken and written word there were, but *doers* thereof—scarcely ever. This we owe, no doubt, to our insularity. We had one Trojan in the game, it is true—one who has more than once worthily upheld the honour of Great Britain by his knowledge of tongues, but even he seemed embarrassed in this Babel.

Undoubtedly the main success of the congress was due to the afternoon meetings in the School of Medicine which were given up to informal demonstrations. The demonstrators were grouped around tables in the large roomy laboratories of the school and the moving crowd gathered in little knots round each in turn, sometimes round a cluster of microscopic objects, at others round some interesting piece of dissection. Here the English-speaking section scored well; the matter was at hand, and the finger was there to clinch a point when the brain struggled with the errant word. One of our colonial representatives was particularly conspicuous as, day by day, enthusiastic and hot but never apparently tired, he unravelled a complicated series of observations to each new batch of inquirers. Here, too, frequent interchanges of international courtesy were seen; it was uplifting often to see how one venerable and amiable man of science—Waldeyer, a prince in the German army of science—interested himself in the work of the younger men, at times patting them on the back with encouraging vehemence. There were hard knocks given and taken, too, in this part of the work, one battle royal between Spain and Italy eclipsing all else in its heat. Donaggio of Rome, young and impulsive, was demonstrating the lessons to be learned from certain tiny strips of nerve tissue in support of views which seemed to upset the accepted theories of Cajal of Madrid, a veteran, but fiery, too, as it proved. They met, with Donaggio's microscopes between them, and were soon found in active disagreement; voices rose, faces grew high in colour, emphatic arms flew round in gesticulation, and shoulders were shrugged in disparagement. Crowds gathered round the two champions, with here and there a peacemaker striving in vain to moderate their ardour, but though separated occasionally by subsidiary discussions the two main combatants returned again and again to the battle. Happily, before the sun had set on their wrath, they found they were practically agreed after all, and shook hands, forgiving one another in the French which had possibly been the main cause of their disagreement.

So much for the business part of the congress; anyone wishing fuller details of the outstanding results will find them in an article contributed to *Nature* on August 24th by Dr. Arthur Keith of the London Hospital Medical School. The main object of the congress was not to discuss any particular points or to formulate any kind of federative policy, but rather to bring all those working at anatomy into international bonds and into friendly personal intercourse, and in this it proved eminently successful. Nothing could excel the efforts of the Swiss committee to carry out social functions in the evenings of the congress, and in this the natural beauties of the city and lake of Geneva lent them such aid as to set a standard of entertainment which it will be very difficult for future congresses, whenever they may be held, to emulate. The first of these was an evening reception held on the Island of Rousseau, when the congressists first had an opportunity of meeting one another in friendly intercourse. The island, sacred to the memory of the famous philosopher and bearing a fine statue of him set amidst stately poplars, lies in the middle of the rushing waters of the Rhone. A most interesting and impressive function which marked one afternoon was the inauguration of a monument to Fol, one of Geneva's most distinguished men, followed by a reception at Madame Fol's lovely villa at Chougny, where the proceedings were rounded off by an *al fresco* supper in a garden beneath gently swaying trees and in full view of the sunset's parting play on the distant snows of Mont Blanc. Very enjoyable, too, was an evening cruise on the lake with Professor Eternod as the generous and courteous host and captain. We sailed for hours through the wonderful changes from sunset and twilight to clear moonlight, the perfect calm of the lake reflecting all as in a clear mirror. Later a sumptuous dinner was given on the awninged decks by Professor Bugnion of Lausanne, and then with music and in gay lantern light aboard we steamed back to the Quai du Mont Blanc through a blaze of illumination with which the city authorities decked the port in honour of the Federation.

The closing scene was a banquet, "offert par l'état et la ville," in the *foyer* of the Grand Opera House, a wonderfully ornate hall, which looked its best in the full blaze of electric candelabra. A feature of the occasion was the circulation of a poetic jest by Professor Eternod, President of the congress, which is so clever in itself and so typical of the high spirit which characterised all the doings of the congress that it may form a fitting close to these cursory notes :—

V enir, de tous les points de la machine ronde,
I ci, pour cultiver une science chère ;
V enir, pour étonner savants et gens du monde
E st, pour sûr, un fait, propre à nous satisfaire.

L e microscope à l'œil, le scalpel à la main,
A vec habileté, nous scrutons la nature ;

B ientôt, sous nos assauts, à ce qu'on nous assure,
I l ne sera plus d'ombre en notre corps humain.
O r, moi, j'ose affirmer que, sur l'anatomie,
L' histologie normale et l'embryologie—
O u la zoologie—on voit, plus haut encore,
G randir quelque chose : et—c'est la gastronomie !
I l faut donc l'avouer : bien manger, c'est la vie !
E t la dissection, mes frères, c'est la mort !

A. C. F. E.

(poète mort prématurément dans l'œuf et ressuscité embryologiste).

THE LIÉGE UNIVERSAL EXHIBITION.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

THE CELEBRATION OF BELGIAN INDEPENDENCE.—THE HYGIENE OF THE COAL MINE.—A POOR BRITISH SECTION. —GERMANY AND JAPAN TO THE FRONT.—A TELLING DIAGRAM OF SANITARY PROGRESS IN PARIS.—A UNIQUE EXHIBIT IN REGARD TO ANKYLOSTOMIASIS.

Liége, August, 1905.

CONSIDERING that Liége is a provincial town with a population of only 180,000 inhabitants the Universal Exhibition must be described as a very creditable show. Whether such small centres should embark on such ambitious enterprises is another question. It is true that in Great Britain we have had recently a universal exhibition at Glasgow; but then Glasgow has a population of 790,000 inhabitants and yet how ineffective the Glasgow exhibition seemed after the splendours of the universal exhibition by which it was sought to celebrate the opening of the new century in Paris. However this may be, the Belgian nation determined to celebrate the seventy-fifth anniversary of its independence. Why this should be conceived a necessity cannot readily be explained. Jubilee and centenary celebrations are very general but why select the seventy-fifth year? Perhaps the idea was to celebrate the revolution of 1830 while there still remained living a few of the combatants who rose in arms against Dutch domination. In any case these veterans have been carefully photographed, their portraits are sold as postcards, and they speak well for the longevity of the Belgians. Throughout the country, from innumerable public and private edifices and dwellings, flags are displayed, together with devices bearing the two dates 1830–1905. Illuminations, historical processions, and festivities of all kinds occur with great frequency and the Belgians are enjoying a year, or at least a summer, of continual rejoicing. Brussels has never before seen such brilliant displays of illuminations and fireworks and the pageantry of the historical processions and tournaments has attracted thousands of visitors. But all this did not suffice; it was felt that there should also be a universal exhibition. It was not long ago—namely, in 1897—that such an exhibition was held at Brussels and there had been a similar show at Antwerp in 1894. Thus it has come about that Liége was selected for the present occasion and the town, aided by the entire province of Liége, has done all that could be expected in the circumstances. This does not mean that the visitor will find anything like what has been seen in the great capitals of Europe, but he will not be disappointed if he is gifted with a due sense of proportion.

One great advantage of such an exhibition is its accessibility; all can be seen in two or three days without over-strain and fatigue. For the modest charge of 1*d.* electric trams convey visitors from all parts of the town to the centre of the exhibition grounds and this in from about five to 15 minutes. The principal trams set the visitors down close to the main building which contains the more serious and technical exhibits. Naturally these, in the main, relate to the coal and iron trades; for the Liége district, with the Seraing and the Cockerill works, with its vast coal fields, and with its world-renowned gun and small-arm manufactories, has been long celebrated as the Sheffield of Belgium. On penetrating the main building by its principal entrance the visitor is at once reminded of the proximity of the German coal fields and ironworks. Once again the Germans have acquired a giant's share of the exhibition. In some ways, it is true, they are outstripped by the French, whose section is far and away the largest and most important of the foreign countries represented. Nevertheless, no one can go to Liége without being impressed by the enterprise of the Germans and the growth of their industries. In the German section there are some very remarkable life-size models of galleries in coal mines. These serve to show how iron-tube props can be used instead of the rough tree trunks generally employed to prop up the underground tunnelling. They also serve to exhibit various life-saving contrivances—the way, for instance, a stretcher can be introduced into a narrow opening to remove a wounded miner, and the knapsack arrangement by which a rescue party can carry on their backs a provision of oxygen to enable them to breathe in dangerous parts of the mine. The magnificent exhibits of the Kohlen-Syndikat Essen Ruhr afford a good opportunity of studying the hygiene of the coal mine There is a considerable variety of apparatus for artificially supplying respirable air to rescue parties The Aktiengesellschaft Steinkohlenbergwerk exhibits ventilating fans which profess to deliver 6000 cubic metres of air per minute and which are used, among other places, at Shantung in China. This battle of the fans is an interesting topic and it is very difficult to decide amid the contention of methods and claims which is really the best ventilating fan. The ventilation of mines of course differs considerably from that, for instance, of public buildings. It bears a closer analogy to the ventilation of sewers. In a place like Liége, situated so near to Belgian, German, and French coal fields, it should be comparatively easy to obtain a good and trustworthy pronouncement upon the respective merits of the various fans provided to propel air within coal mines On effective ventilation depends not merely the health of the miners but also their security from the danger of explosions. In the Belgian, French, and German sections these technical questions, on which the life and health of those who produce the main source of motive power for most industries depend, can with advantage be studied. It is estimated that more than 500,000 men work in the coal mines of the German Empire and there are close upon 800,000 men thus employed in Great Britain In Belgium there are 135,000 miners and in France 160 000 The Belgians, the French, and the Germans have all contributed a large quantity of information by their exhibits; but in the British section there is nothing whatsoever bearing on these important questions, and this in spite of all the experience that has been acquired and the efforts that have been made to improve the conditions of labour in the collieries of Great Britain.

The British section is a very small and nondescript one, swamped on one side by the large, dignified, and serious German section and on the other side by the very beautiful and artistic Chinese and Japanese sections The only consolation, if consolation it be, is that however poor and unworthy the British section, that of the United States of America is even more miserable and more out of keeping with the wealth and importance of the industries of the great transatlantic republic. There are few British exhibitors and what is shown is, with a few exceptions of little interest to the medical world. Messrs Burroughs, Wellcome, and Co alone have an exhibit in every sense worthy of a great occasion. The very original idea of suspending their tabloids like clusters of different coloured grapes from the top of their case, which they first adopted last year at the St. Louis exhibition, is repeated at Liége. Underneath the tabloids is their special medical equipment display, the object being to secure the maximum portability Here, as a specimen of mechanical ability, is a little gold case measuring three-eighths by four-eighths of an inch It contains 12 ivory-stoppered bottles which hold 300 minute white specks of about a hundredth part of a grain each This is meant to demonstrate that no difficulty of workmanship need prevent the reduction of the size of tabloids or of pills In the stand of the Wellcome Club and Institute there is an interesting photographic display to illustrate the use of tabloids in developing and intensifying of negatives and the toning of prints Specimens are forthcoming of photographic work done in Thibet during the recent expedition when the difficulty of transport was very great Altogether, Messrs. Burroughs and Wellcome have got four stands, for they also exhibit results from their chemical and physiological research laboratories These are similar to what was sent by this firm to the St Louis exhibition There are a couple of baby incubators, manufactured by M Ehrlich of Birmingham and Vienna and a small model of Horsfall's cell refuse destructor, but no explanation is forthcoming as to the special merits of these exhibits The very few scientific subjects are hopelessly jumbled up with patent boot polish, tea coffee, pickles, a few bottles of whisky and a good many bottles of beer, a model of Cook's railway up Mount Vesuvius, the stand of the United Kingdom Alkali Works, and a display of art bookbinding. In regard, however, to the first item mentioned it may be worth noting that the "Cobra" boot polish professes to be a hygienic boot polish. This substance has just been analysed by Dr Edouard Nihaul, professor of industrial chemistry at the University of Liége, and he has recognised that the polish does not contain lamp black or any acid substance. This is important so far as the preservation of the leather is concerned, but from the health point of view the claim is made that the polish does not close up the pores of the leather, so that the air may freely circulate within the boot and keep the feet fresh and cool.

From the British section the visitor will cross over the main passage to the American section, which is devoted chiefly to the sale of trinkets that are in many cases and obviously not even American. Then he will penetrate the Japanese section with its marvellous display of art bronzes, porcelain, ivory carving, richly ornamented silks, designs and pictures, and a scientific department including some surgical instruments sent by M. Shima of Osaka, Japan. Many photographs and details are given illustrating the work done by the Imperial Education Society of Japan which was founded in 1879 It publishes a monthly report, encourages teaching, has founded many libraries, and is of great service to teachers. The Chinese section is somewhat smaller but it also contains many artistic objects. These would be rendered much more interesting if some explanation was given of the historical or the symbolical meaning of the strange and weird figures which to the European often seem as the distorted visions seen during a nightmare Close at hand there are small sections where the industries or products of various countries are shown, including Spain, Peru, the principality of Monaco, and a more important Italian section.

Crossing over to the other side of the main building the large French section will be found. Its very approaches smell sweet on account of the considerable space devoted to a display of scents of all sorts, where notably L. Plassard's new extract from the wild heather of the Cévennes Mountains perfumes the air. Near at hand are the French pharmaceutical exhibits and here many familiar drugs are to be found There is, for instance, that very pleasant and delicately flavoured infants' and invalids' food the phosphatine Falieres and the vin Chassaing. The Society of the Chemical Products of Paris and that of the Chemical Products of Marseilles have large stands, while Messrs. Comar and Sons here display their many and varied pharmaceutical preparations in much the same manner as they did at St. Louis and at most recent and important exhibitions On this occasion, however, they give special prominence to sterilised tubes containing doses of a great number of medicaments, such as morphine, cocaine, phosphorated oil, lecithin and iron, creasote, &c , in all about 30 different kinds of medicaments carefully preserved in closed and sterilised glass tubes. Many other wholesale druggists exhibit here and among them Pierre Byla of Gentilly, Seine, with a variety of preparations of digitalis and Trouette's papaine derived from the *Carica Papaya* and used in the treatment of gastric troubles as a vegetable substitute for pepsine. In another part of the building there is a class where in exhibiting a preparation it is necessary also to show all the raw materials with which it is made Here we have the indiarubber as secured from the tree side by side with an infant feeding bottle that has a rubber nipple, or branches of the *eucalyptus globulus* by the side of bottles of eucalyptus oil Altogether in these technical matters French pharmacy and the chemical industries are well represented There is also much to see in the French social section; what has been done to improve workmen's dwellings, to render factories and workshops less dangerous and reduce the frequency of accidents; and then there are the ever interesting exhibits of the metropolis of Paris. It would be difficult to show in a more graphic manner—in a manner more easy to understand—what municipal government means and what it has done for the brilliant city on the banks of the Seine In this respect a new diagram has been prepared It consists of coloured drawings on a black groundwork giving the entire sanitary history of Paris during the last century plus four years of this century One line is devoted to each separate subject and there are drawings and figures First there is a very little man and under it the figures 547 156 This was the population of Paris in the year 1800 Then as the line continues the man increases in size till a giant is represented with the figures 2 660,559, which was the population of Paris in 1904. Afterwards there is a row of houses and this shows that whereas the population has increased fivefold the houses have only increased threefold—namely, from 25,086 to 75 625 during the 104 years This, of course, means that there are proportionately many more lofty houses and tenement dwellings—a fact which, all other circumstances being alike, would increase the death-rate. But the other and subsequent details given show that the other circumstances have, on the contrary, been greatly changed, and this for the better. Thus a very small pail of water indicates that in 1800 only 7670 cubic metres of spring water were consumed in Paris per day, whereas now the amount is equal to 75,625 cubic metres. In 1800 the sewers of Paris measured 15 kilometres in length; now their total length is 1180 kilometres. In 1800 there were only cesspools and these numbered 32,000. Then it is shown how the number of cesspools increased till the system of *tinettes filtrantes* and portable tubs was introduced when they began to decrease. Finally, and after 1889, all the three systems began to decrease as the number of houses draining into the sewers increased, so that there are now in Paris 38,850 houses properly drained and 34,950 still draining according to the old methods into cesspools. Finally, at the bottom of the diagram comes a row, not of men this time, but of skeletons. Their size indicates the death-rate, and while above the man is ever increasing in size the skeleton below becomes smaller and smaller. The first skeleton is very big because it represents 33 deaths per 1000 of the population in the year 1800. The last skeleton, on the contrary, is very small because it represents the proportion of deaths for the year 1904, and it amounted to only 17·1 per 1000 of the population. This is a truly encouraging diagram which must give great satisfaction to all who have striven to promote the cause of sanitation. The exhibits of the city of Paris occupy three rooms, one being devoted to what the municipality does in regard to primary and technical education. In another room there are the exhibits of the prefecture of police, the anthropometric section, with finger-prints and other methods of identification. A great number of pictures and photographs show the working of the different departments that relate to the preservation of health—as, for instance, the disinfecting services, the dealing with and disposal of stray dogs, the conveyance of house refuse, &c. A student in such matters could learn much here without having to incur the expense of going to Paris.

The rear part of the main building, which is reached by a covered bridge that goes over a railway line, contains a few foreign sections, the machine gallery, and the greater part of the Belgian exhibits. Here the Russians have a fine section with, among other things, an ambulance tent and lay figures representing a scene during the Manchurian campaign. There are also some Russian disinfecting stoves and surgical instruments.

It is needless to say that by far the most complete exhibits are those of Belgium. The universities especially make very extensive efforts to bring themselves prominently forward. There are also many municipal exhibits and those of various charities and philanthropic institutions that strive to cope with disease and poverty. Much of this has been seen before at previous exhibitions and Belgium is not a very progressive country in such matters. The cause of education suffers from political rivalries, while in all life-preserving labour legislation Belgium is one of the most backward countries of Europe. One thing in the Belgian section is unique and new. This is a most complete exhibition of all that bears upon ankylostomiasis. Here will be found numerous specimens of the worm itself, as also sections of intestines with worms adhering and evidence of the hæmorrhage they cause. Then there are large anatomical drawings of the egg in various stages of incubation, of the larva, and finally of the worms, male and female. The biology of the parasite can be fully studied, while photographic views show the Bacteriological Institute of Liége and the work done there upon the natural history of ankylostomiasis. Full details as to the interesting experiments made at Liége are to be obtained at the exhibition and the methods of treatment and of control introduced throughout the coal mines of the Liége district are explained. The result of these methods is that whereas when they were first instituted by the province of Liége 28 per cent. of the miners suffered from ankylostomiasis, now only 12 per cent. are infected. This result has been attained in two years.

Close by may also be seen what the provincial authorities are doing to lessen the frequency of tuberculosis. There are many photographs, plans, and a very beautiful model of the popular sanatorium of Borgoumont. This institution was inaugurated by Professor Brouardel and a large number of the members of the last International Congress of Hygiene which met in Brussels in September, 1903. The statement published at the exhibition is that up to Dec. 31st, 1904 the number of patients admitted at Borgoumont was 356, 87 of whom were still under treatment. 53 patients remained for so short a time that no observations worth having could be made. But 216 patients sojourned in the sanatorium for 60 days or more. Of these, 183, or 84·7 per cent., were much benefited. 15 patients did not improve, the condition of 16 patients was worse than before, and two died. These are considered satisfactory results. The popular sanatoriums for tuberculosis and the public service for the treatment of the miners' worm disease are two new features which have not been seen in the Belgian section of previous exhibitions. Of course, the older subjects such as drainage, water-supply, and so on, have likewise their place in the hygienic section, and it will there be noted that the town of Liége has a new system for the automatic flush tanks.

Outside there are extensive grounds with many frivolous side shows. But there are also pavilions built by various nationalities that are interesting and there is a very extensive art gallery with many beautiful paintings from all parts of the world. Altogether it is worth while spending a few days at Liége The hotels are prone, it is true, to make exorbitant charges. There is, however, just outside the station an official *bureau de logements.* There rooms in private houses can be obtained for from 4*s.* to 12*s.* a day, including a roll and cup of coffee in the early morning. The visitor is then free to take his meals at any of the excellent restaurants that abound at Liége. As Liége is on the main road from London to Cologne and the Rhine it can easily be included in the usual holiday tours and doubtless many will be pleased to see this interesting old town with its modern exhibition and industries.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Pale Faces of the North.

SOME short time ago Judge Brown, at the Stalybridge county court, said that the first thing noticed by visitors from the South of England was the anæmic faces of the people in the North. He attributed it to the atmosphere, to the life they had to lead, and to their poor food. All know that in the manufacturing districts there is far too much unconsumed carbon in the air, that the life of a "mill hand" is not likely to bring a healthy bloom to the cheeks, and that tea and white bread, with some so-called butter, do not constitute an ideal dietary. But Mr. J. Aspinall Marsden, late medical officer of health of the Standish urban district, in a letter to one of the Manchester papers, recalls to notice another factor to which he attributes a seriously evil influence, not confined in its action to the poorer classes in country or town, but claiming also the "better classes" as victims of this "paleness of the North." He says in effect that all suffer more or less from chronic lead poisoning and unfortunately is able to bring forward a good deal of evidence in favour of his view. The moorland water is generally used in the North, and, "peaty water being acid, acts on lead connexion pipes, with the result that millions of people in the North are daily drinking and using water containing varying—usually very small—doses of this insidious poison, which has the peculiarity of accumulating in the system." He says that recently 35 out of 58 reservoirs in the North were found to contain water capable of rapid action on lead. A few months ago the West Riding county council had 100 samples of water analysed and found that most of the towns in its area were using water containing lead enough to be injurious to health. It may be remembered that the prevalence of lead poisoning at Mossley some time ago was found to be due to the acidity of the water of the Lower Swinshaw reservoir. Epidemics of lead poisoning have not been so common since Dr. A. O. Houston's investigations but Mr. Marsden wishes to point out that where the lead impregnation by acid moorland water is not sufficient to give rise to the advanced symptoms of lead poisoning yet it may markedly damage the general health and produce an anæmic condition indicated by Judge Brown's expression, "the pale faces of the North." Constant watchfulness seems to be needed to guard against plumbism. It would be interesting —if we could only know—to compare those killed with lead in the form of bullets with the numbers slain by this subtle poison taken daily with their food.

The Port Sanitary Authority and Unsound Food.

The Manchester port sanitary authority has had under onsideration a difficulty as to the prevention of unsound ood being landed from vessels coming up the Ship Canal. hey can prevent diseases from spreading from the port hen they are occasioned by, or connected with, navigation. r. A. Holmes, the clerk, at the meeting on Sept. 4th resented a report showing that local authorities under the rovisions of the Public Health Act of 1875 and the Public ealth Amendment Act of 1890 had power through the edical officer of health or inspector of nuisances to eize unsound food in preparation for sale in such laces as a warehouse, auction room, or shop. The sheds nd warehouses at the docks could therefore be examined, ut in his opinion a ship would not come within the proisions of the Act. An inspector had been appointed under he Diseases of Animals Act, 1894, and this appointment ad been confirmed by Manchester, Salford, and Stretford, nd by the county council; but, in Mr. Holmes's opinion, ower should be granted to port sanitary authorities to eal with food unfit to be eaten, "as this would be ore easily detected as it was being unloaded from essels, and could be followed to the warehouse where was deposited prior to its removal by the congnee." It was said that no examinations are now ade of food landed at the docks and one of e members considered that this placed the authority "an absurd yet terrible position." It was pointed t that the work could be done by the municipal thorities, but it was considered that it would be better for e port authority to have its own inspector to examine all od as it was unloaded from the ships. After discussion it as decided to seek power to appoint an inspector and a eputation will shortly go to London to lay the case before e Government officials. Dr. A. M. N. Pringle, the medical ficer, reported that during the past month 293 vessels ad been inspected, all but 41 being British. Defects or sanitary conditions were found in 137 and of these 125 ere British.

The Viewing of Bodies by Juries.

At an inquest held at Stockport last week several of the urors protested against the viewing of the body and no oubt there is a widespread feeling against it. The coroner, r. F. Newton, said that he sympathised with the objection it. He added that it ought to be sufficient if a medical ficer were empowered to see the body and to give a ertificate to satisfy the jury. The jury cannot in the majority cases aid in identifying the body, nor can they of their own nowledge assign the cause of death. Their decision must e grounded on the evidence put before them and if viewing e body is merely to convince them that death has taken lace the sworn information of a medical officer would appear be sufficient.

Diphtheria at Middlewich.

The Middlewich urban district council has been asked by he Local Government Board for a report on the prevalence f diphtheria in the district. From this report it appears hat during the last seven months of 1904 67 cases ere notified, eight of which were fatal, while 26 cases ere notified in the first five months of this year, nine of hich died. The medical officer of health considers that he prevalence of the disease is due to several causes. here is no isolation hospital and there is great difficulty n securing isolation in small cottages. He considers also hat a large number of "intermediary" cases pass nrecognised. No information is given as to any general ygienic measures but we know something of the ignorance nd carelessness generally prevailing in small country owns, and it would be a pretty safe surmise that the lace would benefit by a thorough cleansing. The council rovides "outfits" to examine swabs from suspected throats acteriologically and antitoxin, so that no municipal default s urged.

Twenty-two Born, Two Living.

The following story came out at an inquest on a child at eaton Norris on August 30th. The coroner, Mr. J. F. rice, asked the mother how many children she had had and he said 22. "How many are living?" "Only two." Two ere stillborn and the others died from measles when about ree years old. Dr. E. A. Goulden, the police surgeon, ad made a post mortem examination and gave it as is opinion that the child's death was from suffocation. he coroner asked the mother whether she had heard hat the child was smothered, but she said "No." He said that it was very easy to smother children and it was a mistake to have them in bed. How often and for how long has this doctrine been preached? Yet mothers overlie their babies as often as ever. The almost incredible carelessness and stupidity of some working-class women are illustrated by the account of the death of a Todmorden child. He was a year and ten months old and was left in bed with a box of matches conveniently placed on a table within his reach. Of course, he began to play with them and set the bed on fire. He screamed and his mother ran upstairs and did her best, no doubt, to save him, but he was terribly burnt and died soon afterwards.

Death under Chloroform.

An inquest was held on Sept. 8th at the Wigan Infirmary on the case of a woman, 47 years of age, who died there while under chloroform. Dr. Redmond said that he had examined the woman's heart before chloroform was administered and had found no signs of weakness and considered that it might be safely given. Mr. H. E. Batten, who had made a post-mortem examination, considered that death was due to syncope arising from fatty degeneration of the heart, evidence of which it was quite possible to fail to discover before death. A verdict of misadventure was given, the jury attaching no blame to anyone.

Sept. 12th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Liverpool School of Tropical Medicine.

AT the request of the Colonial Office the committee of the School of Tropical Medicine has, with the consent of the authorities of the University of Liverpool, requested Professor Rubert W. Boyce to visit Belize, in British Honduras, to report on the sanitary measures in that colony necessary in view of the recent outbreak of yellow fever. Professor Boyce, who is now at New Orleans on a similar mission, will, after completing his observations of the methods employed by the Americans in combating yellow fever, proceed to Belize. Latest mail advices from Brazil have brought news that both members of the yellow fever expedition of the Liverpool School of Tropical Medicine at Manaos have been ill with yellow fever, one very seriously. The latter has now been invalided to Madeira to recuperate but proposes to return to continue his work in Brazil. The medical officers at Manaos have shown both gentlemen the greatest kindness and attention during their illness. Prince Auguste d'Arenberg, the President of the Suez Canal Company, in sending Sir Alfred Jones a cheque for £40 towards the funds of the Liverpool School of Tropical Medicine, eulogises the excellent work done by its professors on behalf of humanity and wishes the school every success.

The Increase of Insanity.

The fifty-ninth report of the Commissioners in Lunacy, issued on Sept. 11th, records an increase of lunacy in England and Wales. During the last 12 months there has been a decided falling off in the number of persons certified as fit for removal to asylums at the Liverpool workhouse. This is not due to the refusal of the authorities to admit cases coming from abroad and brought to this port by the various liners, as the Act applying to such persons has not come in force yet, but the fact remains that admissions to the Liverpool workhouse in view of removal to asylums are not by any means as numerous as in former years.

Hospital Sunday in Southport: Low Death-rate.

Sunday, Sept. 10th, was observed as Hospital Sunday in Southport and appeals were made from the pulpits of all the churches and chapels for an increased measure of support on behalf of the Southport Infirmary. Last year 4390 patients received treatment (576 as in-patients) and the average ordinary income for the past three years has been £4022; this fell short of the average expenditure by £173 but with the increasing demands made on the institution the committee is anxious to increase the annual income by £200. Dr. R. H. Wilshaw, the acting medical officer of health of Southport, reports that during the month of August the gross death-rate was 9·68 per 1000, as compared with 13·59 a year ago. The local death-rate was 8·06 per 1000 and the zymotic death-rate 1·15 per 1000.

Sept. 12th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Memorial to Professor Alfred W. Hughes.

ON the road to Cader Idris and overlooking the small village of Corris in Merionethshire there was unveiled on Sept. 9th a Celtic pillar over 20 feet in height, which has been erected as a memorial to the late Professor Alfred W. Hughes. The pillar was designed by Mr. W. Goscombe John and on the uppermost stone of the base he has carved a bust of Professor Hughes. The inscription on the pillar is:—

In Memory of
ALFRED W. HUGHES, F.R.C.S.,
Professor of Anatomy, King's College, London,
Who began his life's work among these hills,
and died of fever contracted in the
South African War while superintending
The Welsh Hospital,
Which he originated and organised.
Born at Fronwen, Corris, July 31, 1864;
Died November 3, 1900.
Erected by public subscription.

In Cardiff Professor Hughes will long be remembered as the first dean of the medical school connected with the Cardiff College of the University of Wales. From 1893 until 1897, when he went to King's College, London, he worked hard in the interests of the school and the Cardiff students are altogether indebted to him for the very complete anatomical museum which is for the present housed in the college buildings.

The Medical Officer of Health of Chipping Sodbury.

If the members of the Chipping Sodbury rural district council carry out the duties imposed upon them by the Public Health Acts with the same pertinacity of purpose which characterises a majority of their number in opposing the very definitely expressed wishes of the Local Government Board the sanitary needs of the district must be looked after very well indeed. In May last the council elected as medical officer of health a gentleman practising in the district in place of Dr. Francis T. Bond, who had held the position in conjunction with other districts for more than 30 years. The Local Government Board asked for definite reasons for the supersession of Dr. Bond and as these have not been forthcoming sanction to the appointment of the local practitioner has been withheld by the Board, which advises the council to reappoint Dr. Bond and thus render it "unnecessary for the Board to consider whether they should take further action in the matter." Although the council is apparently quite aware that the further action which the Board can take includes the compulsory formation of a combined district for the purpose of appointing a medical officer of health, only three members present at the meeting when the matter was discussed were in favour of receding from the utterly unreasonable and untenable position taken up by the council, while 18 resolved to adhere to their previous decision.

A Pure Milk Supply Endangered.

A statement of considerable importance to those concerned in the administration of the Sale of Food and Drugs Act was made at a meeting of the Bristol and District Milk Vendors' Association held in Bristol on Sept. 7th. The solicitor to the association stated that in order to supply fresh milk twice daily and with only eight hours intervening it was necessary to milk the cows at intervals of eight hours and 16 hours and the milk from the latter milking was frequently found to be deficient in butter fat. This deficiency had resulted in police-court proceedings and fines, although in two instances samples of milk taken by the city inspector, which he himself had seen taken from the cows, were identical with those samples concerning which proceedings had been successfully taken. In consequence of these results, and others of a like character which have occurred elsewhere, it was stated that the Board of Agriculture proposes to put in force a scheme which has been experimentally tried in two districts which will enable milk to be sold with impunity even though the Somerset House standard is not reached. The essentials of the scheme are that no proceedings will be taken in respect of samples of milk found below the standard if an inspector finds upon attending at the actual milking that a second sample then taken is also below the standard. Until the complete details of the scheme are published it is perhaps hardly fair to criticise it, but, unless the most elaborate safeguards are provided under the innovation, it will become hardly possible to take successful proceedings in any case and as far as milk is concerned the Sale of Food and Drugs Act will be a dead letter.

The Devon and Cornwall Sanatorium for Consumptives at Didworthy.

On Sept. 8th the Earl of Mount-Edgcumbe formally opened the new wing of the Devon and Cornwall Sanatorium for Consumptives at Didworthy, Devon, in the presence of a large gathering. The cost of the building has been £800. This sum has been collected by Dr. R. H. Clay, the chairman of the committee of management. An additional £480 is still required for the purpose of furnishing, &c. The new wing consists of two storeys, in each of which there are five rooms measuring 14 feet by 14 feet. It will provide additional accommodation for 17 patients, so that now the institution can receive 35 inmates. The committee hopes that there will be a considerable increase in the number of annual subscribers and the Earl of Mount-Edgcumbe made a strong appeal for increased financial support.

The Voluntary Notification of Pulmonary Tuberculosis.

The voluntary notification of pulmonary tuberculosis is now being carried out in Bristol. The fee of 2*s.* 6*d.* is paid for each case notified by a private medical attendant unless the case has been notified by another practitioner, in which case 1*s.* is paid. The fee paid to medical officers of public institutions is 1*s.* For each change of address reported, giving the new address, a fee of 1*s.* is paid. The health committee of the Bristol town council has arranged to secure the examination of specimens of sputum for medical men free of cost.

Sept. 11th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The History of Bile Beans.

A NOTE of suspension and interdict by the Bile Bean Manufacturing Company, Limited, against a Scotch druggist was disposed of in the Court of Session last week. The object of the action was to have the respondent interdicted from selling under the name of "bile beans" any pills or other articles not made or supplied by the complainers. The respondent's defence was that the complainers' business was not a *bonâ-fide* trade and that the business was founded on, and was still being carried on by means of, a gross fraud. In the course of evidence it was discovered that Mr. Fulford and Mr. Gilbert, the complainers, first met in New South Wales. It occurred to Fulford that it might be a good thing to carry on business as medicine and pill manufacturers or agents, and he and Gilbert agreed to go into partnership for that purpose. They first started the preparation of "Gould's Tiny Tonic Pills," but they did not have such success in that business as they anticipated. In the early part of November, 1899, Fulford told his partner that at four o'clock in the morning he had hit upon the title for a new pill that was to be put upon the market—namely, "bile beans for biliousness"—and he prescribed a formula for the pill. The pill "caught on" in Australia and Fulford proceeded to this country to open a market in Great Britain. Neither the company nor the partners manufactured the pills. They merely sent the formula to manufacturing chemists to manufacture the pills in millions. The firm commenced to advertise on a most extensive scale. Since 1899 their business had spread over the whole of the country. The only places in the English-speaking world where the firm had not set up business were Canada and the United States of America. They had spent £300,000, Mr. Gilbert stated, in the building up of this business in the United Kingdom and had issued 83,000,000 small pamphlet books. In summing up Lord Ardwall said that the foundation stone of their success had been the false and fraudulent statement that their bile beans were for the most part composed of a natural vegetable substance which Fulford discovered in Australia, which for ages had brought health and vigour to the natives of that island continent, and which was now being introduced for the benefit of civilised nations. In one of their latest advertisements the following words occurred:

"Some years back Charles Forde, an eminent scientist, thoroughly investigated the healing extracts and essences of Australian roots and herbs and after a long research he found himself the discoverer of a natural vegetable substance which had the power of acting in the human system in the same way as nature's own animal substance—bile, and which was beyond all doubt the finest remedy yet discovered for all liver and digestive disorders." That statement, his lordship said, was both false and fraudulent. There was no such person as Charles Forde, his name being Fulford; he was not an "eminent scientist," having had no scientific training and possessing no standing as a chemist; he never investigated the healing extracts and essences of Australian roots and herbs; he never made any research; he never was the discoverer of a natural vegetable substance which had the power of acting in the same way as animal bile, and no such substance formed the basis of bile beans, these beans being compounded by wholesale chemists in America out of drugs which they had in stock, and no one of which had anything special to do with Australia. There was, therefore, no doubt in his lordship's mind that their business was one founded entirely upon fraud, impudence, and advertisement. It seems certain that these beans would never have taken the hold of the public they have done except for the foundation fiction of their being the product of a great discovery of an ancient Australian medicine by an eminent scientist using the most advanced scientific methods and apparatus. These frauds constituted a relevant ground for refusing to the complainers the remedy they sought in the action, and although it was impossible to approve of the respondent's action in the case he had acted within his legal rights.

Hospital for Diseases of the Ear, Glasgow.

At a recent meeting of subscribers to this institution it was proposed that the hospital should in future be termed "The Glasgow Hospital for Diseases of the Ear, Nose, and Throat." The chairman pointed out that diseases of the nose and throat had always been treated in this hospital since its origin in 1872 partly in connexion with ear disease and partly independent of aural disease, and that for several years past these affections of the nose and throat had bulked very largely in the work of the institution. It may be mentioned that the institution is furnished with 16 beds for indoor cases and at the outdoor dispensary there is a daily average attendance of over 40 patients.

Sept. 12th.

IRELAND.

(From our own Correspondents.)

Queen's College, Galway.

From the annual report (1904–05) of the President of Queen's College, Galway, it appears that there were 106 students in attendance during the past year, 53 of whom came from the province of Connaught and 33 from Ulster. Of a total of 40 scholarships awarded at the beginning of the session 22 were gained by students from Connaught, which shows that the college is accomplishing good work in its own district. The President again draws attention to the utter inadequacy of the yearly grant to the college, the funds at its disposal being lamentably insufficient for modern requirements.

State of Fintona.

Dr. B. MacCarthy (Local Government Board medical inspector), in a report to the Omagh rural district council, read at its meeting on Sept. 9th, says he has inspected the houses in Fintona occupied by the labouring classes and he is of opinion that there is a real need for suitable houses for the labouring classes in that town. The principal defects observed by him were: (1) clay floors, which were universal, uneven, and damp; (2) windows of insufficient size, which often did not open; (3) defective roofs; and (4) in general, walls thin and cold and houses in bad repair. Most of the houses had all these defects and in none did he not observe one or more of the defects mentioned. Dr. MacCarthy says he is of opinion that the houses available for this class of tenant in Fintona were exceptionally bad and that it is only by adopting a very low and unsatisfactory standard, and in default of the possibility of better accommodation being provided, that a large number of them would be described as "fit" for human habitation.

Rainfall in Belfast.

There were during the month of August 25 days on which rain fell and the total amount was 6·64 inches, the greatest previous rainfall for the month being 7·98 inches in 1889, while the average rainfall for August is 4·28 inches. 26·91 inches have fallen so far in 1905, which is over the average for the first eight months of the year (25·81 inches). On August 25th and 26th exactly three inches of rain fell (this is smaller than the Dublin record for these two days, which was 3·3 inches), while in Dublin on no previous occasion within the last 40 years have three inches of rain fallen within 24 hours; in Belfast the fall on the 25th and 26th was exceeded by that of August 12th and 13th, 1883, when 3·52 inches were recorded, 3·48 inches of which fell in 27 hours. Tracing back the record there were only two other instances of days in Belfast on which two inches of rain fell—July 24th, 1896, 2·06 inches, and Sept. 2nd, 1902, 2·07 inches. It will be thus seen what an amount of rain fell on August 25th and 26th of this year in Belfast.

Belfast District Lunatic Asylum.

At a meeting of the committee of management of this institution held on Sept. 11th reference was made to the admission of two young children, aged six and seven years respectively, and the medical superintendent (Dr. W. Graham) pointed out that neither the workhouse nor the asylum was the proper place for such cases but of the two evils the lesser one was chosen. It is deplorable that in Ireland there is no public central institution (as pointed out by Dr. Graham) for the training of imbecile children, whereas in Scotland there are two and in England several. These, though not built by the State, get Government grants, though to a large extent they are supported by endowments. The whole subject of how to deal with imbecile children and idiots is to be discussed by the committee of the Belfast asylum at its next monthly meeting and in the meantime the medical superintendent is to have prepared a return showing the number of these cases in the asylum.

Poisoning by Fungi.

The growth of mushrooms in Ireland this autumn has been quite unusual. It was stated recently—in the language of the daily papers—that during one week the county of Sligo was "white with mushrooms." Some cases of severe poisoning have been treated in the general hospitals of Dublin, doubtless from the "amanita phalloides" collected by ignorant hawkers from under trees.

The New Belfast Ambulance.

The entire amount needed for the new Belfast ambulance has been subscribed and the fund is now closed. A subcommittee has been appointed to purchase the machine.

Sept. 12th.

PARIS.

(From our own Correspondent.)

The Preservation of Live Fish.

M. Billard and M. Bruyant, two naturalists, have just discovered a microscopic alga which grows very easily and rapidly in water from which it can be dredged up and which preserves this water almost indefinitely in a pure state. Moreover, it colours the water an intense green. By the use of this alga the two observers have been able to preserve alive for some six weeks in a large wide-mouthed vessel (*bocal*) trout fry which are exceedingly delicate and as a rule very desirous of running water. Leeches have been kept alive for 18 months in a similar way. Trout fry have been taken out alive from water containing this alga after a journey of seven hours by train, the temperature being 25° C., although in a control vessel which was simply filled with pure water not one fish survived. Apparently this alga has the same action as any green plant—viz., that of decomposing the carbonic acid produced by the branchial respiration of fish and of giving up to the water the oxygen necessary for them; but, moreover—and this is the point upon which M. Billard and M. Bruyant insist—the alga acts as a yeast and decomposes the toxic products elaborated by the fish and thus renders the water capable of ministering to the proper vital actions of the fishes.

Typhoid Fever.

An epidemic of typhoid fever is at present in progress in the department of the Seine-et-Oise. It began at Pontoise and extends towards Gagny. The outbreak is attributed to the dispersal of sewage water over the fields in this district where the soil is mainly limestone. Fissures occurred in the soil and wells are contaminated by soakage. Active measures have been taken to stay the spread of the disease.

Cholera.

In view of the epidemic of cholera which is in progress in Germany, the permanent section of the Consultative Committee of Public Hygiene for France has met under the presidency of Professor Debove, dean of the Faculty of Medicine of Paris, and has unanimously passed resolutions to the following effect. It approves the instructions addressed to the health officers in the various ports, laying down an exact surveillance for merchandise and passengers arriving from the Baltic, especially those arriving at Havre from Germany or from Russia. The committee of hygiene considers that for the time being these measures are sufficient, taking into consideration the distance of the choleraic centres and the precautions taken by the German Government to inhibit the extension of the scourge. The committee, moreover, considers that it is not at present necessary either to install on the land frontiers the sanitary posts charged with the individual examination of travellers or to disinfect merchandise or baggage. The committee nevertheless instructs the administration to hold itself in readiness to install these posts and to have them ready for full work directly their utility shall be apparent. In those cases where emigrants coming from infected regions would be subjected at Hamburg to measures which would turn them over to French ports such emigrants are warned that they will undergo in France a surveillance no less strict than they have undergone in Germany. The Minister of the Interior has also published a note saying that in consequence of the resolutions of the Consultative Committee of Public Hygiene relative to the dangers which emigrants coming from infected regions may be the cause of, all the steamship companies engaged in the emigrant traffic are warned that they must not take people from infected districts as passengers and that they should instruct their agents in this sense. The sanitary administration has been instructed that its disinfecting stoves must be put in a fit state to start work as soon as a warning is received and that its medical staff will be employed in the frontier posts on the discovery of any case of cholera.

Sept. 12th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Cholera in Germany.

GERMANY has for a considerable time been tolerably free from serious epidemics, for when the cholera raged so terribly in Hamburg in 1892 there were only a few sporadic cases outside that city. During the present year, however, there occurred an epidemic of cerebro-spinal meningitis to which allusion has been made in these columns[1] and this had hardly subsided when cholera appeared. On August 16th the presence of Asiatic cholera was recognised in the case of a Russian raftsman who died on his raft on the river Vistula near Kulm in West Prussia. The authorities are of opinion that there must be somewhere in Russia a focus of cholera of which the Russian Government has either not yet been made aware or which, notwithstanding the international treaties on the subject, has been concealed. Possibly the disorders in Russia have prevented the Government of that country from giving proper attention to sanitary measures. The above case was not the only one, for several others soon developed in places along the Vistula, so that 20 suspected cases occurred up to August 30th, and of these 12 on bacteriological examination proved to be Asiatic cholera; six of the patients died, all being either raftsmen who had come from Russia or persons who had been in direct communication with them. On August 28th a conference of the Imperial German and Royal Prussian sanitary authorities was held in Berlin to decide on the measures to be taken against a spread of the epidemic, the result being that special Royal Commissioners were appointed to combat the disease, one for the river Vistula and the other for the rivers Brahe and Netze and the Bromberg canal. At 12 places along the Vistula and at four on the Netze sanitary stations were erected with a permanent medical service and temporary accommodation for patients and suspected cases. Every raft and boat passing one of the stations was carefully examined and not allowed to proceed until the health of those on board was found to be satisfactory. As the ordinary staff of the public health service could not undertake the additional work of cholera prevention without neglecting its other duties its numbers were reinforced by members of the army medical service possessing special bacteriological training and by men holding the position of assistants to bacteriological institutions. Public sanitation with respect to cholera is on a better footing now than it was in 1892, for in that year all the regulations and institutions for the prevention of the disease had to be provided, whereas now the experience gained from the former epidemic has led to effective prophylactic measures being adopted from the outset. Moreover, the Government by the law of 1900 for the prevention of epidemic disease has obtained power to take more energetic measures than was previously the case, and the progress of bacteriological science has enabled the authorities to combat the epidemic without having recourse to methods which inevitably obstructed travellers and commerce, while at the same time they often failed to accomplish the result aimed at. For instance, the quarantine system has practically been abandoned and so has the system formerly employed in Europe and still followed in some Eastern countries—namely, the surrounding of an infected area with a cordon of troops. It is remarkable how little fear of cholera exists now among the public. I remember that in previous years the announcement that cholera had broken out somewhere in Germany created a kind of panic, whereas at present there are no indications of public uneasiness. The daily newspapers, whilst printing detailed reports of the spread of cholera, at the same time publish articles on precautions to be taken by the public with respect to food, the drinking of boiled water, &c. In Berlin, where no case has occurred as yet, the city authorities have made preparations against a possible invasion; the Moabit Hospital will soon be emptied of the patients now there and made ready for the reception of cases of cholera. The pavilions of the hospital will be divided into three classes: one for cholera patients, one for suspected cases, and the third for the families of the two first categories who are to be kept there for a time under observation. The municipal disinfecting staff has been reinforced by 100 trained reserve men belonging to other municipal services. The municipal authorities, relying on the devotion of the medical profession, have sent to the medical men of Berlin a circular letter in which they are invited to assist in the struggle against the disease. The following recommendations are made in this circular: (1) if a case is suspected to be cholera to take the same measures with respect to isolation, disinfection, &c., as if the case were already ascertained to be Asiatic cholera; (2) to disinfect the fæces and the bed linen; (3) to isolate the patient, to provide for nursing, and if possible to send him or her to a hospital; (4) to instruct the family and the attendants as to their own protection; (5) to take care that the disease is not spread by means of infected fæces or by washing contaminated linen, clothes, and vessels in places where there is a public water-supply; (6) if the patient has already died to isolate the body till the arrival of the medical officer of health; (7) to inquire how the patient may have caught the disease; and (8) to send specimens of the fæces for bacteriological examination as soon as the first suspected case has declared itself. Until Sept. 7th there were 90 cases with 26 deaths reported, but on that day in Marienburg, West Prussia, 12 new cases with six deaths were notified; these patients were nearly all working men and had apparently caught the infection in a lodging-house where Russian raftsmen sometimes lived. This house was accordingly closed. In Hamburg a Russian emigrant and two other persons have been attacked with the disease but there have been no further cases during the last two days.

Death of Dr. Laehr.

Dr. Heinrich Laehr, the oldest of the German authorities on lunacy, died at Zehlendorf, a suburb of Berlin, on August 17th, at the advanced age of 85 years. Born in

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[1] THE LANCET, May 20th (p. 1386) and June 10th (p. 1619), 1905.

1820 at Sagan, he received his professional training at Berlin and Halle, where he took his medical degree in 1843 and afterwards became an assistant, first in the Halle surgical clinic and then in the clinic for nervous diseases under Professor Damerer. In 1853 he settled at Zehlendorf, where he established a private asylum which at that time was a model of its kind. Dr. Laehr was very much esteemed by his professional brethren as a founder of the German Psychiatrical Association and of the *Allgemeine Zeitschrift für Psychiatrie*, both of which have contributed very much to the advance of psychiatrical science. Dr. Laehr's literary contributions were few in number but he has distinguished himself by his practical work. He was struck by the fact that hardly anything had been done for nervous patients of the poorer classes. They could not be received into any private asylum, as the establishments of this kind were exclusively intended for the well-to-do, so he founded an institution near Berlin for the reception of patients of the poorer classes not actually insane but suffering from neurasthenia and hysteria. Physical and dietetic methods, together with manual work in the gardens and workshops, were here applied as curative measures. In consequence of this example other institutions of that kind were then established by municipal and other bodies for the sake of these unfortunate people.

Sept. 11th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Pellagra in Italy.

THAT the precautions taken by the Government and the local authorities have not been in vain in diminishing the prevalence of pellagra in Italy is abundantly proved by the statistics recently published in regard to this disease. In a period of 22 years—namely, from 1881 to 1902—the number of *pellagrosi* (as those afflicted with pellagra are called) fell from 104,000 in 1881 to 72,000 in 1899, and to 60,000 in 1902. In some provinces, as in Piedmont, the scourge has practically disappeared, whilst in the Veneto and Lombardy it has considerably diminished. On the other hand, there are localities in the Marches, in Emilia, and in Umbria where it is still on the increase, the provinces of Padua (with 15,000 cases), Bergamo (with 7000), Vicenza (with 6000), and Brescia (with 5000) being most severely affected. In the province of Perugia there are 5000 cases; in the Marches, where formerly pellagra was scarcely known, there are now 500 in Pesaro and 500 in Macerata, whilst in Emilia the provinces of Bologna and Ferrara have about 800 cases. In Latium, which until a few years ago was immune, several cases were recently reported in the commune of Onano, but any extension of the disease was promptly arrested by the energetic measures adopted by the Provincial Pellagra Commission, ably seconded by the provincial administration. Of these measures the most efficacious and essential is the active surveillance exercised upon the importation, sale, and consumption of maize, which is the food mainly used by the poorer classes of the rural population. Laws promulgated in July, 1902, and in November, 1903, provide for a first summary examination of all cargoes of imported maize and in case of dispute for a chemical and microscopical examination by experts of the suspected grain at a municipal laboratory or agrarian station. Should this fail to settle the question an appeal can then be made to one or other of the sanitary laboratories, indicated for the purpose by the Minister of the Interior. One is apportioned to each different group of provinces, that, for example, of the Superior School of Agriculture of Milan serving Liguria, Piedmont, and Lombardy; that of the School of Viticulture and Œnology of Conegliano being for the Veneto; that of the Public Hygiene in Rome for Latium and Sicily; and so on. Grain which has been pronounced unfit for human food may be used for the distillation of spirits and for the feeding of animals, but such grain or flour must first be "denaturised" before it is allowed to circulate as an article of commerce. This "denaturisation" is effected in various ways according to the purpose which the damaged material is judged fittest to serve, care being taken that the change in appearance thus produced is a permanent one which will render the unwholesome grain or flour easily recognisable. When it is destined for the food of cattle molasses from sugar factories, starches and their dregs, or the refuse of cheese and jam factories are employed. Oleine in the proportion of 5 per cent., or a like quantity of oil residue mixed with the pods of legumes, is used for the purpose, the whole being then seasoned with rock salt. Other substances have been suggested, such as powdered carbon, and some coloured tinctures, such as "Hoffmann's violet," of which latter 30 grains dissolved in half a pint of water suffices to stain permanently one hundredweight of maize or flour. The mixing is done by means of an irrigating pump or a spray. To determine whether a sample of maize is fit for human food the expert notes that it has the natural lustrous appearance and the characteristic sweetish odour and taste of the sound grain. If the surface is mouldy or the taste acrid or bitter the maize is condemned. Whilst part of the specimen may come up to the required standard and be sufficiently mature, well-dried, and in good preservation it is necessary to see that not more than 5 per cent. of the grains are damaged. To decide this chemical tests are also employed. When, on combustion, the quantity of ash exceeds 4 per cent. and when extracts made from the maize give, with ferric chloride, an evident phenolic reaction (indicating the development of mycetes), the grain is rejected. Other tests of good maize are that at least 80 per cent. of the grains should possess germinating power and that extracts made from it and injected into animals should not produce toxic effects. By such means and by energetic and vigilant control over the importation of maize into the country and over its supply to the population who use it for alimentary purposes much is being done to preserve the poor in the rural districts of Italy from the ravages of a terrible disease.

The First General Sanitary Congress.

The novel departure taken by the Italian medical deputies in Parliament in summoning the whole *personnel* of the sanitary service of the country, comprising not only medical men but also pharmacists and veterinarians, to meet in a general congress will take effect in Rome during the month of November. Professor Sanarelli of Bologna, who acts as secretary to the new "Fascio Medico Parlamentare" (Parliamentary Medical Union), which is responsible for this proposal, explains the objects of the Congress in the following letter of invitation which has been addressed to every person included in the above three categories throughout the entire kingdom:—

> The safeguarding of the public health tends more and more to grow in importance and to demand our attention and in proportion as its scope is enlarged and the objects with which it occupies itself increase in number so does the machinery by which it is effected become more complicated and specialised. New exigencies are daily arising for which the State must provide and new problems are constantly presenting themselves for solution so that a wise organisation of the sanitary services in their various ramifications becomes a truly important factor in the national prosperity and wellbeing. Whoever has at heart the amelioration of the condition of our people and the development and progress of our country and does not wish to hold himself outside that great intellectual and moral movement which in an ever-increasing degree is permeating and invigorating social solidarity cannot remain indifferent to such questions.
>
> It is, however, only natural that those who in virtue of their office enjoy the greatest opportunities for facilitating a speedy and happy solution of these problems should especially interest themselves in an endeavour to bring it about. For this reason it appears to those medical men who have been honoured by a legislative mandate that it is their special duty to unite all their strength in one single band, by means of which—sinking every distinction of party and eliminating every political end—they should be in a position to work harmoniously and uninterruptedly in the cause of the sanitary services and for the immediate settlement of the most urgent questions connected therewith. The programme to be followed out is twofold. On the one hand, keeping in view established scientific principles, an endeavour must be made to correct and to supplement in the interests of the general public those powers with which the central government and the other public administrations associated with it in public health matters have been intrusted. On the other hand, the duty must not be neglected of giving due weight to every legitimate claim and every just demand of the highly deserving classes enrolled in the sanitary services of the country. It is quite clear that for the attainment of the objects at which the various sanitary laws aim it is not sufficient to impose fresh duties upon the State, the provinces, or the communes, nor to exact new and stringent precautions on the part of the citizens; nor will it suffice to demand greater knowledge, harder work, and increased sacrifices from medical men, veterinarians, and pharmacists, whether these happen to be public functionaries or practitioners in the free exercise of their profession. To gain the end in view it is necessary that the position of all those who exercise the sanitary art in any of [illegible] effectively guaranteed. [illegible] new laws shall yield the [illegible] whose business it is to carry them out [illegible] it is necessary that those anxious and preoccupied about their personal and private affairs but should be placed in a position to discharge their duties with a mind

> relieved of the fear of seeing their best founded anticipations rendered vain and nugatory by [illegible]
>
> It will contribute gr[illegible] Medical Union be plac[illegible] country, so that it may learn precisely towards what goal their wishes tend and thus be enabled to place their desires in a concrete form before Parliament. There have not been wanting various authoritative associations who by their votes have made themselves interpreters of the aspirations of the various classes engaged in the sanitary services, but we cannot conceal from ourselves that these votes have not always been inspired by the same criteria and that the conclusions arrived at have not always been identical even in regard to fundamental questions, with the result that with such a disparity of views confronting it the Parliamentary Medical Union is deprived of any sure basis upon which to found an initiative. There is no doubt that were a [illegible] an ample discussion of them rendered [illegible] opinion would be eliminated. Tendencies [illegible] would in all probability find a common point in which by mutual concession they could meet and thus a great step forward would be taken towards the realisation of those reforms which can only be obtained if those interested in them make their demands with firmness and unanimity.
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> The Parliamentary Medical Union is most anxious that as many as possible of the representatives of the various sanitary classes should participate in such a conference and begs that you will therefore be good enough to favour with your presence the General Sanitary Congress for the Promotion of Professional Interests to be held in Rome next November when it is hoped that you will lay before it some valuable contribution from your own special knowledge and experience.

The results of the deliberations of this Congress will doubtless be watched for by other European nations with considerable interest, for the attempt to set up in the governing body of the country an intelligent standard of knowledge upon medical matters is a most important departure.

Sept. 7th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Special Cars for Consumptive Persons.

THE board of health of Jersey city has taken action against the use of ferries and waiting rooms by consumptives *en route* to a sanatorium. By resolution of the board all such cases must be received in Jersey city only from such means of transportation as have been set apart for this special purpose, and such persons shall not be allowed to use the public passage ways and waiting rooms. The resolution also provides that special cars must be provided for this class of travellers and all cars or trains used for this purpose must be thoroughly fumigated and disinfected under the direction and supervision of the board of health.

War on Flies and Insects.

The health authorities of Philadelphia have taken vigorous measures to protect the public from the infection of foods by flies and insects. Inspectors of the city have been directed to visit all milk-houses, butchers' shops, and grocery and candy stores and to instruct the owners to place a covering over articles of food. The board of health directs as follows :—

> The chiefs of divisions of nuisances, milk and meat and cattle inspectors, are hereby instructed to visit all retail dealers exposing for sale in front of their properties meats, fish, vegetables, fruits, candies, and cake and instruct the proprietors that a covering of some suitable material must be provided to protect the goods so exposed from flies and insects generally.

Yellow Fever in New Orleans.

The epidemic of yellow fever now prevailing in New Orleans illustrates forcibly the old and the new methods of controlling this scourge. In the country we have the old-fashioned "shot-gun" quarantine in full operation, but in the city the latest methods of sanitary science are taught and enforced. Of the former we read such reports as the following: "The Governor has directed the commander of the State Guard to detail as many men as might be necessary to act as guards on all trains entering the State and at all points where boats run in order to establish a strict State quarantine against all points where yellow fever is found to exist." It is reported that the State of Mississippi has five armed boats patrolling the coast to prevent fishermen from breaking through the quarantine lines and armed guards patrol the lines of railroads entering the State. On the other hand, the health officer of New Orleans has issued the following sensible advice and information:—"The spread of yellow fever is easily controlled by the application of very simple rules. Whether or not New Orleans will be rid of yellow fever at an early date depends in a very large measure on the degree of assistance each householder is willing to contribute to the work of eradication. Yellow fever is transmitted by the bite of a mosquito whose breeding places are cisterns, water barrels, and similar collections of water. This mosquito bites in the daytime usually and in order to become infectious must bite a patient during the first three days of the fever and then ten days must elapse before it is capable of transmitting the disease. Mosquitoes are not dangerous before the tenth day after biting the sick and the patient is not dangerous after the third day of the fever. Therefore protect from mosquitoes, day and night, all cases of fever for three days and then destroy before the tenth day after the beginning of the illness the mosquitoes that are in the room." The mayor has issued a proclamation, approved by the State board and the United States Public Health Service, which requires all citizens to allow no stagnant water on their premises; to screen all cisterns after treating the surface with oil; to place oil in cesspools and privy vaults; to sleep under nets; and to screen doors and windows.

A Post-Graduate Course for Surgeons of the Navy.

The Surgeon-General of the Navy has established a post-graduate course of study for the benefit of assistant surgeons who have been in the service but who did not have the advantage of special instruction at the beginning of their careers. The course has just closed and the surgeons in attendance have returned to their posts. There was no examination at the close of those who took the course and no ceremonies marked the event. The value of these opportunities to review the latest teachings of the medical sciences was fully appreciated by the assistant surgeons and they returned to their duties, not only much better prepared for them, but more reconciled to the isolation which is their lot when at work. It is proposed by the Surgeon-General to repeat the course annually, though there is some doubt if this will be feasible on account of the large number of vacancies which exist in the staff. There are 14 vacancies in the junior grade at the present time.

A State School of Sanitation.

The State board of health of New Jersey is considering the propriety of establishing a State school of sanitation and has appointed a commission to report on the subject. The object is a very worthy one and commends itself to those engaged in official relations to State sanitation. The purpose of the State board of health, as announced, is to instruct local health officers in their duties, especially in the management of epidemics of infectious diseases. The proposed school would consist of conferences in the various cities at which the instruction would be given followed by practical demonstrations. The school in each city would be open to all applicants for the purpose of popularising the subjects under discussion and thus widely disseminating information.

The Sanitation of Railroad Cars.

The public interest in the ventilation and cleanliness of railroad cars has reached a degree of intensity that has found expression in a resolution of inquiry introduced into the last Congress, to the following effect :—

> The sum of $10,000 is appropriat[illegible] direction of the Surgeon General of [illegible] purpose of investigating the possib[illegible] diseases in street cars and railroad passenger cars through the improper or imperfect ventilation thereof, and of the possible infection of meats and fruits and other perishable food products through the improper or imperfect ventilation of freight cars engaged in transporting the same, to the end that if, in his opinion, it is thought advisable, he shall recommend legislation for the regulation of the ventilation of railroad passenger and freight cars engaged in interstate commerce.

The Titles of Proprietary Medicines.

The section on Pharmacology and Therapeutics of the American Medical Association, at its recent meeting, passed a resolution deploring the present necessity of trade names and titles, but the evils of substitution are so prevalent that, in the interests of honest and progressive pharmacy, the use of such names and titles cannot be avoided. In the opinion of the section many, if not all, of the objectionable features of proprietary products can be *eliminated*, *first*, by the use in connexion with the trade name, of some subtitle which will express in scientific terms the nature and character of its composition; and secondly, by the use on the label or in the disseminated literature, of a descriptive formula which will exhibit the character and proportions of the active constituents.

Sept. 2nd.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Bubonic Plague.

BRISBANE, Ipswich, and Maryborough, towns in Queensland in which plague has occurred, have been officially declared free from that disease. Plague-infected rats are still found in Sydney and one fresh case of plague has been reported in a professional rat-catcher.

Typhoid Fever at Bendigo.

Typhoid fever occurs in Bendigo, Victoria, seven times to once that it occurs in Melbourne. The chairman of the board of public health of Victoria, Dr. W. P. Norris, has attributed the prevalence of typhoid fever in Bendigo to contamination of the water-supply owing to the insanitary condition of a small township called Lauriston, situated on the banks of the river Coliban, from which the water-supply of Bendigo is derived. He was also of opinion that local conditions were a factor in the incidence of typhoid fever at Bendigo. The board decided that if the local municipality at Lauriston did not remedy the conditions complained of within two months an order would be issued compelling the council to take action. The Health Act of Victoria makes the local bodies responsible for local health conditions and the board of health has only a general supervision over the local authorities. It has, however, compulsory powers when the local authorities fail, powers which are hardly ever exercised. The difficulty in the present case arises from a difference of opinion between the health authorities and the engineer of water-supply as to the suitability of suggested sites for sanitary depôts.

Leprosy among Kanakas, and Leprosy and Arsenical Poisoning.

A strange sequel to a case of alleged criminal poisoning with arsenic, tried in Sydney in May last, has been the discovery that the poisoned man, a Kanaka, and another Kanaka, who was the principal witness, are both suffering from mixed leprosy. As one of the symptoms regarded as indicative of arsenical poisoning was a peripheral neuritis of the hands, the question was raised whether all the symptoms may not have been due to leprosy and not to arsenic. Briefly the facts are that a woman named Davis was living with a Kanaka named Tanna, and another Kanaka named Williams also stayed at the house, notwithstanding her objections to his doing so. In November last, after eating some stew given him by Davis, Williams was very sick and he was again ill after eating some rice she gave him. He refused to eat some fish because it had a bitter taste; some dogs ate it and died. Strychnine was found in their stomachs. It was proved that Davis had bought arsenic and strychnine from a druggist (to destroy some ants with, she said). She was first tried at Grafton in April last, when the jury disagreed. At the Central Criminal Court in Sydney in May she was found guilty and sentence of death was recorded. Subsequently Williams was found to be suffering from mixed leprosy and the Attorney General ordered an inquiry by the judge who tried the case. Evidence was given by Dr. J. Ashburton Thompson, Dr. R. J. Millard, Dr. Sinclair Gillies, Mr. G. H. Taylor, and Dr. F. Tidswell to the effect that Williams was suffering from mixed leprosy, mainly tubercular, but that the symptoms described at the previous trial were due to arsenical poisoning and not to leprosy. The neuritis present had improved, which would not have been the case if due to leprosy. Dr. S. H. McCulloch was called by Davis's counsel and said he could not state that the symptoms described were due to arsenic; they might have been due to alcoholic poisoning or to leprosy and there was no evidence that Williams had arsenic in his system. While lepers never recovered their symptoms might improve. The judge sent in a report to the executive council and the sentence of death was commuted to imprisonment for life with hard labour. In consequence of the discovery that these two Kanakas are suffering from leprosy the Minister of Health requested the Board of Health to have a medical examination of all the Kanakas in the north coast districts. This has been done and a report received that no other case of leprosy could be found. The dwelling occupied by the two lepers has been destroyed by fire.

Coroner and Medical Man.

At an inquest concerning the death of a patient at the Alfred Hospital, Melbourne, during an operation, the coroner, Dr. R. H. Cole, addressed Dr. W. W. Hearne, the anæsthetist in the case, thus:—

> I think it necessary to give you the usual warning. Do you wish to make any statement? You are not bound by any promise of favour, or by any threat that may have been made against you, to induce you to make any confession, but whatever you do say will be taken down in writing and may be used against you hereafter.

Dr. Hearne protested, saying he was subpœnaed and was prepared to answer questions. The operating surgeon and other medical men had given evidence in the case and were not warned. Why was he singled out? The coroner said that the man died from chloroform and Dr. Hearne, who administered it, was the sole person concerned. Dr. Hearne replied that it was not shown he died from chloroform—the pathologist said that he died from heart failure—and it might be from the shock of the operation. He was prepared to give evidence if the coroner wished. The coroner said it was not a question for him and closed the evidence. He found that the man died from chloroform poisoning and that the death was due to misadventure. He also made the following statement:—

> I don't think Mr. Hearne has been treated differently from any other person who is likely or liable to be implicated in a charge of *criminal neglect.* Medical men have no special privileges. In other chloroform cases I have cautioned medical men without any protest on their part. They understand that, as coroners, we have a duty to perform. The duty is often unpleasant and it is most unpleasant of all when the duty of medical men is in question. When a medical man administers chloroform he promises the reasonable amount of skill which every medical man should bring to bear. When the patient [illegible] ot concerned. The law states clearly [illegible] criminal misconduct when he is grossly [illegible] tive and the person under his charge dies. In this case there is very little doubt in my mind that the patient died from the administration of chloroform and the question I have to decide is whether he died through the gross ignorance or the criminal inattention of a medical man. The public has a right to be protected in these cases. I have seen cases of chloroform administration in my student days when the medical man watched the operation instead of watching the patient. In a case of that sort there would be some criminal inattention for which the medical man should have been answerable if the patient died. In this case I may take it that the chloroform was administered by a qualified medical man of great experience. This is in favour of the fact that the administration was carried out with a proper degree of skill. There is no evidence of criminal inattention except the fact that the man died. On that fact I am not going to say that Mr. Hearne is liable.

The Victorian branch of the British Medical Association wrote to the Attorney-General protesting against the attitude of the coroner and suggesting that he should be instructed to administer a caution to medical witnesses only in cases where the evidence points to some neglect. The Attorney-General replied that he could not "give a coroner instructions as to the exercise of his judicial duties." The Premier was then asked to receive a deputation from the medical profession, but it was decided to wait on the Attorney-General. Accordingly a very large and representative deputation presented the views of the profession on the matter. It was pointed out that Dr. Hearne was honorary anæsthetist to the hospital and the patient *in extremis* when the operation was performed; that no evidence was given showing any carelessness or want of skill, and no evidence even that the patient died from chloroform. By his attitude the coroner had prevented the anæsthetist giving evidence and so could not really find out the true cause of death (as a matter of fact, the anæsthetic mainly used was ether); and that if medical men were to be treated in this way they would decline to give their services to public institutions and to give anæsthetics at all, unless well paid, so that the public would suffer. The Attorney General said that he could only repeat what he had said by letter, that he could not interfere with a coroner in the execution of his duty. He had hoped that the deputation would have made some suggestion for an alteration of the law. As it had not done so he could do nothing.

August 7th.

Obituary.

PHILIP HENRY MULES, M.D. EDIN., M.R.C.S. ENG., L.S.A.

GREAT regret is felt at the death of Dr. Mules, not only in the neighbourhood of Gresford, Denbighshire, where his last years were passed, but in the Manchester district, the scene of his chief work, where he was well known and had many friends. He was the youngest son of the Rev. John Hawkes-Mules of Ilminster, a member of an old Somersetshire family whose lineage could be traced without a break to Normandy, where it existed before the Norman invasion. Landed estates have been held by his ancestors in Somerset from the time of Edward III. and his eldest brother still retains a small part of the original property. Dr. Mules was born on May 31st, 1843, and died, aged 62 years, on Sept. 1st. He had been ill about a month but his death was unexpected and came as a great shock to his friends, for his activity, his alertness of mind and body, his well-knit, wiry frame, and his handsome presence were so marked that it was difficult to think of him in association with death. His medical training began at St. George's Hospital, London, and was continued at the University of Edinburgh, where he took his M.B. degree in 1867, and in the same year he became a Member of the Royal College of Surgeons of England and a Licentiate of the Society of Apothecaries. In 1870 he obtained his M.D. at Edinburgh. For several years he was in general practice at Bowdon but as time went on he was more and more drawn to ophthalmic work, for which he had a special bent. In 1884 at Paris he gained the prize medal of the International Society for the Amelioration of the Condition of the Blind, and in 1887 the prize medal of the Parisian Society for the Protection of Infant Life. But his name is known wherever ophthalmic surgery is cultivated, abroad or in this country, by his operation for the removal of the eyeball—eviseration of the globe and introduction of an artificial vitreous—which allowed the artificial eye to move coördinately with its fellow. For several years he was one of the surgeons to the Manchester Royal Eye Hospital, the Altrincham General Hospital, and the Altrincham and District Eye Hospital, in all which positions he did much valuable work. About nine years ago he gave up active practice and went to live at the village of Gresford, a few miles from Wrexham. At the Old Parsonage, an almost ideal country house, with its extensive surroundings, he was able to indulge in his great love for the cultivation of hardy flowers and plants, and it would have been difficult, perhaps, for him to say—apart, of course, from all question of duty—whether the pursuit of his profession or the cultivation of his flowers had for him the greater attraction. His knowledge of plants was very extensive and his acquaintance with their special requirements as to soil, situation, and treatment was remarkable in an amateur. Among horticulturists his name was well known and he was a frequent contributor to the gardening journals. At a recent flower show at Chester he was all life and genial energy and had contributed a fine collection of plants "not for competition," and to those who saw him then for the last time his death was a severe shock. Several years ago he wrote two small works of fiction, "Jabez Hodges" and "George Doggett, Keeper," both showing imagination and literary skill and a thorough knowledge of country life and pursuits. Indeed, his love of sport—he was a good shot and a skilful fisherman—was all his life long one of his sources of pleasure and no doubt did much to maintain his health and activity. For 10 or 12 years he was a frequent contributor to medical journals, chiefly on subjects relating to ophthalmology. When he went to Gresford he did so with the intent to lead a retired life, but his active mind soon drove him to take rooms in Chester where he practised as an ophthalmic consultant. About five years ago, on the death of the late Dr. Charnley, he became honorary consulting ophthalmic surgeon to the Wrexham Infirmary, where his services met with warm appreciation. At Gresford he took great interest in local affairs of a public and philanthropic character and for some years was one of the churchwardens. He was a prominent member of the Chester Natural History Society and at the time of his death was President of the Chester Medical Society. Although his original work was done many years ago his mental powers were as great and bright as ever, and at 62 years of age he is rightly regarded by friends as one cut off in his prime. His cheerful, somewhat optimistic temperament, coupled with a kindly, graceful courtesy, gave to his manner a charm which all felt and which all his friends will miss. Dr. Mules leaves a widow and a family of four daughters and two sons, one of whom has entered his father's profession.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced: Dr. J. A. Gläser, formerly one of the medical superintendents of the new Hamburg General Hospital. His name is well known in German medical literature as a formidable and humorous upholder of certain clinical and therapeutical doctrines.—Dr. Karg of Zwickau, in consequence of a motor-car accident. He was formerly a member of the Leipsic teaching staff, when he worked principally on bacteriology in connexion with surgery.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Budapest:* Dr. Kreuter has been recognised as *privat-docent* of Surgery and Dr. Béla-Fenyvessy as *privat-docent* of Experimental Pharmacology.—*Clausenburg:* Dr. Ludwig Makara of Budapest has been appointed to the chair of Surgery in succession to Dr. Josef Brandt resigned.—*Düsseldorf (Academy for Practical Medicine):* Dr. Schlossmann of Dresden, where he is Lecturer on Hygiene at the Technical School, has been offered the chair of Children's Diseases with charge of the municipal children's hospital.—*Groningen:* Dr. Visser has been recognised as *privat docent* of Medical Chemistry.—*Königsberg:* Dr. Theodor Cohn has been recognised as *privat-docent* of Urology.—*Marburg:* Dr. Ludolf Brauer has been promoted to the chair of Medicine with the Direction of the Medical Clinic, vacant by the retirement of Professor Mannkopf.—*Naples:* Dr. Gaetano Lodato of Palermo has been recognised as *privat-docent* of Ophthalmology.—*Padua:* Dr. Giovanni Cagnetto has been recognised as *privat-docent* of Pathological Anatomy.—*Pavia:* Dr. Antonio Pensa has been recognised as *privat-docent* of Anatomy.—*Pisa:* Dr. Ernesto Cionini and Dr. Alberto Michelazzi have been recognised as *privat-docenten* of Internal Pathology.—*Prague (German University):* Dr. Hirsch has been recognised as *privat-docent* of Ophthalmology and Dr. R. Kahn as *privat-docent* of Physiology.—*Prague (Bohemian University):* Dr. Wenzel Matys and Dr. Zdenko Nejedly have been recognised as *privat-docenten* of Ophthalmology.—*Rome:* Dr. Scipione De Rossi and Dr. Pietro Gallenga have been recognised as *privat-docenten* of Internal Pathology; Dr. Giuseppe Betagh as *privat-docent* of External Pathology; Dr. Piero Chiarini as *privat-docent* of Ophthalmology; and Dr. Giovanni Memmo as *privat-docent* of Experimental Hygiene; Dr. Alessandro Baldoni has been recognised as *privat-docent* of Materia Medica and Experimental Pharmacology.—*Santiago:* Dr. Eduardo del Rio y Lara has been appointed to the chair of Histology and Pathological Anatomy.—*St. Petersburg (Military Medical Academy):* Dr. Constantine Sêrapin has been recognised as *privat-docent* of Surgery.—*Turin:* Dr. Giovanni Lasio has been recognised as *privat-docent* of External Pathology.—*Vienna:* Dr. Friedrich Reuter has been recognised as *privat-docent* of Forensic Medicine; Professor Kraus of Berlin having declined the offer of the late Professor Nothnagel's chair of Medicine this has been offered to Professor von Jaksch of Prague. Dr. Neusser, one of the professors of Internal Medicine, has received a patent of nobility.

LITERARY INTELLIGENCE.—The F. A. Davis Company of Philadelphia announces the early publication of a "Treatise on the Motor Apparatus of the Eyes, embracing an Exposition of the Anomalies of the Ocular Adjustments and their Treatment, with the Anatomy and Physiology of the Eye Muscles and their Accessories," by Dr. George T. Stevens of New York. It is to be profusely illustrated in colours and in black and white, mostly from the author's own drawings. The illustrations in comparative anatomy are stated to be of especial interest. It will be complete in one royal octavo volume of about 500 pages.

MIDWIVES IN WILTSHIRE.—A report has been recently issued by the medical officer of health of the county of Wiltshire as to the women practising in that county as midwives. They are 500 in number and of these 125 were registered at the time when the report was drawn up.

DEATH OF A CENTENARIAN.—It is stated that Mrs. Hannah Arthur who died in Portsmouth on Sept. 12th had attained the age of 100 years. She was the widow of a farmer and the greater part of her life was passed at St. Martin's, Looe, Cornwall.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

APPLEYARD, WILLIAM, M B, B S Lond, M R C S Eng, L R C P Lond [illegible]

BARKER, [illegible] Reside[illegible] Maida vale, London, W.

DE PINNA, HERBERT ALFRED, M R C S Eng, L R C P Lond, L D S Eng, D D S Ontario has been appointed a Medical Officer (Ship's Surgeon) to the Peninsular and Oriental Steam Navigation Company

DUNCAN, ALEXANDER, M B, C M Glasg, D P H Cantab, has been appointed Medical Officer of Health of Merthyr Tydvil

EADES, ALBERT IRWIN, L R C P, L R C S Irel, has been appointed Medical Superintendent of the North Riding Asylum, at Clifton, Yorkshire

GITTINS, ALFRED B., M R C S Eng, L R C P Lond has been appointed Temporary Medical Officer of part of the Whitmore District of the Newcastle Union, Staffordshire.

MOFFAT, JANET A S, M B, Ch B Edin, has been appointed Resident Medical Officer at the Potteries Joint Hospital, Bucknall, Staffordshire.

O'HALLORAN, JOHN, L R C P, L R C S Irel, has been appointed Dispensary Medical Officer at Scariff, co Clare.

WILD, CHARLES H, L R C P Irel, L R C P Lond, M R C S Eng, has been appointed Medical Officer and Public Vaccinator for the Prescot District.

WILLIAMS, RICHARD T, L R C P, L R C S Edin, L F P S Glasg, has been appointed Medical Officer of the Cwmavon District of the Neath Union

YOUNG, RALPH, M D Durh, has been appointed Medical Officer of Health of Royton, Oldham.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index)

BRIGHTON THROAT AND EAR HOSPITAL, Church street, Queen's road — Non resident House Surgeon for six months, renewable Salary at rate of £75 per annum.

BRISTOL EYE HOSPITAL.—House Surgeon Salary £80, board and residence.

CROYDON GENERAL HOSPITAL.—Senior and Junior House Surgeons Salary, senior position £105, junior position £60, with board, laundry, and residence

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S E —Eight qualified Clinical Assistants

GREAT NORTHERN CENTRAL HOSPITAL, Holloway.—Senior House Surgeon, Senior House Physician, Two Junior House Surgeons and One Junior House Physician for six months Salary of senior officers at rate of £60 per annum and of junior officers at rate of £30 per annum with board and residence

HASTINGS, ST LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon Honorarium 10 guineas for six months, with residence, board and washing

HEREFORDSHIRE GENERAL HOSPITAL.—House Surgeon Salary £100 per annum, with board, apartments, and washing

ITALIAN HOSPITAL, Queen square, W C —Honorary Anæsthetist

LEYTON, WALTHAMSTOW AND WANSTEAD CHILDREN'S AND GENERAL HOSPITAL, Orford road, Walthamstow —House Surgeon Salary £100 per annum, with rooms, board, &c.

LIVERPOOL, CITY OF, FAZAKERLEY HOSPITAL FOR INFECTIOUS DISEASES —Medical Superintendent Salary £400 per annum, increasing to £500, with house, coal, and lighting

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—House Surgeon Salary £60, with board and residence

MAIDSTONE, KENT COUNTY OPHTHALMIC HOSPITAL.—House Surgeon Salary £100 with board

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer for the Crossley Sanatorium, Delamere Forest, Cheshire Salary £50 per annum, with board apartments, and laundry

MANCHESTER SOUTHERN AND MATERNITY HOSPITAL.—Resident House Surgeon Honorarium at rate of £50 per annum, and board

NEW HOSPITAL FOR WOMEN, Euston road.—Two Female Clinical Assistants

NORFOLK AND NORWICH HOSPITAL.—Honorary Assistant Physician

NORTHAMPTON GENERAL HOSPITAL.—Assistant House Surgeon Salary £50 a year, with apartments, board, washing, and attendance.

READING, ROYAL BERKSHIRE HOSPITAL.—House Physician for six months. Salary £80 per annum, with board, lodging, and washing Also House Surgeon Salary £80 per annum with board, lodging and washing Also Assistant House Surgeon. Salary £60 per annum, with board, [illegible]

REETH UNION.—Medical [illegible] [illegible]dical Officer Salary £40 per ann[illegible] and £45 for District Medical Of[illegible] [illegible]s for Muker Vaccination District

ROYAL COLLEGE OF S[illegible] — in Dental Surgery

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City road, E C — House Physician for six months Salary at rate of £60 per annum, with board, lodging, and washing

ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS EYE HOSPITAL), City road, E C —Senior House Surgeon. Salary at rate of £100 a year, with board and residence

ST. THOMAS'S HOSPITAL.—Assistant Pathologist and Demonstrator of Morbid Anatomy Also Physician for Mental Diseases Also Two Dental Surgeons

SALISBURY GENERAL INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments board, and lodging Also Assistant House Surgeon Salary £50 per annum, with apartments, board, and lodging

SEAMEN'S HOSPITAL SOCIETY, Greenwich, S E —DREADNOUGHT HOSPITAL, Greenwich - House Physician Salary £65 per annum. House Surgeon Salary £65 per annum Junior Resident Medical Officer Salary £40 per annum At the BRANCH HOSPITAL, Royal Victoria and Albert Docks — Senior House Surgeon Salary £100 per annum, House Surgeon Salary £50 per annum, with board, residence, and washing in each case

SHEFFIELD, CORPORATION OF, FEVER HOSPITALS.—Second Assistant Medical Officer Salary £130 per annum, with board, lodging, and washing

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon, unmarried, for six months renewable Salary at rate of £70 per annum, with residence, board, and washing

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and laundry

VICTORIA HOSPITAL FOR CHILDREN, Tite street, Chelsea, S W — House Surgeon for six months Honorarium of £25, with board and lodging

WESTERN GENERAL DISPENSARY, Marylebone-road, N W.—Honorary Anæsthetist.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon Salary £100 per annum, with board, lodging, and washing

Births, Marriages, and Deaths.

BIRTHS.

DRABBLE.—On Sept 7th, at the Manor House, Walton on Thames, the wife of George White Drabble M B, of a daughter

EDLESTON.—On Sept 5th, at Ashenfell, Baslow, Derbyshire, the wife of R Shafto C Edleston, M R C S, L R C P Lond, of a daughter

EDMONDS.—On August 11th, at Georgetown, Demerara, the wife of F R Edmonds, M R C S L R C P, of a son

FOSTER.—On Sept 5th, at Horton lane, Bradford, the wife of Albert Ernest Foster, M R C S, L S A., of a son

GANGE.—On Sept 6th, at Court street, Faversham, the wife of F. W Gange, M D, of a son

GUMMOW.—On Sept. 8th, at Bosmere, Northfield, the wife of J. F. Gummow, M R C S, L R C P Lond, of a son

LONGHURST.—On Sept. 6th, at Holmdene, East Molesey, the wife of Percy A Longhurst, M R C S, of a son

MADDEN.—On August 28th, at Cairo, the wife of Dr. F. C. Madden of a son (stillborn)

PATCH.—On Sept 8th, at Dagshai, India, the wife of Lieutenant Burnet G Patch, R A M C, of a daughter

WATERS.—On Sept. 7th, at Dundee, the wife of H. G. Waters, M R C S Eng, L R C P Lond, of a son.

MARRIAGES.

ALLAN—POWELL.—On Sept 6th, at St. Margaret's parish church, Westminster, by the Rev S Kirshbaum, M A, W Carrick Allan, M D, to Norah Rye, daughter of Henry Richard Powell.

ARCHER—PICKERING.—On Sept 6th, at St. George's Church, Perry hill, Catford, Kent, by the Rev Canon Muriel, Archibald Archer, L D S, R C S, to Florence Emily, daughter of Alexander S. Pickering

FRENCH—PIPE WOLFERSTAN.—On Sept 7th, at St John the Baptist's Church, Holland road, by the Rev F W Pakenham Gilbert, M A, John Gay French, M B Lond, M R C S Eng, L R C P Lond, to Elinor May, daughter of F S Pipe Wolferstan

HEDLEY—HORNUNG.—On Sept. 6th, at St Hilda's, Middlesbrough, by the Rev W J Constable of Uppingham, Edward Williams Hedley, M D, to Winifred Agnes Gillott, daughter of Theodore Hornung

TAYLOR—COOKE. On Sept. 11th, at the parish church, Litcham, Norfolk, by the Rev Charles Bingham, James Taylor, M D, F R C P, to Elizabeth Marian, [illegible]

WILKINS—FRENCH.—On Sept. 7th, [illegible] by the Rev T Lee French, Colonel J[illegible] M S, D S O, to Dora Sophia Lee, daughter of the Rev Frederic French.

DEATHS.

BELL.—On Sept 3rd, at his residence, 9, Sussex square, Brighton, T Vernon Bell, M D Buried in the Edinburgh Cemetery at Warriston

BROKE SMITH.—On Sept 4th, at Cheltenham, Philip Broke-Smith, M D, Surgeon Major General (retired), A M S, aged 71 years

GIBAUT.—On Sept 6th, Walter Moses Gibaut, late Staff Surgeon, A M D, at Ashmore, Park road, Surbiton, in his 74th year

HALL.—On Sept. 10th, at 40, Victoria street, Sheffield, John Hall, M R C S, L S A., in his 78th year

HOWELL.—On Sept. 5th at the Old Vicarage, Wandsworth, Thomas Symonds Howell, M R C S Eng L S A, aged 82 years

SAVORY.—Sept 8th, at The Park, Mitcham, Joseph Egerton Savory, M R C S, in his 74th year.

WOODWARD.—On Sept 4th, at Hill View, St. John's, Worcester, William Woodward, M D, aged 75 years

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

DIFFICULTIES UNDER THE VACCINATION ACTS.

WE have received copies of a correspondence between a public vaccinator and a general medical practitioner which seems to us to be worthy of comment in the light of a leading article which appeared in our columns on August 26th. The story is briefly this. The public vaccinator, in accordance with Section 1, paragraph 3, of the Vaccination Act of 1898, sent the usual form of notice to the parents of the child informing them of his intention to call and to offer to vaccinate the child. Before his visit the notice was returned to him endorsed as follows: "I must ask the public vaccinator to desist visiting this patient of mine who shall be vaccinated by me. The practice of visiting other practitioners' patients is a gross misdemeanour against professional etiquette." This endorsement was signed by the local practitioner attending the family to which the child belonged. The public vaccinator upon receipt of this notice immediately called upon the practitioner in question who happened to be out. He therefore left his card and went on to see the child's parents, when the mother said that she quite understood that the public vaccinator was bound to send the notice and to pay the visit, but that they preferred having their own medical man. A correspondence between the public vaccinator and the local practitioner then ensued and in one of the letters the medical practitioner remarked: "I uphold every word of the endorsement on the form I returned to you. This is only one of many instances where my patients were visited and vaccinated by you." In another letter he says: "My endorsement on the form is based on many previous occasions when you vaccinated, although you were told by the parents of their family medical man." In the leading article to which we have referred above we said: "All general practitioners would do well to learn about the duties and methods of the public vaccinator's work," and we think that this case is a very fair illustration of what we had in mind when we wrote the above sentence. The practitioner in question should have been aware that the public vaccinator had no option under the Vaccination Act but to visit the child whose name had been duly handed to him by the vaccination officer. The practitioner in question was perfectly within his right in saying that he would vaccinate the child himself but we think that he was most unfortunate in the manner in which he intimated this intention to the public vaccinator. It would have been quite easy to have written a courteous note saying that he intended to vaccinate the child himself, and to call a simple duty performed under an Act of Parliament ' a gross misdemeanour against professional etiquette" is unwise.

RETENTION OF URINE AFTER LABOUR.

To the Editors of THE LANCET.

SIRS,—Could any of your correspondents give any hints as to treatment of retention of urine after delivery, which has now continued one month? Catheterism is performed twice daily. Tonics—quinine, strychnine, &c.—have been given without any effect. The labour was very protracted and after version the head had to be extracted with forceps.

I am, Sirs, yours faithfully,

A SUBSCRIBER OF TWENTY-FIVE YEARS.

Leeds, Sept. 11th, 1904.

"MATROZONE."

MATROZONE is said to be the crowning success of 30 years' patient scientific investigation and experiment of the late Rev. H. Vian-Williams, and if we are to believe the advertisements it promotes natural, rapid, and easy accouchements and insures healthy, beautiful, and bright children. The reverend gentleman, we are informed, who originally was intended for the medical profession, was profoundly impressed when a young man by the death of a relative in her first confinement. Vividly realising the peril and pain involved in childbearing he determined to ascertain if no drugs could be found gently and scientifically to prepare the system of the prospective mother for the great strain to be brought upon it. We are told that all through one pastorate over a period of some 33 years he kept this purpose in view and examined, studied, and experimented upon drug after drug until he found some which gave proof that when accurately and proportionately combined they could render incalculable help in every case experimented upon. The first thought of the discoverer was to be a benefactor of the whole race and to publish his discovery abroad, but second thoughts prevailed and he came to the conclusion that there was money to be made. Arrangements have accordingly now been made by which it is possible to buy the preparations at a price which will place them within the reach of all those silly and credulous people who may wish to waste their money in purchasing them. The reverend author of the treatment in his earlier investigations met with many disappointments but, as we are told, he slowly and surely was guided to the use of the present preparations and he appears to have had the inestimable advantage of being able to test them through many years on ladies connected with all branches of the Christian Church and of the utmost reliability of character. Happy pastor, to be thus trusted! Happy ladies, to have had such opportunities! The usual number of illustrative cases are appended to the pamphlet, all completely i definite but all uniformly showing the most wonderful results fro the use of Matrozone. The credulity of the public indeed pass human understanding.

RIDERS TO THE VERDICTS OF CORONERS' JURIES.

To the Editors of THE LANCET.

SIRS,—May I be permitted to offer the following remark upon the case reported in THE LANCET of Sept. 9th, p. 80 under the above heading? 1. That some riders contain statement which cannot be justified is no reason for the suppression of a riders. 2. The special rider complained of is open to objectio (a) because it was made against an absent person; (b) becau according to the coroner's summing up it depended upon a unproved hypothesis; and (c) because the person aspersed wa afforded no opportunity for explanation or reply. 3. The onl inference affecting the practice of attaching riders to verdict is fairly deducible from the given example, and it is this—that no coroner should accept a rider from a jury if there be contained in such rider adverse comment upon the conduct or language of persons who have not been afforded the fullest opportunity for refuting their censors. 4. Riders are often necessary and of public utility and entirely free from the objection stated; indeed, in many instances which could be given from my own experience such riders have been essential to the protection of reputations against current aspersions that are none the less dangerous i that they are not publicly uttered. 5. Finally, in my own practice I uniformly refuse to accept any rider which reflects upon an absent person. I consider that to be a rule of practice which cannot b justly or wisely departed from in the coroner's court, nor, indeed, in any other department of civil life.

I am, Sirs, yours faithfully,

COUNTY CORONER.

Sept. 11th, 1905.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—In reply to "W. H. G.'s" query (p. 806), "Wanted—a Home," the youth, if certifiably imbecile (under the Act of 1886), would be admissible to any of the institutions registered under that Act, such as Earlswood, the Royal Albert Asylum, Lancaster, the Eastern Counties Asylum, Colchester, or the private institution at Normansfield, Hampton Wick. Special accommodation for paying cases is provided at the public institutions. If, however, the youth cannot be certified as imbecile there are certain private homes for mentally feeble cases of which I should be pleased to give the names to your correspondent.

I am, Sirs, yours faithfully,

G. E. SHUTTLEWORTH.

27, New Cavendish-street, W., Sept. 12th, 1905.

DEATH IN JUDICIAL HANGING.

To the Editors of THE LANCET.

SIRS,—I hope you will find it convenient to publish the following letter in your valuable paper. As I am a medical officer in the Colonial Service, for obvious reasons I have used a *nom de plume*, but I inclose my card.

I suppose that it is uncommon for an ordinary practitioner to be called upon to give evidence as to the cause of death in judicial hanging. The wording of the certificate that is expected in a properly conducted judicial hanging is "dislocation of the neck" as the cause of death, and this certificate is required without a *post-mortem* examination to verify. That this is often the cause of death I have ascertained by post mortem dissection and the dislocation occurs between the first and second cervical vertebræ. Now I wish to ask if any of your correspondents could tell me if it is possible to diagnose post mortem such a dislocation without dissection. Up to the present I have entirely failed to do so.

I will add a few observations that I made in four cases of judicial hanging which I attended as medical officer. They concern the time the heart continues to beat after the drop occurs. In each case the drop was 11 feet, and everything apparently went smoothly.

CASE 1.—The heart was observed beating five minutes after the drop.

CASE 2.—The executed prisoner expanded his chest in an attempt to inspire two and a half minutes and his heart ceased beating four and a half minutes after the drop.

CASE 3.—An attempt to inspire occurred three and a half minutes and the heart did not cease beating till nine minutes after the drop.

CASE 4.—An attempt to inspire occurred four and a half minutes after and the heart stopped six and a half minutes after the drop.

It appears, therefore, that death is by no means instantaneous in judicial hanging.

I am, Sirs, yours faithfully,

ENQUIRER.

August 9th, 1905.

"DR. HALL'S HYGIENE CO."

A CORRESPONDENT writes under the signature of "*M.D.*" as follows: "Is it possible to do anything to stop the door-to-door distribution of this most pernicious pamphlet?" He incloses the pamphlet which is in the unvarying style of quack literature and issued by a quack institution calling itself "*Dr. Hall's Hygiene Co.*" The pamphlet deals in the usual manner with diseases peculiar to women and also with cancer. As a specimen of the statements contained in this pamphlet we may quote the following: "*Unless women know how to prevent it few reaching 45 are going to escape cancer.*" "*Do not neglect yourself, for ovaritis at 35 produces cancer at 45.*" We need not say that these statements have absolutely no foundation but we regret to say that in the present state of the law there is no means to stop either the dissemination of such untruths or of bringing those to book who issue such pamphlets.

THE STARTING OF MEDICAL PRACTICES.

To the Editors of THE LANCET.

SIRS,—While Dr. A's practice was in the market Dr. B came to see Dr. A and investigated his practice. He then made a ridiculously poor offer for it which Dr. A naturally refused. Two months later I bought the practice. Within a month from the commencement of my introduction Dr. B opened a surgery within 200 yards of Dr. A's surgery. Is Dr. B's action in accordance with the rules of medical etiquette? and is it possible for me to take any action against Dr. B?

I am, Sirs, yours faithfully,

Sept. 8th, 1905. M.B.

*** If Dr. B secured access to Dr. A's books so as to gauge his own risks in starting practice in opposition to Dr. A he did a dishonourable thing. But how is such conduct on his part to be proved?—ED. L.

◆

Atlas.—We do not think that the fees mentioned are in any way unreasonable but we suggest that a uniform fee of £3 3*s.* per week would probably be paid with less demur than the sums mentioned by our correspondent.

X.—We have our correspondent's letter under consideration.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (18th).—London (.30 P.M.), St. Thomas's (3.30 P.M.), St. 's (2.30 P.M.), Middlesex (1.30 P.M.), sea (2 P.M.), Samaritan (Gynæcologic Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.).

TUESDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (20th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Georg (2 P.M.), National Orthopæ Samaritan (9.30 A.M. and 2.30 Northern Central (2.30 P.M.), 2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.).

THURSDAY (21st).—St. (3.30 P.M.), University George's (1 P.M.), Londo (1.30 P.M.), St. Mary's (London (2 P.M.), Gt. N Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.). Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.).

FRIDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (23rd).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

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LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (18th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. G. Adamson: Clinique. (Skin.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M. Dr. Arthur: Skiagraphy.

TUESDAY (19th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Dr. J. E. Squire: Clinique. (Medical.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M. Dr. Shuter: Anæsthetics.

WEDNESDAY (20th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Mr. T. P. Legg: Clinique. (Surgical.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—3 P.M. Mr. Bidwell: Intestinal Surgery.

THURSDAY (21st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M. Dr. Arthur: Skiagraphy.

FRIDAY (22nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, (22, Chenies-street, W.C.).—4 P.M. Dr. J. Horne: Clinique. (Throat.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M. Dr. Shuter: Anæsthetics. 4.30 P.M. Mr. Bidwell: Intestinal Surgery.

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METEOROLOGICAL READINGS.

(Taken daily at noon by Steward's Instruments.)

THE LANCET Office, Sept. 14th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 8	29·77	S.W.	...	118	69	55	55	59	Cloudy
" 9	29·83	S.W.	0·01	84	63	57	57	59	Cloudy
" 10	29·68	S.W.	0·18	116	67	55	54	63	Fine
" 11	29·91	S.	0·04	74	62	55	54	57	Overcast
" 12	30·20	W.	...	110	67	50	50	54	Overcast
" 13	30·28	W.	...	118	68	51	53	56	Fine
" 14	30·22	N.W.	0·16	106	61	51	51	55	Fine

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An Address

ON

MORBID GROWTHS, WITH A SUGGESTION AS TO TREATMENT.

Delivered before the Swansea Medical Society

BY A. F. BLAGDON RICHARDS, M.A., M.D. CANTAB.,

AURAL SURGEON AND ASSISTANT SURGEON TO THE SWANSEA GENERAL HOSPITAL.

GENTLEMEN,—In the treatment of morbid growths medicine has apparently altogether failed up to the present. Bromide of arsenic has occasionally delayed the progress of the disease and afforded relief to pain but without any permanent effect. Various aniline dyes have been injected subcutaneously in the hope of staining and impairing the vitality of the nuclei of the proliferating cells but without any definite results. Surgery has effected much, and in the case of so-called benign growths it is seldom that operative interference will fail to relieve or effect a cure. But in the treatment of malignant growths it is only too often that surgery fails to afford more than temporary relief, sometimes not even that. Patients unfortunately have such a dread of operative interference that they will submit to it only when the disease has advanced so far that no hope of permanent relief can be entertained. Then even after an operation, however brilliant, however daring, recurrence is almost certain. Oftentimes the growth is so situated as to prevent any possibility of its extirpation. In other cases, however early the operation is undertaken, the nature of the growth—as, for instance, a melanotic sarcoma—or its situation renders recurrence only too probable. And so, year by year, thousands die lingering deaths after months, or even years, of agony and distress, both mental and physical—die from the most hopeless and oftentimes the most loathsome form of disease. It has been estimated from statistics that there are 30,000 patients at all times in England suffering from cancer.

When we consider the phenomena of development and growth it must be a matter of surprise, not that we meet with these morbid growths often, but that we do not meet with them much oftener. It simply illustrates the marvellous accuracy with which nature works. Life starts as a single cell, a unicellular organism. This cell rapidly divides and subdivides until three distinct layers of cells can be easily distinguished—the epiblast, the mesoblast, and the hypoblast—and from these the complex tissues, the highly developed organs of the adult, are formed. From each layer certain definite tissues are developed with absolutely no variation, and of these tissues the different organs are composed. And then, when development is completed—when growth as a whole is at an end—each group of cells lives and is nourished and performs its functions within the most exact limits, without in any way invading or encroaching upon neighbouring groups of cells for the remainder of the life of the individual, perhaps for a period of 60 or 80 years. The wonder is, not that we occasionally meet with abnormalities in the development or growth of cells, but that we do not constantly meet with them, that we do not oftener see congenital malformations due to defective development or growths resulting from the disordered activity of different groups of cells. Unfortunately, however, cases of abnormal growth are met with far too often; so often, indeed, as to inspire everyone at some time or other with a dread lest a similar condition should affect him. Sometimes the growth, while fulfilling no physiological function, is of complex structure and highly organised, shows no tendency to spread or infiltrate surrounding tissues, always remains distinctly localised and definite in outline, and does not recur after removal. It is then termed a benign growth. Very often, however, the growth is of very simple structure, composed only or almost entirely of one of the elementary tissues: it rapidly spreads and infiltrates surrounding structures; is therefore ill-defined in outline; its elements are carried in the lymph or blood stream to start secondary growths in distant parts, and always after seemingly complete removal there is a strong probability of recurrence. These are the malignant growths that so often baffle all surgical skill.

Now the benign and the malignant growths present certain features in common. Although they run such a different course clinically they cannot be regarded as entirely distinct in character. They resemble each other in that they fulfil no physiological purpose, in that they constitute a malformation by which we are able to recognise them; a malformation resulting from an overgrowth, a disordered nutritive activity of certain elements present in the structures from which they spring. In the benign tumours growth is, as a rule, slow, the structure is highly organised and resembles that of perfectly developed tissues, but there may be mechanical interference with the functions of surrounding organs due to pressure or to occlusion of ducts or passages. They may cause severe hæmorrhage and seriously interfere with the health in many ways, so that although structurally they may be benign yet clinically they may approach the malignant tumours in their effects. In the malignant tumours growth is usually very rapid and the structure is elementary or embryonic. But in both forms, as I have said, there are disordered nutritive activity and multiplication of cells, towards no definite end, to serve no useful purpose.

The problem that has baffled solution up to the present, that has defied all attempts at a satisfactory explanation, is as to the cause at work in producing these growths. For years past ceaseless investigation has been going on in an attempt to discover some micro-organism, some intracellular parasite which might account for the vicious activity of cell growth, but so far without any definite result. And for my own part I think that the result of work in this direction will always be negative. I think that the factors at work in producing a malignant growth are similar to those producing a benign growth but intensified in action and that one might just as well search for parasites or micro-organisms in benign growths as their cause as in malignant. I think that the cause is, in all probability, some physiological aberration in cell growth and activity. If these growths were due to any parasitic organism, anything of an infectious or communicable nature, then surely long ere this there would be many cases on record in which there would be some grounds for thinking that the morbid growth had by means of these organisms been communicated from one person to another. It would more frequently happen that two or more cases would occur in a family where the disease had shown itself in one member. This, however, is quite exceptional and may when it occurs be put down to a hereditary tendency. As there is often a hereditary tendency to congenital malformations, so it is quite reasonable to think there may be a hereditary tendency to disordered cell growth; indeed, there is a complete dearth of any evidence to the effect that morbid growths of any description are in any way infectious or communicable from one to another. Surgeons and pathologists have, one might say for ages past, been handling and examining these growths both in the process of excision and at varying periods afterwards and yet, as far as I know, there is not a single case on record where the disease has been communicated in this way.

There are numerous instances on record where growths have appeared after injury or irritation of some kind or other. In fact, this is a matter of common observation. Papillomata are frequently met with on cutaneous surfaces when constantly exposed to the action of irritating fluids. Epitheliomata of the lips are often started by pipe-smoking, especially where a short stem and perhaps a rough and sharp mouthpiece are used. The constant irritation of a carious tooth will often excite a lingual cancer. In two cases of sarcomatous growths I have had to do with the disease started after an injury and was in all probability excited by the injury. In one case there was a history of a small bone having lodged in the tonsil of the patient. It must have been small as it escaped observation. Eventually an abscess formed and the piece of bone was dislodged. Soon afterwards a sarcomatous growth appeared on the site of the injury and eventually led to the death of the patient. In the other case a sarcoma appeared in the breast of a young woman some little time after a severe blow upon it. Epitheliomata sometimes occur in old scars often long after the scar is originally acquired and they seem preferably to develop in those scars which have been subjected to long periods of irritation, as in cicatrices of the limbs which hamper movement and are thus subjected to undue tension. There is one case recorded in which the disease appeared 61 years after the original injury. It is well known that an epithelioma is very apt to occur in a leucomatous patch on the tongue where there has been an unhealthy condition of the epithelium owing to irritation. It can, I think, be accepted as a fact that any prolonged irritation or injury may eventually lead to a morbid growth. It may be an innocent growth such as a papilloma or malignant as an epithelioma. Now I think that the effect of any frequent traumatism, any irritation of a group of cells extending over a long period, must be to pervert the nutrition of those cells. Each time an injury or irritation is experienced there must be an effort on the part of the cells affected to resist that injury and to effect repair. Owing to the oft-repeated and vicious stimulation the nutrition of the cells becomes perverted and a vicious activity results, leading to an overgrowth which serves no physiological purpose, an invasion of other groups of cells and tissues which leads to a disastrous ending. If, owing to the period of life, the nutritive activity of the cells which are irritated or injured is great, or, on the other hand, the power of resistance of neighbouring tissues is lessened, then the tendency to abnormal and pernicious growth is increased. In youth and early middle age, when the muscular, fibrous, and osseous structures of the body, all derived from the mesoblast, are growing rapidly or at the height of their functional activity, then there is a tendency to growths of mesoblastic origin, benign growths highly organised, as the angiomata, neuromata, and lymphangiomata, or simpler, as the lipomata, fibromata, and myomata, or malignant growths, as the sarcomata. If we meet with epithelial tumours at this time of life they are generally highly organised, containing a good deal of well developed connective tissue, and are benign in character, as, for example, the adenomata and papillomata. Later in life the nutritive and functional activity of mesoblastic tissues wanes. Degenerative processes are apt to set in showing greatly impaired nutrition. Thus we have atheromatous and calcareous degeneration of arteries appearing, the arcus senilis, atrophy and brittleness of bone, feebleness of muscle, and the wrinkling of the skin all showing impaired nutritive activity of the mesoblastic tissues. And it is a significant fact that about this time benign tumours of mesoblastic origin which may have persisted for years show a distinct tendency to spontaneous absorption. Thus fibroid tumours of the uterus often disappear spontaneously after the menopause. Diminished nutrition due to cessation of the uterine function of course plays a part in producing this result. At this later period of life another class of tumours is more frequently met with, tumours of epiblastic or hypoblastic origin, epithelial tumours of various types. There is no reason to believe that late in life epithelial tissues show the same degree of diminished activity as mesoblastic tissues. They do not show any marked degenerative changes such as are met with in epithelial cells under diseased conditions. If there be any decrease in functional activity it is in all probability due to an imperfect blood-supply resulting from arterial degeneration. These tumours are of a low type and elementary structure, never highly organised. There is an absence of well-formed connective tissue in them. They are almost invariably malignant when appearing late in life and rapidly invade surrounding structures. Possibly owing to diminished activity in the mesoblastic tissues the power of resistance to this invasion is lessened. These epithelial tumours are especially apt to occur in organs where great variations in functional activity take place physiologically, where metabolism may at one time be most active, at another very feeble, as in the breast and uterus. These organs are more frequently attacked by malignant disease than any other and in them one would expect perversion or disorder of nutrition to take place most readily. The tumours are liable to occur in places where the epithelium is exposed to injury and long-continued irritation, as in the lips and tongue. They also occur at other orifices, such as the pylorus, the os uteri, and the rectum, and this peculiarity has been explained by the complicated arrangement at these points of the germinal structures, where the germinal membranes join or where folds occur. At these places variations in nutritive activity would be more likely to take place. I have dealt with these facts because they tend to show that morbid growths are due to a perversion in the nutrition of the groups of cells from which they spring, a vicious and disorderly nutrient activity causing an overgrowth of cells which serves no physiological purpose and which in the case of the malignant growths leads to the death of the individual. The cells, instead of living and growing strictly within their physiological limits, acquire piratical tendencies and invade and destroy neighbouring structures. The cells of a growth correspond in appearance to cells found in normal and healthy tissues, modifications occurring perhaps when the growth is very rapid and there are altered conditions of pressure. Injury or prolonged irritation undoubtedly initiates this morbid activity in a number of cases, probably in more cases than are apparent, unless the history of the patient is very carefully inquired into. Slight injuries are apt to escape notice. Undoubtedly there are other factors at work as well. Injuries and irritation in the vast majority of cases produce no such evil effects. Amongst the millions who are addicted to tobacco smoking very few comparatively develop a cancer of the lip or tongue. It may be that in a certain proportion of people there is a constitutional tendency, a peculiarity of the tissues which renders them more liable to this disordered cell growth, to this vicious departure from physiological limits, and that in them causes, ineffectual in other people, suffice to start the morbid action.

Now it is a universally accepted fact that the nutrition of every organ, every tissue, every living cell in the body, is largely under the control of the nervous system. That wonderful equilibrium to which I have already alluded, of life, of growth, of nutrition, of function, between the countless groups of cells of which the body is composed is largely maintained by the nervous system. Each cell lives, grows, multiplies, and performs its work according to the needs of the economy, in the strictest order within its own allotted space. There is no invasion of neighbouring cells, no encroachment, no overgrowth—a wonderful equilibrium of growth and energy; and this is maintained through the agency of the nervous system by countless impulses flashed along its motor, its excitory, its inhibitory, its trophic nerves, either as the result of automatic action of the nerve cells or in response to centripetal messages reaching them. So complete are the ramifications of nerve fibrils throughout the body that, to take the skin as an example, you cannot stick a pin-point in any part of its surface without exciting a sensory impulse. The nutritive and metabolic activity of a cell are inseparably connected with its functional activity. Each cell has its function and if that function be properly exercised its nutrition must be correspondingly good. If there be no exercise of that function then there is diminished metabolism, diminished nutrition, and atrophy is apt to follow. The so-called trophic nerves are, I think, simply the nerves that govern the functional activity of the parts they supply. It is extremely improbable that there are nerves whose only duty is to regulate nutrition. This effect is simply secondary, following the impulse which excites activity. The impulse which causes a breaking down of the cell substance and a setting free of energy in some form or other also supplies the stimulus which leads to a building up again. The increased blood-supply which always accompanies functional activity is a proof of this. A freer supply of blood is necessary to make good the waste. Functional activity is directly under nervous control. Each cell may have its functional activity excited or inhibited by nervous impulses. Of course, this can be observed most readily in muscular and glandular tissues, but it is no doubt true of other cells which play a less prominent part in the life of the individual. I may cite one experiment showing that nervous influence exerted on cell metabolism is due to direct stimulation of the cell rather than an alteration in its blood-supply. If in a rabbit the blood-vessels of the submaxillary gland be ligatured then stimulation of the seventh nerve just above the point where the chorda tympani nerve is given off will still produce an active flow of saliva. Here there can be no alteration in the blood-supply and the saliva must be secreted from the lymph in the lymph spaces owing to direct stimulation of the cell. I will not dwell on this point but no doubt many familar instances will occur to you which show the direct influence exerted by the nervous system on cell metabolism. I have endeavoured to show that nervous influences—or, in other words, nerve impulses—are largely concerned in regulating the nutrition, metabolism, and growth of cells; in preserving a nutritive and metabolic equilibrium between the constituent elements and groups of elements in the body.

An inquiry now into the nature of these influences must, I think, prove interesting. Experiments tend to prove that electrical phenomena are constant in muscle, nerve and gland, and presumably other structures. By means of extremely delicate instruments electrical currents have been demonstrated in freshly prepared specimens of nerve or muscle which have not yet lost their irritability. These muscle or nerve currents can be made to excite muscular contraction without any adventitious stimulus of any kind. Thus, if the transverse and longitudinal surfaces of a frog's nerve muscle preparation be placed on non-polarisable electrodes and the circuit be closed by dipping the wires coming from the electrodes in mercury the muscle contracts. If in the muscle nerve preparation the nerve be placed so that it touches the longitudinal and the transverse surfaces of the muscle the circuit of the muscle current is closed, the nerve is stimulated, and immediately the muscle itself contracts. It has been argued that the electrical currents thus demonstrated are due to chemical action taking place on the cut surface of muscle or nerve. But these currents are not present in dead muscle or nerve in which the irritability is lost, so that, if due to chemical action, that action itself must in some way be connected with the living condition of the muscle and nerve. Again, the "negative variation" which occurs in the muscle current when the muscle is stimulated to contraction through its nerve shows that the action of contraction is accompanied by definite electro-motive disturbance in the muscle substance. It has been shown that the "contraction wave" which passes over a muscle is preceded by a "negative wave" of the muscle current, the latter occurring during the latent period. A single contraction shows a muscle current. This is shown in a contracting heart which is placed upon the non-polarisable electrodes of a sensitive galvanometer. Each beat of the heart causes a deflection of the needle which occurs before the contraction of the cardiac muscle during the latent period. A similar "negative variation" of the nerve current has been observed during the passage of a nerve impulse, showing clearly that the functional activity of a nerve is accompanied by some change in its electrical condition.

A series of experiments on glandular tissues also shows that the activity of a gland is accompanied by electro-motive disturbances. In the submaxillary gland of a dog while at rest the hilus is positive towards other parts of the gland. During secretion the excitatory change on stimulating the chorda is a positive variation of the current of rest, the hilus of the gland becoming more positive. Atropin abolishes the chorda variation. On stimulating the sympathetic the excitatory change is of an opposite sign to that of the chorda—the hilus becomes less positive and there is a negative variation. In the intestinal mucous membrane it has been found that there are currents of rest, the inner surface is negative and the outer surface is positive, and stimulation of the secretory nerves of these membranes affects the currents of rest. These experiments show that in glandular as in muscular tissues there are definite electro-motive disturbances during activity. But not only are these electro-motive disturbances constant in muscle, nerve, and gland but they are met with in outer structures. In the skin of the frog the outer surface is positive and the inner is negative and in this on stimulation there is a positive variation of the current. Atrophy or destruction of the glands destroys the power of secretion and the secretion current. The variation therefore may be considered as due to the secretion going on. Some most interesting experiments have been made relating to eye currents and in these the normal the physiological stimulus of the eye has been used—namely, light. In a freshly excised eyeball the cornea is positive as to the transverse section of the optic nerve. If it be placed on non-polarisable electrodes connected with a galvanometer, so that the cornea rests on one and the transverse section of the nerve on the other, then a current is demonstrated by the galvanometer. If now a strong light be allowed to fall on the eye there is a positive variation of the current. Yellow light is most powerful in producing this effect. "The inner surface of the passive retina is positive to the posterior. When the retina is illuminated there is a double variation, a negative variation with a preliminary positive increase, while when the light ceases there is a simple positive variation. Retinæ in which the usual purple has disappeared owing to the action of light show no variations" (Kuhne and Steiner). The negative variation in nerves is absent as soon as they lose their excitability.

There is no exact knowledge of the nature of a physiological or normal nerve impulse, but I think there are reasonable grounds for ascribing it to some alteration in the electrical condition, the electrical tension of the nerve. There is no form of energy other than electric energy that could act in the body with the necessary degree of rapidity, of accuracy, and of delicacy to produce the different muscular movements that we are capable of. Chemical action, molecular vibration would be too slow and not sufficiently under control. Those of us who heard Kubelik the other night must have wondered at the marvellous accuracy displayed by him, the rapidity with which he poured out notes from his instrument, each note formed by the placing of a finger on exactly the right spot on the string within the fraction of a millimetre and drawn forth by the most accurate handling of the bow in the other hand. The nerve impulses giving rise to these movements can be far better explained by electro-motive disturbance than in any other way. It is in accordance with facts. In the electrical eel the electro-motive power may be stored up at such a degree of tension in the cellular structures, termed the electrical plates, that the shock when the circuit is completed is sufficient to stun a man. The marvellous accuracy with which messages can be recorded by electric disturbance is shown in the telephone and the phonograph. In the telephone you can not only easily make out the words but at once distinguish the timbre of the voice. At a distance of 60 miles we are at once able to distinguish the particular tones of a friend's voice. And so in the phonograph, although a record may show only a few indistinct scratches on a smooth surface, caused by electrical energy, yet in those scratches when transformed into sound we are able to recognise the multitudinous tones of orchestral or choral music.

I will only trouble you with one other point in this connexion. In all cells two distinct portions are always observed, the nucleus and the extra-nuclear substance. In nerve cells this distinction is especially marked. In view of the electrical phenomena which I have so briefly touched upon it is a reasonable hypothesis that these portions may be electro-motive towards each other, the one positive, the other negative. During stimulation from any cause metabolism takes place and this electro-motive condition is disturbed, is altered; as a result of this disturbance the electric condition of the nerve fibril connected with the cell is also altered and thus gives rise to the impulse. This impulse travelling to the cell in connexion with the other end alters the electro-motive condition in that cell and starts metabolic and nutritive and functional activity.

I have endeavoured to show that the abnormal cell growth constituting a tumour is, in all probability, due to a disordered and vicious nutritive activity on the part of the original cells; that nutrition generally is regulated and governed by nervous influences; that these influences are, judging by the results of experimental inquiry, electrical in character, of the nature of an electro-motive disturbance; thus we have the metabolism, the functional activity, the nutrition of cells governed by electrical energy. I have been leading up to my suggestion as to treatment. As far as I am aware, the electric current, the different forms of electric energy, have never been systematically tried in the treatment of morbid growths. And yet I think that there are good reasons, as I have pointed out above, for at least making a careful, systematic, and prolonged trial. In the benign growths one could not expect much. They are so highly organised, so well nourished, so similar to normal healthy tissues, that they would not be easily acted on by any agent. But in the malignant tumours, badly organised and badly nourished, it is feasible that they might be so affected by electrical energy as to have their metabolism and growth checked. It might have an inhibitory effect while at the same time possibly increasing the power of resistance of neighbouring tissues. I would give each of the different forms of electricity a trial—the galvanic, the faradic, and the static current. In this way the vicious and disordered activity of cell growth might once again be regulated and brought under control, the electric current simulating normal and healthy nervous impulses. I think that this treatment, bearing in mind the arguments which I have adduced above, worthy of careful and systematic trial, currents of varying degrees of intensity being used for long periods. The electrode over and around the growth should consist of a large number of fine copper points evenly distributed over the inner surface of a cap or shield of soft indiarubber which could be applied closely and evenly to the surface surrounding and overlying the growth. The battery supplying the current could be worn and carried about by the patient. In this manner the electric current would reach and traverse the growth from numerous points in much the same way as normal nervous impulses reach the tissues through the numberless endings of the delicate nerve fibrils lying distributed between and amongst their constituent cells.

PARATYPHOID FEVER.

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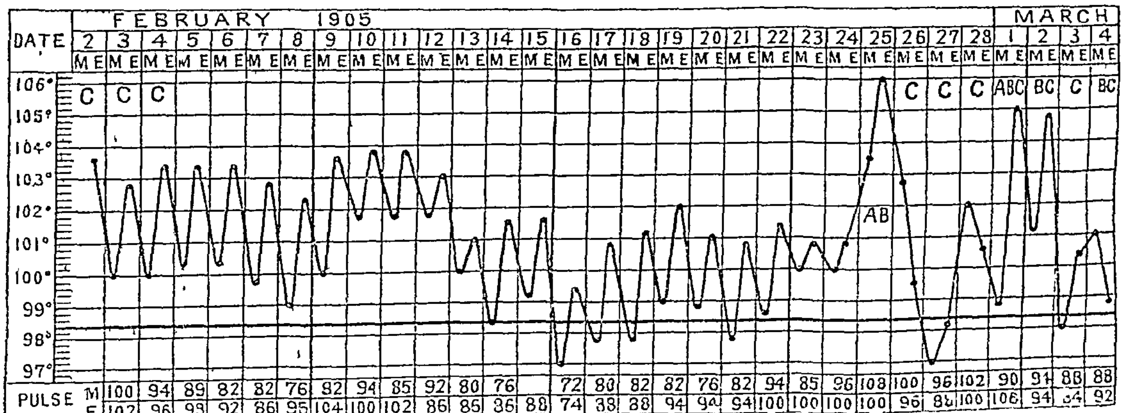
THE patient was a subaltern officer, aged 22 years, of strong and sound constitution. He had never had malaria or enteric fever. He had never been inoculated with anti-typhoid serum. On Jan. 3rd, 1905, he left Lucknow on completion of a riding course and returned to his station in Central India, taking his meals at various refreshment rooms *en route*. He first felt unwell on Jan. 26th after a long day's shooting. He complained of frontal headache and was "off his feed." He was sent out on survey duty in the district and had to stand about in water and camped out at night. During this time he felt seedy and the headache and anorexia increased and he had fever on the 30th. On the next day I went out to see him and found him in a state of high fever without rigors, but accompanied by vomiting, complete anorexia, and headache. Quinine and diaphoretics and phenacetin were given, the first at the rate of 40 grains per diem. The symptoms during the first week of the disease—i.e., from Feb. 1st to 8th—were as follows. The temperature ranged between 100° and 103·5° F., being always lowest at midday and highest in the evening (see chart). There were no rigors but chills were felt occasionally and copious sweating, especially during sleep. The pulse varied from 90 to 110, was very soft, and was markedly dicrotic from the first. The tongue was covered with thick white fur up to the edges The abdomen was normal at first but on the sixth day was slightly full but not tender. Gurgling in the right iliac fossa was noted on the third day and persisted. One spot was seen in the right iliac region on the sixth day. He slept well but on one or two nights took ten grains of Dover's powder. There was a tendency to constipation during the first week. Calomel was given on the second day and enemata afterwards. The headache persisted and was severe up to the seventh day and then began to decline. Quinine was given for the first four days but as it did not affect the temperature it was then stopped. The usual sudorific mixture was given. The diet was milk and soda. In the second week the temperature took a higher level and varied from 101·8° in the morning to 103·8° in the evening. On the morning of the 14th it dropped to normal for a few hours. The pulse varied between 82 and 104, the dicrotism was less marked, and the pulse was very soft. The tongue remained foul and the fur somewhat browner. The abdomen was slightly full and tympanitic and some more characteristic spots appeared. The spleen had not been palpable at all up to this date. Constipation was the rule but on the tenth day there was one loose dark motion. His mind was quite clear, even acute; he slept well at night and never muttered or wandered during sleep. He began to look drawn but did not present the typhoid facies; he had no tendency to somnolence and watched narrowly everything which went on in his room. In the third week the temperature resembled that seen during the fourth week of an average case of enteric fever when it generally oscillates from 97° to 102° before finally settling down. The pulse dropped in rate and did not reach 100 beats per minute; it remained, however, very soft, almost collapsing. The heart remained normal though there was a tendency for the beats to approach each other in character. Spots continued to come out; the abdomen was less distended. The spleen for the first time was just palpable. Occasional diarrhœa of a light colour was noted, though enemata were generally needed. The other signs were those of declining enteric fever. On the nineteenth day he complained of pain in the left groin and down the leg, accurately following the course of the femoral vein. Belladonna and glycerine were applied and the limb was put on a Macintyre splint. This symptom became more marked during the next few days and there was undoubted thrombosis of the left femoral vein and the thigh was one and a half inches larger than its fellow and the calf of the leg one inch larger in circumference. He was drawn and thin in appearance but was not like a typical typhoid case In the fourth week the temperature remained as before until the twenty-third day, when it kept up, and on the twenty-fifth day it shot up to 103·6° and at midnight to 106° and was accompanied by a rigor, followed by considerable collapse. The pulse was generally over 100 and was soft and collapsing. Towards the end of the week the first mitral sound became almost inaudible and the sounds over the other regions were embryonic in character. There was no access of pain in the thigh at the time of the rigor. The tongue was patched with thin brown fur. The abdomen was flat but more spots were erupted at intervals during this week. There were a pleuritic pain low down on the left side and a slight irritating cough and discharge of a small quantity of glutinous phlegm. Auscultation revealed nothing. The leg continued to give trouble and definite resistance and pain were felt on tracing down the course of the vein. The right thigh was 19¼ inches in circumference and the left thigh was 20¼ inches. During the week cardiac stimulants were given, including brandy, three ounces per diem, and a mixture containing ammonia, digitalis, and strychnine. Quinine was given as follows: on the twenty-sixth day, 27 grains; on the twenty-seventh day, 27 grains; and on the twenty-eighth day, 39 grains. The temperature was not affected. Tepid sponging was given when the temperature reached 102·5°. The patient was drawn but his mind was clear and he slept well. In the fifth week (March 1st to 7th),



A, sponged B, rigor. C, quinine. The rigor on March 4th was "very small" The daily amounts of quinine were 40 grains on Feb. 2nd, 36 grains on the 3rd, 40 grains on the 4th, 27 grains on the 26th, 27 grains on the 27th, 39 grains on the 28th, 30 grains on March 1st, 40 grains on the 2nd, 40 grains on the 3rd, and 40 grains on the 4th.

with regard to the temperature, rigors occurred on March 1st and 2nd respectively, the temperature reaching each time 105°. Heavy sweats followed and some collapse requiring stimulants. Otherwise the patient was more cheerful and better. The leg was less swollen and the pain was less. The abdomen was flat, the tongue was still patchy, and there was occasional diarrhœa of light stools. The patient continued to take about three pints of milk daily and broths. Bacilluria was noted and urotropine in eight-grain doses was given twice daily. The heart was weak and the brandy was therefore increased to four ounces daily. On the last day of the fifth week injections of quinine were commenced to see if the hitherto erratic temperature could be controlled. In the sixth week about 15 grains of sulphate of quinine were injected by the hypodermic method into the skin of the arm every day. The injections gave rise to no trouble except transient irritation and redness and subsequent induration of the sites. All the symptoms declined gradually and hereafter nothing of interest occurred. The pulse recovered its tone slowly. The lungs were examined at intervals and were normal throughout. The urine was examined four or five times; the specific gravity was generally about 1020 and no albumin or sugar was ever present. The diazo reaction was not examined for, owing to lack of the necessary reagents. Indican was abundant in the third week and almost non-existent subsequently. Convalescence was tedious and the officer was not in a fit state to travel home on sick leave until April 29th, nearly 12 weeks from the date of his attack.

The condition of the blood was as follows. On Feb. 3rd (the third day of the disease) the leucocytes were 6250 per cubic millimetre. Differential count (400 cells counted): polymorphonuclears, 60 per cent.; small mononuclears, 28 per cent.; large mononuclears, 11 per cent.; eosinophiles, 0; and mast cells, 1 per cent. No malarial organisms were seen after careful examination. There were no pigmented leucocytes. On Feb. 19th (the nineteenth day of the disease and the one on which femoral thrombosis occurred) the condition of the blood was as follows: hæmoglobin, 100 per cent.; red cells, 5,000,000 per cubic millimetre; white cells, 8125 per cubic millimetre; individual corpuscular richness, 1. Differential count (400 counted): polymorphonuclears, 72 per cent.; small mononuclears, 20 per cent.; large mononuclears, 7 per cent.; eosinophiles, 1 per cent.; and mast cells, 0. No parasites were seen. No pigmented leucocytes or débris of parasites were seen. On Feb. 25th, the twenty-fifth day of the disease (the day of the rigor and high rise of temperature), the white cells (average of two counts) were 9787 per cubic millimetre (400 counted); polymorphonuclears, 74·5 per cent.; small mononuclears, 17·0 per cent.; large mononuclears, 4·5 per cent.; eosinophiles, 2·0 per cent.; finely granular basophiles, 1·5 per cent.; and coarsely granular (mast cells), 0·5 per cent. The blood film was normal. No organisms were seen. (It was carefully searched on several subsequent occasions and no adventitious bodies were found.) On March 2nd, the thirty-first day of the disease (during the rigor week), the blood condition was as follows: hæmoglobin, 96 per cent.; red blood corpuscles, 3,513,000 per cubic millimetre; white blood corpuscles, 10,312 per cubic millimetre; and individual corpuscular richness, 1·37. Differential count (300 cells counted): polymorphonuclears, 76·6 per cent.; small mononuclears, 10·7 per cent.; large mononuclears, 10·4 per cent.; eosinophiles, 2·0 per cent.; and mast cells, 0·3 per cent. Three nucleated red cells (normoblasts) were counted. A few doubtful intracellular bodies were seen but they did not react to Romanowsky's stain in the characteristic manner of malarial parasites. No pigmented leucocytes were seen. On April 10th during convalescence the condition of the blood was as follows (the average of three observations was taken during the same hour): hæmoglobin, 100 per cent.; red blood corpuscles, 5,033,000 per cubic millimetre; and white blood corpuscles, 10,312 per cubic millimetre. The fresh blood was carefully examined without any result. The differential count (300 examined) was as follows: polymorphonuclears, 32·3 per cent.; small mononuclears, 35·3 per cent.; large mononuclears, 3·2 per cent.; eosinophiles, 23·6 per cent.; and mast cells, 0·6 per cent. These notes were made at the time. All the cells were perfectly distinct and characteristic and the slide was clear and well stained (Romanowsky). The protoplasm of the polynuclear cells was almost hyaline or at the most very faintly granular. The small mononuclears had a fair circle of protoplasm around the nucleus and were quite typical. The large mononuclears were very few in number but were quite typical. The extraordinary number of eosinophile cells was a very striking feature. They were ordinary coarsely granular eosinophile cells with a multiple nucleus but the limiting cell membrane was more defined than often is the case and there were none ruptured during the process of making the film. No parasites were seen and there were no pigmented leucocytes or malarial débris.[1] On April 20th the red blood corpuscles were 4,666,600 per cubic millimetre and the white blood corpuscles were 9375 per cubic millimetre. Seen in the fresh state large numbers of coarsely granular cells were seen. The red blood corpuscles formed rouleaux well. No parasites were seen. There was no movement of the red blood corpuscles or in the plasma in a hanging drop. The evening blood showed no filaria. The differential count of the above was as follows (200 counted): polymorphonuclears, 47·0 per cent.; small mononuclears, 12·5 per cent.; large mononuclears, 5·5 per cent.; eosinophiles, 35·0 per cent.; and mast cells, 0. The cells again were all just as in the previous blood of April 10th, but the eosinophile granules took on a less decided red and a more neutrophile reaction. (This, I believe, was due to the staining process, because the red blood cells in the former slide were pink and on this slide green. In other words, the second stain used was deficient in eosine.)

Widal's examination.—The blood was first sent up to the Pasteur Institute at Kasauli and after examination Captain G. Lamb, I.M.S., reported: "No reaction with 1 in 40 dilution." Another strain of bacillus typhosus was then obtained from Captain Kelly, I.M.S., of Shansi, a strain which had originally come from the Medical College, Calcutta. I made dilution of 1 in 2, 1 in 20, 1 in 100, and 1 in 200, and the following was noted. After 15 minutes a slight reaction was noted in the 1 in 2 and in the 1 in 20 dilution. This reaction was not increased at the end of an hour and at that time only a few small clumps were seen and the large majority of the bacilli remained actively motile. At the end of an hour no perceptible reaction could be observed in the 1 in 100 or in the 1 in 200. Latterly another strain of bacillus typhosus was obtained from the Kasauli Institute. Again no reaction whatever was noted after one hour in dilutions of 1 in 20, 1 in 50, and 1 in 100.[2] Cover-glass preparations made from the sputum showed a few coccoid bacilli mostly in groups or clumps. A few elements were longer and evenly stained but most were segmented and showed polar staining. No true cocci were present. Unfortunately, the lack of any apparatus in such an out-of-the-way station prevented any attempt being made to isolate the causative organism bacteriologically.

Remarks.—I think there is good ground for believing this to be a case of paratyphoid fever, inasmuch as clinically the disease ran a course very like true enteric fever and yet the serum failed to give the characteristic reaction with no less than three different strains of the Eberth-Gaffky bacillus. Although the clinical course of the disease was one which might stand for a typical attack of typhoid fever, yet on closer examination there were several features so unusual as to call for special notice. In speaking of the clinical picture presented by "the typhoid state" its value as a symptom depends entirely on the experience the individual observer has had in the normal course of the disease. To experienced practitioners the diagnostic value of the "typhoid state" transcends all other individual symptoms in importance and it was just this important symptom that was completely absent in the case under consideration. Previously to coming to India I had a series of nearly 300 cases under my immediate care spread over several years and so the clinical picture of British typhoid fever was a familiar one and during the unfolding of this case of fever the absence of all mental symptoms of true enteric fever struck me as most anomalous. Instead of the characteristic somnolence and apathy there were a hyperacuity, an almost morbid inquisitiveness, and an apprehensive watching of the most trivial details of nursing. Again, the course of the temperature was abnormal. The wide diurnal variation within a more or less limited range is suggestive of a septic rather than a typhoid process. This type is seen during the fourth week of an average typhoid case and corresponds to the time when the ulcers are bare and absorbing small quantities of septic material. In the case under consideration this septic type persisted from the beginning and in the fourth week the high rises and sudden falls and the rigors and sweats suggested either malarial fever or pyæmia. The former was disproved by blood examination and there was no reason to suppose that true pyæmia was ever present. The abdominal symptoms were less marked than usually occurs in a case of such severity. It is true gurgling in the right iliac fossa was marked from the first but the abdomen was never more than slightly full and the spleen was not enlarged at any time. The tongue never became dry and sordes never formed. The case was a sporadic one; there was no enteric fever at Lucknow, and 25 days had elapsed since he left that station before the first symptom occurred. No case had ever occurred in Goona in the memory of anyone. He may have picked up the infection from a railway refreshment room *en route*.

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[1] Santonin was given at night in full doses and sulphate of magnesia in the morning. Free purgation resulted but no worms were found. This was repeated with thymol without effect.

[2] On another occasion some blood was sent to the Petit Laboratory in Bombay, there to be tested with Ehrlich's original cultures of Eberth's bacillus, Gärtner's bacillus, and the bacillus coli communis. Unfortunately, owing to incomplete sealing of the tubes, the serum was not in a fit state for examination on arrival.

The condition of the blood.—In true enteric fever the following changes are well recognised. 1. The red corpuscles are progressively reduced in number until when convalescence is established and post-typhoid anæmia is present the number may have sunk to half the normal. This, as Hayem has pointed out,[3] may be modified at any time in the course of the disease by watery discharges acting by thickening the blood and producing a spurious polycythæmia. 2. The white corpuscles are unaffected or more often reduced in number. A marked hypo-leucocytosis is frequent but a true leucocytosis is said by some (von Limbeck and others) to supervene with the advent of certain complications, an observation, however, denied by many. I have examined several cases presenting complications, such as pneumonia, cystitis, and laryngitis and periostitis, and in none of these was there leucocytosis. Many of the complications of typhoid fever are due to the typhoid bacillus, but some are complicated by the occurrence of the common organisms of suppuration; this is the probable cause of the discrepancy. The complications caused by the pure typhoid bacillus show no leucocytosis but with the advent of cocci comes a rise in the leucocyte rate. As the disease progresses the polynuclear leucocytes diminish in greater ratio than the mononuclear, till late in the disease the latter exceed the former. In the case under observation the general characters are those of true enteric fever, but the leucocyte count was higher than is usual in enteric fever. This suggests, like the temperature chart, a septic element or at any rate a mixed typhoid infection.

The red blood corpuscles were never much reduced and on April 10th the anomaly of a polycythæmia in an obviously anæmic patient was seen. The condition of his mucous membrane suggested a moderate though marked degree of anæmia and yet three successive blood counts gave an average of over 5,000 000 per cubic millimetre. It is a good instance of the disturbance of the other element in the blood count, the degree of plasmo dilution, an element too frequently overlooked in making a decision on blood count. The large mononuclear leucocytes were somewhat high until convalescence. This is a very important factor in the diagnosis of malarial fever, as Christophers and Stevens showed, but in such cases the percentage is generally 16, 20. or more. The great increase of eosinophile cells in the latter examination is a very curious feature and the most obvious suggestion that it was caused by worm parasites was disproved. I saw a case of Kanthack's which showed 62 per cent. of eosinophile cells in the circulating blood of a man with general pemphigus. This increase has been noticed since in similar cases and the bases of pemphigus blebs will generally be found paved with eosinophile cells. In the subcutaneous tissues of the gut in acute dysentery I have noticed masses of the same cells and in the blood of patients with scarlet fever and mania. The phenomenon is generally stated to be marked in cases of asthma. In two cases seen by me during the last month, one, a case of limited pemphigus, showed 43 per cent. of eosinophile cells, and the second, an inflammatory condition of the calf of the leg around an encysted guinea-worm, the percentage of these cells was 35.

An interesting feature common to all these conditions is the involvement of extensive areas of subepithelial connective tissue (many intestinal worms, especially ankylostomata, produce this change), and Kanthack and Hardy were of opinion that eosinophile cells were derived from the body connective tissue. The relation between these two conditions, though purely hypothetical, is suggestive. The total evidence of the blood state was that the disease was enteric fever or something very like it.

Widal's test.—The absence of this reaction with three distinct strains of the Eberth bacillus may be said to prove that in the case in question the *causa causans* was not the Eberth-Gaffky bacillus but some other. A positive reaction would, indeed, have had less value, for even if the Eberth bacillus were playing a subsidiary part in the infection then a positive reaction would have been present but the total absence of any agglutination is strong evidence of the total absence of the usual bacillus of enteric fever. The blood was sent for examination with the Gärtner bacillus and the bacillus coli but, as before stated, it met with an accident. Of the great value of the Widal-Grünbaum reaction there is no question but it is certain that it is not so immaculate as its devisers first claimed. "This is enforced by the fact, which appears to be established by Jürgens Brion and Altschüler and Stern in their studies of the agglutination curves during the course of the disease, that maximum agglutination value may be given by the serum with bacilli which were shown to have no etiological relation to the illness and, further, that the specific agglutination value is not invariably above that of the group agglutination, which, indeed, cuts at the root of the *rationale* of the differentiation of paratyphoid and enteric fevers."[4] If this were generally the case then the possibility of separating the various members of the typhoid-Gärtner-coli family would cease but, speaking generally, it is possible to come to an accurate conclusion by the reaction of the various members *in increasing* degrees of dilution.

That organism which continues to be agglutinated by the serum in highest degrees of dilution is almost certainly that most intimately connected with the disease produced. Thus the writer in the same report says:[5] "The weight of evidence, which is abundant and daily accumulating, goes to show that while paratyphoid serum will often agglutinate bacillus typhosus it always acts upon the paratyphoid bacillus which is in causal connexion with the attack, in very much higher dilutions. ...... The pathological results of infection are as a rule conformable to the clinical effects—that is to say, the picture may frequently stand for an ordinary case of true enteric but as a rule there are modifications due to the absence of one or other typical feature of the latter." Again, Major W. H. Horrocks[6] writes: "Schottmüller has described a number of cases of 'paratyphus.' The symptoms resembled very closely those seen in true cases of enteric fever. The temperature charts were so characteristic that the diagnosis of enteric fever seemed almost beyond cavil. Rose spots enlargement of the spleen, and diarrhœa were also observed in some of the cases but in others the abdominal symptoms were not so marked. ...... When tested with the serum from an undoubted case of enteric fever the bacilli showed no traces of agglutination but when tested with serum collected from each of the cases all the bacilli became agglutinated. The reaction was observed not only with the bacilli and serum from the same case but also between the bacilli and sera of all the cases. The effective dilutions of the sera varied from 1–100 to 1–10,000. ...... The bacteriological results obtained seem to prove conclusively that the cases of 'paratyphus' were caused by a variety of the bacillus of Gärtner."

Dr. R. Tanner Hewlett, in an article in the *Journal of State Medicine* for November, 1903, describes some cases where the symptoms clinically were those of true enteric fever but where the serum failed to agglutinate cultures of the typhoid bacillus. Several of these were found to be associated with the bacillus enteritidis or Gärtner group and in several cases this bacillus was cultivated in a pure state from the body and the serum had high agglutinating powers on the same organisms. More conclusive proof still is afforded by an interesting and valuable paper by Dr. R. Row of the Petit Laboratory, Bombay, entitled "Obscure Irregular Continued Fevers of the Typhoid Group and their Probable Relation with Different Species of Bacilli of the Typho-Coli Race, as seen from the Specific Bacteriolytic Value of Blood Serums of such Cases on various Members of the Typho-Coli Group of

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[3] Johns Hopkins Hospital Reports, vol.

[4] Annual Report of the Sanitary Commissioner with the Government of India for 1903, p. 20.

[5] Ibid., p. 19.

[6] Bacteriological Examination of Water, 1901, Churchill.

Microbe." The method which this observer adopted was as follows. Equal parts of the fresh serum of the patient under examination and of young typhoid, coli, or Gärtner cultures were put up in the form of hanging drops under aseptic conditions. These were examined as fresh specimens and subsequently at determined intervals were removed, dried, and stained in the usual way. Others were allowed to stand for 24 hours and subsequently inoculated on to agar and the degree of growth noted. In all, records of 24 cases are given and the majority of these were examined with the three types of organism above mentioned. As a result, all degrees of reaction were demonstrated; some serums reacted to all three organisms well, more reacted to one intensely and the other two feebly, and some reacted to one strain only and not to either of the others—i.e., suggested pure infection. If such a deduction is justifiable it shows that in almost all the cases brought forward there was mixed infection; some cases of typhoid fever were caused by the Eberth bacillus, some cases of typhoid fever were caused either by the Gärtner bacillus or by the bacillus coli, and more were associated with both or all three bacilli.

The reactions produced *in vitro* in the above experiments were one or other of the following: (1) complete bacterio lysis; (2) partial bacteriolysis; (3) definite agglutination (produced by agglutin already present in the serum or subsequently produced *in vitro* by the leucocytes, some of which are accidentally carried into the serum); (4) indefinite agglutination; and (5) a negative reaction.

Without going into further details Dr. Row's conclusions are as follows (some of lesser importance are omitted): 1. The blood serum of patients suffering from continued fevers under consideration acts powerfully on the bacilli of typho-coli race and the serum reaction appears to be specific towards one or other members of the group 2. The reaction ...... is of a lysogenic nature. 3. Whilst some of the serum reactions are referable to a pure bacillus typhosus infection a good number of them point to infection by organisms other than the bacillus typhosus—viz bacillus enteritidis Gärtner and bacillus coli communis 4. Shows that the reaction is sometimes pure but at others is focal for one organism and more diffused for the other members of the group. 5. The effort of nature in producing anti-bodies specialises as the case progresses, the earlier process being a sort of general reaction. 6. Relapse in enteric fever proper may be caused by coli infection superimposed on true typhoid fever. 7. Pure bacillus coli infection seems to be the most common cause of atypical and irregular fevers dealt with here. However, it is not unusual to meet with infection by bacillus enteritidis Gärtner, or mixed infection of two or more groups of organisms of this class. He concludes as follows. 8. These considerations seem to support my previous observation on the close relationship of the different members of the typho-coli race—the products of this group of organisms (as I then experimentally proved) when administered intravenously into rabbits inducing a train of closely allied symptoms and also marked intestinal lesions of a similar nature.

Paratyphoid fever in India.—Attention of medical officers in India is drawn to this subject in the Sanitary Commissioner's blue-book for the year 1902 above mentioned but in the article no special reference to the disease in India is made. In the same blue-book for 1903 an excellent *résumé* is given of the subject but again no special mention of the Indian atypical typhoid cases is made. At the same time it will probably be found that these irregular manifestations are particularly common in India, at any rate as compared with England. My personal experiences with clinical enteric fever in England and the Widal reaction showed a failure of less than 4 per cent. and if allowance be made for personal and technical failures it is still less. The 24 cases collected by Dr Row, the experiences of Lieutenant-Colonel D B. Spencer, I.M S. (to be hereafter related), my present case, and others go to show that paratyphoid fever is quite common in India. It is very desirable to know to what extent it really occurs and it is only by careful observation of individual cases and repeated Widal examinations that the condition can be detected. The evidence of post-mortem examinations cannot be over-rated and it is possible that the type, position, distribution, or character of the intestinal ulceration may be different. From time to time puzzling accounts have been published where cases clinically diagnosed as enteric fever and giving Widal reaction were found at the post-mortem examination to present no intestinal ulceration. These may have been cases of paratyphoid fever, for admittedly the abdominal signs in such are usually less than in true enteric fever and presumably, therefore, the ulcers were also less severe.

A very tempting subject is that of the resemblance between enteric fever, paratyphoid fever, and dysentery, and the affinities between the Eberth-Gaffky bacillus, the coli communis bacillus, and Shiga's bacillus of dysentery. It might be shown that there is a suggestive gradation between the types, not only in their clinical manifestations, the site and type of the intestinal ulceration, and the degree of septicity of the fever, and so on, but more markedly in the biological gradation from the bacillus at one end of the arc to that at the other end, but the subject is scarcely ripe for discussion and it only needs to be borne in mind in order to show the importance, difficulty, and complexity of the whole question

In the *Indian Medical Gazette* for April, 1900, there appears a paper entitled Enteric Fever in India, by Lieutenant-Colonel (then Major) Spencer, I.M.S. This appears to be the first paper definitely calling attention to the question of atypical typhoid fever in India and in it Lieutenant-Colonel Spencer challenges the unity of enteric fever. To the paper Dr. Row from the bacteriological side makes a fitting pendant and practically proves the whole question. Lieutenant-Colonel Spencer's paper is a long one and it is sufficient to refer briefly to a few of his most important points. He notes: (1) the clinical differences (*vide* table); (2) the rarity with which the typhoid bacillus is ever detected in food or water and its frequent absence in fæces or internal organs of those cases examined with this view (in India); (3) irregularity of the Widal reaction; and (4) that though for years the greatest care has been taken to prevent dissemination of infection in Indian cantonments yet enteric fever continues to be frequent. Many Indian cantonments are models of scientific sanitation but enteric fever seems to be almost unaffected.

* TABLE I.—*True Enterica.*

Etiology.	Widal test.	Mode of incidence.	Mortality per cent.	Chart.	Rash.	Typhoid state.	Abdominal symptoms.	Post-mortem appearances.	Duration of fever.	Treatment.
Bacillus typhi (Eberth) associated with sewage contamination of food or drink.	Positive reaction with the bacillus typhi.	Usually in epidemic form.	7·14 per cent. Maidstone epidemic (Poole).	Often typical; first week, gradual rise; second week, high continued fever; third week, gradual defervescence.	Generally present. 33 per cent. in Maidstone epidemic (Poole).	Early and pronounced.	Whether early or late they are unmistakeable.	Typical ulceration of glandular structures of small intestine.	Generally three weeks.	Expectant.

TABLE II.—*Indian Enterica (a Fever with Enteric Symptoms).*

Probably the bacillus coli associated with fermentation and putrefaction of intestinal contents and consequent auto-infection.	Negative.	Usually sporadic.	About 25 per cent. in India.	Generally irregular.	Generally absent.	Often vague or altogether absent.	Often absent.	Often the ulceration is irregular and extensive, being unconfined to glandular structures.	Three or four weeks but can be aborted by a special treatment.	The treatment I adopt is eliminative, combined with intestinal antisepsis and irrigation.

* Lieutenant Colonel Spencer's chart from the Indian Medical Gazette for April, 1900 (by permission).

After showing the ubiquity of the bacillus coli communis as an intestinal saprophyte, I must state my firm belief in auto-intoxication by that organism and explain the whole question by reference to certain unknown conditions of lowered body resistance culminating in what amounts to transmutation of a saprophyte into a parasite. Ptomaine poisoning may be regarded as an evidence of a similar process and therefore allied to a typical typhoid or paratyphoid fever, as may be seen from Lieutenant-Colonel Spencer's interesting comparative charts. In a private communication Lieutenant-Colonel Spencer points out that he uses an "abortive treatment" in these cases which consists in frequent flushing of the colon by large enemata of Condy's fluid and the administration of sulphate of quinine and sodium salicylate in alternate doses. He writes: "By this means I have never failed to bring the case to a favourable termination by the end of the second week." I have for several years been an advocate of colic lavage (izal) in dysenteric conditions[7] but where the ulceration is above the ileo-cæcal valve this treatment would appear to be of little value.

Granting, then, that paratyphoid fever exists and that in India it appears to be commoner than in England one or two important questions arise which certainly cannot be answered at present. Is there, after all, a transmutation of different species of bacilli as was once claimed in the case of the bacillus anthracis and the hay bacillus? How does the bacillus coli communis attain its power of changing its saprophytic habits for parasitic ones? Is it as a result of lowered resistance of its host or certain unknown changes in man which allow auto-infection or is the power gained by the bacillus in its extra corporeal existence? The conditions of life vary so much in the tropics from those of the temperate zone that it is idle to seize upon one factor. Nevertheless, one may suggest the frequency with which human fæces pass through the bodies of other animals as a possible cause.

In England none of the higher animals feed on human excrement, but in India there are many—thus the pig, the dog, and certain carrion birds do so habitually—i.e., it is their staple article of food. Hares, partridges, peafowl, cattle, and buffaloes are very frequently foul feeders and any or all these latter are eaten by man or in the case of cattle their milk is consumed. It is a matter of common knowledge that many organisms undergo an exaltation in virulence by being passed through the bodies of animals and it is possible that in this way increased potentialities for evil are acquired by the typho-coli group. Enough has been written to show that another problem enters into Indian sanitation, the origin of paratyphoid variations. Are we, therefore, to go on looking upon the bacillus coli communis and its congeners as harmless organisms to be tolerated in pure water? Will it be necessary to inoculate our Indian drafts of soldiers with a polyvalent antityphoid vaccine like that being made polyvalent for the various micrococci of disease? Whatever answers will in the near future be given to these questions, one thing stands certain—the unity of typhoid fever can no longer be upheld.

My thanks are due to Dr. Row of Bombay for a demonstration of his specimens, methods, and literature, and to Lieutenant-Colonel Spencer for much help and the use of his published articles.

Bombay.

INFECTIVE PURPURA.

BY S. ROBERT SCHOFIELD, M.B. LOND., M.R.C.S. ENG.

SEVERAL considerations have prompted me to place the following case of purpura on record. The remarkable features and the extreme gravity of the condition from which recovery eventually took place are in themselves sufficient justification for this, especially as reference to the literature on the subject shows our present knowledge to be very imperfect. Furthermore, I am anxious to call attention to the beneficial influence which the prolonged administration of quinine exerted on the clinical course of the illness, for in regard to treatment also literature leaves much to be desired. The following is a short account of the case.

The patient, a married woman, aged 34 years, had been in a poor state of health for several months, but had had no definite illness until about 36 hours before my first visit. The symptoms complained of were severe frontal headache and pains in the back and limbs. It was evening when she was first seen and the temperature was 104° F. and the pulse was 124. A few small petechial extravasations were noticed and these were confined to the areas just above and below the knees. Six grains of salicylate of quinine and 15 grains of phenacetin divided into three cachets were given during the night with the result that the pains were eased and a rapid fall of temperature ensued, but this was accompanied by extreme restlessness and frequent attacks of vomiting. On the following morning the temperature was found to be subnormal but the pulse was still rapid (120). The signs of purpura were much more obvious and the area invaded became gradually extended until the following day when the limit appeared to be reached. The purpuric patches varied in size, the largest being situated in front of the knees and about three and a half inches in diameter. There were large patches in the skin over each elbow, on the dorsal surface of the hands and of the joints of all the fingers but not the thumbs. The feet were similarly affected but to a lesser extent, the skin over the malleoli and the metacarpo-phalangeal joint of the great toes showing the largest patches. Similar extravasations were also noticed behind the spines of the scapulæ and on the lower part of the back. There were numerous smaller patches on the dorsal surface of the limbs, the largest of these being nearest to the elbows and knees. The distribution suggested that the amount of extravasation was greater in the area of skin stretched over bony prominences and was promoted by the retarded circulation in these parts. The mucous membrane was not affected so seriously as the skin. There was slight hæmorrhage from the mouth; and the surface of the lips, mouth, and tongue was covered with a yellowish white slough and the mucous membrane of the nostrils and conjunctivæ was similarly affected. There was also a slight bloodstained discharge from the other mucous membranes, but during the whole course of the illness there did not appear to be any sign of internal hæmorrhage and the retina was also quite free. The area of the various patches had reached its maximum within 36 hours of the first appearance of purpura and no further extravasations took place. The urine was examined at this stage and was found to contain albumin—about one-sixth. The patient continued to be very restless and collapsed and could not be induced to take even liquid food by the mouth. Rectal feeding was employed and to the nutrient enemata salicylate of quinine and brandy were added. The restlessness continued and it was only after successive doses of opium—trional and ammonium bromide having been found useless—that any sleep was obtained. About the fifth day the mucous membranes of the mouth, tongue, and nostrils began to slough and repiration was greatly impeded. The nose and throat were frequently washed with boric lotion by means of a nasal douche and the fauces were painted with glycerine of borax. In the course of a few days necrotic patches of mucous membrane began to separate but there was no deep sloughing of these parts. The purpuric patches scattered over the trunk and limbs pursued the following course. The superficial layer of the skin became dry and the margin raised by an exudation at first serous and then purulent. In the smaller patches the skin could be peeled off in course of time, leaving a slightly pigmented surface. In the case of the larger patches, on the removal of the skin a smooth surface, dark brown in colour, was exposed. At first this was quite dry but soon pus began to exude round the edges and when this necrotic portion became separated the tissue beneath was that of a sloughing sore. The depth of each slough varied directly with the size of the original patch. Thus, in the case of the elbows and knees the periosteum was exposed to a considerable extent, and on the dorsum of the hand the sheaths of the extensor tendons were clearly visible. The back of each hand was practically one large slough. The inner surface of the great toes showed a similar condition. When the disease had lasted for about a month these sloughing surfaces were at their worst. They became gradually more healthy and began to granulate, and at the end of three months they were all soundly healed. During the period when the sloughing was very extensive—for about six weeks—the general condition of the patient continued to be very serious. The temperature was irregular, varying from 101° to 104°. There were frequent rigors, sometimes as many as three in the course of 24 hours. Towards the end of the second week the left ventricle became dilated, the apex beat being at one period an inch outside the nipple line. There was a well-marked systolic murmur, but the second sound remained clear. The albumin gradually disappeared from the urine and there was no trace of this after the first month. At the end of the sixth week the left leg became swollen and painful; this was evidently due to thrombosis. About this time there were signs of general improvement and the temperature gradually came down to normal. The pulse improved in quality and the left ventricle gained tone and the murmurs eventually disappeared. Three months after the onset the patient began to sit up in bed and a month later she was able to journey to the seaside. On her return six months later it was obvious that she had made an excellent recovery. She had gained greatly in weight and by the aid of massage and passive movements had recovered the full use of her limbs except that she could not completely close her hands owing to the contraction of the scars. This condition is now gradually improving.

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[7] Vide the Special Dysentery Number of the Indian Medical Gazette, July, 1905.

Of the various forms of purpura that are described the case under consideration evidently belongs to the "infective" variety. The whole course of the illness and the behaviour of the purpuric areas admit of no other explanation as at all probable. What was the actual source of the infection it is impossible to say, for although the early symptoms suggested influenza there was no confirmatory evidence that this was the case. As no other source of infection could be determined the precise cause of the patient's illness must remain in doubt. There were times when her condition was desperate—indeed, wellnigh hopeless—as may be gathered from the above account and the satisfactory termination of so grave an illness may, I think, be mainly ascribed to the influence of quinine. As mentioned above, the first drug employed was the salicylate of quinine. Two grains of this were given every four hours for the first ten days but with no obvious result. After this salicylate of soda was tried and then perchloride of iron, but these proved even less useful. During the third week, at the suggestion of Dr. H. P. Hawkins, who saw the patient in consultation with me, intramuscular injections of carbolic acid were employed. Five minims of a 5 per cent. solution were injected daily for six days. The object of this treatment was to stop the frequent rigors but there was no obvious effect on the course of the illness. Had this form of treatment been instituted at an earlier stage of the disease a better result might have followed. At the end of the third week sulphate of quinine was prescribed. The dose was rapidly increased to four grains and this was given in an effervescing mixture every four hours. The drug was well tolerated by the patient and she continued to take 24 grains a day until the temperature had been normal for a fortnight, when the quinine was gradually discontinued. Under the influence of this treatment the rigors became less frequent and the general condition was much improved. In addition to the quinine, the other drugs employed were digitalis and strychnine; and, finally, iron, arsenic, and strychnine were given in combination in the form of a capsule.

The local treatment was naturally a matter of great importance, for there was much fear of septic absorption from the sloughing wounds. Frequent application of hot boric fomentations was first adopted but this plan of treatment had to be abandoned owing to the exhaustion caused by the constant disturbance of the patient. Antiphlogistine was substituted for the fomentations with marked advantage. This allowed the sloughs to be dressed only once a day and much exhaustion was thus avoided. Moreover, under the influence of this preparation the sloughing surfaces rapidly improved, the discharge from them became less offensive, and healthy granulations soon appeared, with the result that the wounds healed in the satisfactory way which has been described.

In conclusion, I wish to acknowledge my indebtedness to Dr. J. S. Risien Russell, who saw the patient on two occasions during the first week of her illness and who has kindly assisted me in the arrangement of these few notes of the case.

West Kensington, W.

40 CONSECUTIVE CASES OF FRACTURE OF THE PATELLA TREATED BY WIRING.

BY C. MANSELL MOULLIN, M.A., M.D. OXON., F.R.C.S. ENG.,

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IN the last 11 years I have had under my care 40 cases of fracture of the patella which I have treated by some method of wiring. For the first year or two, until I felt certain that there would not be any ill result, I adopted this method of treatment only in the case of young adults who were of sound constitution and to whom a good union was of great importance. Fractures in older and feebler patients were treated by splints in the old-fashioned way with the usual results. For the last eight years I have used the method of wiring in every case of this description that has come under my care, with one exception, no matter what was the size of the fragments, or whether they were comminuted, or whether the patients appeared to be on the verge of delirium tremens. The one exception was a case of re-fracture in an enormously stout woman in whom no operation of any kind was advisable.

In the first 28 cases I tried most of the various methods of subcutaneous wiring that have been recommended from time to time. All of these, with the exception of Barker's, were soon dismissed as unsatisfactory. Barker's method, which consists in passing a wire vertically around both fragments, through the ligamentum patellæ below and the tendon of the quadriceps above, and twisting the ends together on the cutaneous surface, I practised until five years ago with what appeared to be a good result. In several instances I thought I had secured bony union. In most the union, if fibrous, appeared to be so strong that it was not likely to yield. Only one or two were plainly bad. But when I began to make use of the Roentgen rays as a matter of routine, examining with them all fractures alike, it soon became evident that this method was not much better than the others. Even with the greatest care, making my assistant rub the two fragments together while I tightened the wire so as to insure their being in contact, the apposition was far from being what it ought to be. If the posterior edges of the broken surfaces were in contact the anterior never were and the gap between them was far wider than could be accounted for by the interposition of shreds of pre-patellar fascia. The fragments were tilted and manipulation did not prevent them from becoming tilted as the wire was tightened. The tilting could be diminished by the direct downward pressure of a firm pad upon the cutaneous surface, but this pressed the fascia down between the fragments and rendered bony union out of the question.

The last 12 cases I have treated by the open method with, I believe, bony union in all but one, in which the tilting was not sufficiently corrected, and certainly with an enormous saving of time and inconvenience to the patient. The plan adopted has been the same in all. Operation is performed on the third or fourth day after the accident when the patient has become more or less reconciled to bed and the swelling of the joint has ceased to increase. A semicircular flap is raised from over the fragments and all the blood clot is carefully turned out. Each fragment is drilled in such a way that the wire does not project through the cartilaginous surfaces. A single stout silver wire is passed through and the ends are twisted together until the fragments are in exact apposition, cut short, and buried. No carbolic acid or other antiseptic is allowed to touch the interior of the joint. There is no occasion to wash it out, as the blood, being all coagulated, can be removed with ease by means of a scoop and forceps. The torn fascia on the cutaneous surface of the patella is then united with catgut and one or two catgut sutures are used to join together the aponeurosis on either side if it has been extensively lacerated. No drain is inserted but the angle of the cutaneous incision is left a little open in case there should be any oozing. No splint is used. Deep and superficial dressings are applied and the knee is firmly bandaged. On the third or fourth day the bandages and the superficial dressings are removed and are replaced by a lighter bandage, and the patient is encouraged to flex and to extend the limb more and more each day until by the end of the fortnight it can be bent to a right angle. Massage is begun as soon as the wound is healed. The patient is allowed to get up before the end of the third week and by the end of the fourth he is able to walk without a limp and to kick. In one instance bicycle riding was resumed before five weeks had elapsed from the date of the accident without any ill result.

In none of the 40 cases has there been a rise of temperature worth mentioning and not one of them has caused me a moment's anxiety. The 12 patients whom I have been able to trace can walk perfectly well and can kneel. One or two of them are conscious of the presence of the wire when they kneel and reach forward but it does not give them sufficient inconvenience to render removal advisable. There is no doubt that when this method of treatment is carried out under proper precautions the result is infinitely better than is that attained by any other method and that there is an enormous saving of time and inconvenience to the patient. Of course unless those precautions can be carried out with absolute thoroughness it should never be attempted.

During the same period I have met with two instances in which the ligamentum patellæ had been torn off from the tubercle. Both were in young subjects and in both the ligament had become curled up under the patella so that union could not have taken place without an operation. The ligament in each case was withdrawn from the recess in which it lay and was fastened to its insertion by silk sutures. Both patients did well.

Wimpole-street, W.

A CASE OF ACUTE TETANUS TREATED WITH INTRACEREBRAL INJECTIONS OF ANTITOXIN.

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HONORARY MEDICAL OFFICER TO THE CHELMSFORD AND ESSEX INFIRMARY AND DISPENSARY.

THE following case may, I think, be of interest.

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Chelmsford.

SOME RECENT DEVELOPMENTS IN THE SURGICAL TREATMENT OF STRABISMUS.

By SYDNEY STEPHENSON, M.B., C.M. EDIN., F.R.C.S. EDIN.,
OPHTHALMIC SURGEON TO THE EVELINA HOSPITAL FOR CHILDREN AND TO QUEEN CHARLOTTE'S HOSPITAL; EDITOR OF "THE OPHTHALMOSCOPE."

THE surgical treatment of strabismus dates from the earlier half of the nineteenth century when a German surgeon, Stromeyer,[1] divided the recti muscles on the cadaver, and pointed out that squint might be corrected in that way. Pauli[2] first attempted to perform the operation, which later was actually carried out successfully by Cunier and by Dieffenbach.[3] It is of some historical interest to recall the fact that Cunier performed his first operation on Oct. 20th, 1839, exactly six days before Dieffenbach operated. The first surgeon to perform the operation in England appears to have been P. B. Lucas,[4] who in 1840 published a treatise upon the subject. He devised a blunt hook not very dissimilar from the one now always employed in the operation of tenotomy. At first the rectus was exposed by means of a vertical incision through the ocular conjunctiva midway between the edge of the cornea and the caruncula lacrymalis, and a blunt hook being passed under the muscle, the latter was divided with scissors on the nasal side of the hook. As originally practised, therefore, the operation was a myotomy as opposed to a tenotomy. It was believed that the two ends of the divided muscle would eventually become united by means of cicatricial tissue and it was thought that in this way the ultimate result of myotomy would be to elongate the rectus. But it was soon shown that, in point of fact, the two parts of the muscle did not unite with one another. It is not a little curious, as readers will perceive later, that one is to-day engaged in realising an end almost identical with that aimed at by the earlier operators—namely, an actual elongation of the muscle.

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[1] Stromeyer: Beitrage zur Operativen Orthopadik, 1833.

[2] Pauli: Monatschrift fur Medicin, Augenheilkunde, und Chirurgie, 1840, p. 321.

[3] Dieffenbach: Ueber das Schielen und die Heilung derselben durch die Operation, Berlin, 1842.

[4] Lucas: A Practical Treatise on the Cure of Strabismus or Squint by Operation, &c., London, 1840.

The researches of Bonnet (1841) into the anatomy of the capsule of Tenon appear to have led von Graefe to advocate tenotomy in preference to division of the muscle. Since that time the operation has undergone few modifications and has retained its place in the mind of the medical profession as the operation *par excellence* for the cure of squint. In the hands of British operators, at all events, the so-called "open" operation was largely superseded by the introduction by Critchett of the "subconjunctival method." In this operation, as everybody knows, the tendon is not exposed but divided beneath the ocular conjunctiva by scissors introduced through an incision in the neighbourhood of the lower border of the tendon, close to its insertion into the sclera. This method of operating is still the favourite one in England, although elsewhere it seems to enjoy little favour. Indeed, even among British surgeons there is nowadays some tendency to revert to the less elegant but more certain plan of dividing the tendon openly.

During the last two decades, however, surgeons have become painfully conscious of the fact that tenotomy, although easy to perform, is uncertain in its results. The fibrous bands—the so-called "check ligaments"—which unite the sheath of the muscle with the capsule of Tenon may limit the due retraction of the tendon which it is the aim of the operation to produce. The result in this event is disappointing. On the other hand, if the ligaments be freely divided a divergent squint may readily result, especially when both eyes have been treated surgically. In tenotomy the surgeon accordingly lies between the Scylla of doing too little and the Charybdis of doing too much, and that without being in a position to prevent either mishap with certainty.

Endeavours have on this account been made to render the effects of tenotomy more certain by modifications of several kinds or by replacing it by operations of a somewhat different nature. For example, Parinaud[5] (1890) proposed in some circumstances to replace tenotomy by an operation to which he has given the name of *reculement capsulaire*. This operation consists essentially in separating the muscle from its adhesions to the capsule of Tenon and to other parts, without, however, dividing the tendon itself. A vertical incision, made between the tendinous insertion and the caruncle, allows a pair of scissors to be introduced for the purpose of separating all premuscular adhesions that can be reached. The final step is to suture the conjunctival wound in the usual way. Again, some few years ago Panas[6] (1896) advocated what he called "elongation of the ocular muscles" in pronounced non-paralytic deviation. This consisted in making successive and steady tractions upon the rectus muscle enveloped in Tenon's capsule by means of a large strabismus hook passed beneath its tendon until the inner border of the cornea could be brought without the least resistance to the canthus, inner or outer, as the case might be. The tendon was then divided and the conjunctival incision closed with a suture. Panas recommended the performance of his operation of muscle stretching upon both eyes at the same sitting. L. Webster Fox (1900),[7] after doing tenotomy of the external rectus for divergent squint, stretches and removes an elliptical fold of conjunctiva and Ténon's capsule from over the internal rectus and finally closes the wound thus left by four sutures.

Several operations have been devised with the object of shortening without actually dividing the antagonist muscle. The effect is produced by rucking or folding the tendon, often by means of special instruments, and then by fixing it in place by sutures (Todd, Valk, Brand, and others). In the same category may be placed the operation of myectomy devised by J. F. Noyes[8] in the year 1874. Noyes excised bodily a piece of the external rectus in cases of convergent squint and sutured the cut ends together. For the cure of convergent strabismus Noyes usually combined this operation with tenotomy of the internal rectus.

The most important advance in the surgical treatment of squint lay, however, in the introduction of the operation of "advancement" first devised by Jules Guérin (1849) and since modified by many surgeons. Advancement consists in bringing forward the direct antagonist of the divided muscle to an attachment nearer the cornea, thereby increasing the power of the advanced muscle as regards rotation of the eyeball. With advancement a tenectomy of the muscle is often combined (Agnew). The result of this combined operation—that is to say, of tenotomy of one muscle together with tenectomy and advancement of the opponent muscle—is much more certain than that of tenotomy alone, and it can be graded with considerable accuracy by those who have acquired a moderate degree of proficiency in operations upon the muscles of the eye. Moreover, as the operation is nowadays often undertaken under cocaine, it is possible to judge by actual inspection whether a correct adjustment has been secured or whether too much or too little has been effected. When a general anæsthetic, as chloroform, is administered, it becomes more difficult to gauge the immediate result, because the patient can give no help in the matter and no dependence whatever can be placed upon the position assumed by the eyes when the patient is narcotised.

It has thus come about that few operators would now care to attempt to rectify a convergent squint, say, of 40 degrees angular measurement, by the operation of tenotomy alone. On the other hand, they would feel tolerably confident of a good result by combining with tenotomy of the one muscle advancement and shortening of the other, more especially if the operation was done under local anæsthesia.

A further development of the operation of advancement has consisted in advancing not only the tendon but also Tenon's capsule and the overlying conjunctiva. This is spoken of as "capsulo-muscular advancement" in order to distinguish it clearly from advancement of the tendon pure and simple. This excellent operation is capable of yielding a more marked effect than advancement of the muscle alone. Upon the whole, it appears to be the operation preferred by a majority of operators.

Some few years ago, realising the extremely uncertain effect of simple tenotomy, it occurred to me that a more strictly scientific proceeding would be to lengthen the tendon of the rectus muscle without at the same time interfering with its actual insertion into the sclerotic coat of the eyeball. In this way I hoped that the "dosage," so to speak, of tenotomy might be rendered more or less certain instead of being, as in the old operation, an almost unknown factor. My efforts were crowned with success. I described the method of operating, and exhibited several patients upon whom the operation had been performed, at the Ophthalmological Society of the United Kingdom in 1902.[9] Briefly, the steps of the operation were as follows. A vertical or curvilinear incision was made with scissors over the insertion of the internal rectus muscle and the latter was exposed as fully as might be, and carefully separated from the overlying conjunctiva by a few snips of the scissors. After a small squint hook had been passed beneath the tendon a fine well boiled silk suture was inserted through the lower border of the tendon close to the sclera. The lengthening of the tendon without disturbing its insertion might be effected in several ways, of which the two most practical alone need be described (Figs. 1 to 4). 1. A long oblique incision is made with scissors, commencing near the lower border of the scleral insertion and terminating at the upper border of the muscle, some distance from its tendinous attachment to the eyeball (Fig. 1). The two ends of the tendon are then united by a couple of points of interrupted suture (Fig. 2). 2. The lower half of the tendon is cut through some little distance from the scleral insertion and the incision is carried along the centre of the tendon, midway between its upper and lower border, finally to be brought out at a right angle to its former course (Fig. 3). The free ends left by this step-like incision are united by sutures (Fig. 4).

The lengthening of the tendon as carried out by either of the foregoing methods should be directly proportionate to the linear measurement of the squint; in other words, in a strabismus of five millimetres an attempt to lengthen the tendon by just that amount should be made. The final step, after the tendon sutures have been tied and cut off short, is to close the conjunctival incision neatly with several points of interrupted suture. This is rendered more and more each day until by the end of the fortnight it can be bent to a right angle. Massage is begun as soon as the wound is healed. The patient is allowed to get up before the end of the third week and by the end of the fourth he is able to walk without a limp and to kick. In one instance bicycle riding was resumed before five weeks had elapsed from the date of the accident without any ill result.

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[5] Parinaud.

[6] Panas: Archives d'Ophtalmologie, Janvier, 1896.

[7] Fox: American Medical Association, June, 1900.

[8] Noyes: Transactions of the American Ophthalmological Society, 1874, p. 273.

[9] Stephenson: Transactions of the Ophthalmological Society, vol. xxii., 1902, p. 275.

In none of the 40 cases has there been a rise of temperature worth mentioning and not one of them has caused me a moment's anxiety. The 12 patients whom I have been able to trace can walk perfectly well and can kneel. One or two of them are conscious of the presence of the wire when they kneel and reach forward but it does not give them sufficient inconvenience to render removal advisable. There is no doubt that when this method of treatment is carried out under proper precautions the result is infinitely better than is that attained by any other method and that there is an enormous saving of time and inconvenience to the patient. Of course unless those precautions can be carried out with absolute thoroughness it should never be attempted.

During the same period I have met with two instances in which the ligamentum patellæ had been torn off from the tubercle. Both were in young subjects and in both the ligament had become curled up under the patella so that union could not have taken place without an operation. The ligament in each case was withdrawn from the recess in which it lay and was fastened to its insertion by silk sutures. Both patients did well.

Wimpole-street, W.

A CASE OF ACUTE TETANUS TREATED WITH INTRACEREBRAL INJECTIONS OF ANTITOXIN.

By K. S. STORRS, M.B., B.C. CANTAB.,
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THE following case may, I think, be of interest.

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[1] Stromeyer: Beiträge zur Operativen Orthopadik, 1833.

[2] Pauli: Monatschrift fur Medicin, Augenheilkunde, und Chirurgie, 1840, p. 321.

[3] Dieffenbach: Ueber das Schielen und die Heilung derselben durch die Operation, Berlin, 1842.

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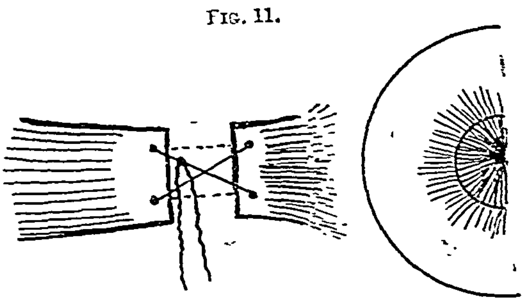
The technical difficulties of tendon lengthening as carried out upon the ocular muscles have led me to endeavour to find a simpler substitute. I have again borrowed a device adopted by orthopædic surgeons—viz., the so-called "artificial tendon." The plan was introduced in 1892 by Glück,[14] who employed bundles of silkworm gut to bridge over the gap left after the traumatic division of tendons. Jochner[15] some years later replaced a gap of two and a half inches in the extensor communis digitorum due to a sword wound with success. It has been shown by Kummell that in a case thus treated the sutures were eventually converted into fibrous tissue resembling tendon itself. Lange[16] has described no fewer than 56 cases of tendon transplantation in which the tendons were lengthened by a number of strong silk threads. His first attempts were made in the hopes of rendering children with extensor paralysis of the knee able to dispense with instrumental aid. Some of the artificial tendons were eight inches in length. Primary union was obtained in all Lange's cases, while in two instances alone was the functional result unsatisfactory. Lange had an opportunity of examining the anatomical condition in one of his operations performed two and a half years previously. He found the artificial tendon to be of firm consistence and as thick as a cedar pencil. When it was cut open the silk was seen to lie in its centre without alteration. The sheath consisted of fibrous tissue, of which the central portion had the structure of normal tendon, made up of parallel and longitudinal fasciculi.

The operation as applied to the internal rectus muscle is quite simple. The tendon is exposed as in the former case and two sterilised silk threads are passed through the tendon about three millimetres from its scleral insertion—one through the upper and the other through the lower border of the muscle. The threads are then knotted, one long end armed with a small curved needle being left attached to each. The tendon, thus securely held, is next divided vertically on the outer side of the knots—that is to say, about midway between the latter and the scleral insertion of the tendon. The threaded needles are then passed between the distal and the proximal portion of the divided tendon in such a way as to bridge over the gap left between the two. Lastly, the two sutures are tied together. An even simpler way of forming the artificial tendon is to use two needles on one length of silk. In Fig. 11 the sutures have been passed crosswise and tied. If advancement of the antagonist muscle has formed part of the operation the sutures should not be adjusted until the first operation has been completed. If, on the contrary, muscular elongation is alone contemplated, then before the threads are tied the eyeball should be strongly abducted so as to leave a distinct interval before inserting the silk threads of the artificial tendon.

FIG. 11.



My experience with the "artificial tendon" is not as yet extensive, but satisfactory results have been obtained in the cases where it has been tried. One thing is clear—namely, that it is much easier to carry out than tendon-lengthening, properly so-called, and on that score alone it is likely to commend itself to the minds of practical ophthalmic surgeons.

Welbeck-street, W.

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[14] The Practitioner, vol. lxix., 1902, p. 360 et seq.; and Modern Methods in the Surgery of Paralysis by A. H. Tubby and Robert Jones, London, 1903, p. 113, et seq.

[15] Ibid.

[16] Ibid.

ON THE

ACTION OF VENOMS OF DIFFERENT SPECIES OF POISONOUS SNAKES ON THE NERVOUS SYSTEM.

BY GEORGE LAMB, M.D. GLASG.,
CAPTAIN, I.M.S.; ASSISTANT DIRECTOR, PASTEUR INSTITUTE OF INDIA;
AND
WALTER K. HUNTER, M.D., D.SC., F.F.P.S. GLASG.,
ASSISTANT PHYSICIAN, GLASGOW ROYAL INFIRMARY; LECTURER IN PRACTICE OF MEDICINE, QUEEN MARGARET COLLEGE, UNIVERSITY OF GLASGOW.

IV.—VENOM OF DABOIA RUSSELLII.

IN previous communications to THE LANCET[1] we described the histological appearances found in the nervous system in cases of intoxication with the venoms of two Indian species of snakes—namely, the cobra and the banded krait (bungarus fasciatus)—and in each instance we pointed out the connexion which exists between the degenerative changes found and the symptoms observed during life. Both these species belong to the same family of colubridæ—namely, elapinæ; further, the symptoms which follow an injection of either of these venoms point undoubtedly to an interference with the functioning of the nervous system. In the present communication we propose to take up a similar study made with the poison of one of the most deadly of the Indian viperidæ—namely, daboia Russellii. It is as well to state at the outset that the symptoms which follow an injection of this venom into the animal body are much more difficult of explanation than is the case with either of the venoms already considered. Thus, while the observations[2] which have already been made with daboia poison show that it has a marked action on the blood plasma, on the blood corpuscles, both red and white, on the endothelium of the capillary vessels, and on the cells of various organs, some experiments made by one of us along with Dr. Hanna[3] point to the conclusion that this venom is free from any element which acts directly on the central nervous system, similar to the principal toxic constituent of cobra poison. No direct evidence has, however, up to now been brought forward in support of this conclusion but we hope in the present communication to have something more to say on this point.

The experiments which were undertaken to study the symptoms of intoxication with daboia venom were made on various species of animals—pigeons, rats, rabbits, monkeys, donkeys, and horses. Injections of the poison were made both intravenously and subcutaneously. In this paper we propose to give only a short summary, as far as symptoms are concerned, of the observations made under these varying conditions. Detailed accounts[4] of such experiments have already been published by one of us.

Cases of intoxication with the venom of daboia Russellii may be divided into two classes. The first class is made up of those cases in which rapid death—that is to say, death within a few minutes—follows an intravenous injection of a small amount of venom, or, in the case of small animals, a subcutaneous injection of a comparatively large amount of poison. The symptoms in these cases begin almost immediately after the injection of the venom and soon end in death. They are restlessness and difficulty in preserving equilibrium, gasping and laboured respiration, followed by violent general convulsions just before death. Both Cunningham[5] and Wall[6] looked upon these symptoms as being due to a direct irritant action of the poison on the central nervous system, easier if the conjunctival wound be kept stretched during the suturing by two small squint hooks, one inserted into its upper and the other into its lower angle. Before the incision into the tendon is made as much of the rectus as possible should be exposed. This may be accomplished by turning the eyeball in a direction opposite to that of the action of the muscle treated surgically and also by retracting the divided conjunctiva fully, for which purpose Prince's forceps (right or left, as the case may be) is a most convenient instrument. The operation of tendon lengthening may or may not be combined with *tenectomy* and advancement of the antagonist muscle—the external rectus, of course, in the case of convergent squint. As a rough general rule for my own guidance, whenever I find the outward excursions of a squinting eye to be reduced or when there is a high degree of amblyopia in the misdirected eye I perform the combined operation. A squint of over 15 degrees angular measurement also furnishes another indication for the combined operation.

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[1] THE LANCET, Jan. 2nd (p. 20); August 20th (p. 518); and Oct. 22nd, 1904 (p. 1146).

[2] Cunningham: Scientific Memoirs by Medical Officers of the Army in India, part ix., 1895, and part xi., 1898. Wall: Indian Snake Poisons: their Nature and Effect, W. H. Allen and Co., London, 1883. Lamb and Hanna: Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India, New Series, No. 3, 1903. Lamb: Ibid., No. 4, 1903. Rogers: Proceedings of the Royal Society, vol. lxxii., 1903. Flexner and Noguchi: University of Pennsylvania Medical Bulletin, July-August, 1903. Preston Kyes: Berliner Klinische Wochenschrift, Nos. 42 and 43, 1903; Hoppe-Seyler's Zeitschrift fur Physiologische Chemie, Band xli., Heft 4.

[3] Loc. cit.

[4] Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India, New Series, No. 3, 1903.

[5] Loc. cit.

[6] Loc. cit.

FIG. 1.

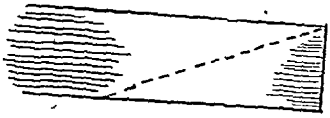


FIG. 2.

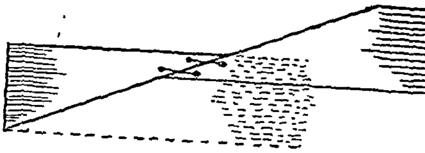


FIG. 3.

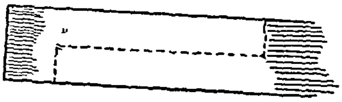
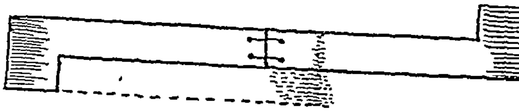


FIG. 4.



As a matter of experience I find it more satisfactory to undertake these operations upon the ocular muscles under cocaine (2 per cent.) or stovaine (5 per cent.) or eucaine lactate (2 per cent.) simply dropped into the conjunctival sac. The use of adrenalin hydrochloride (1 in 1000 or 1 in 2000) is a material help, inasmuch as it renders the intervention in many instances an almost bloodless one. In my opinion, it should be employed, indeed, whether a general anæsthetic is or is not given. It is worth noting that an agent has recently been placed at our disposal that acts even better in inducing local anæsthesia and hæmostasis than cocaine and adrenalin applied separately to the eye. The new combination has received the name of "eusemin" and consists of cocaine and adrenalin and chloretone dissolved in physiological salt solution. It is supplied in hermetically sealed tubes of amber glass, each containing three cubic centimetres. Eusemin has been used in ophthalmic surgery by Cohn.[10] Applied to the eye before and during the performance of the operation which it is the purpose of this communication to describe, eusemin renders the work at once simpler and more speedy. One last point—namely, the instruments used, as scissors, hooks, and fixation forceps, should be somewhat smaller than those generally employed in the usual operations for squint.

Mr. H. B. Grimsdale[11] fearing that my methods of tendon lengthening might interfere with the direction of the chief action of the muscle concerned, has suggested a method of overcoming the difficulty, which is, however, more apparent than real. A glance at Figs. 5 and 6 will show that Mr. Grimsdale divides the tendon into three parts and that he then stitches the upper and lower parts to the mesial slip.

FIG. 5.

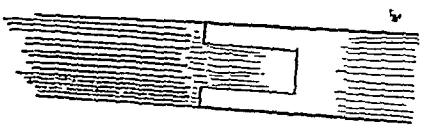
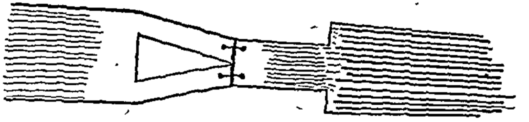
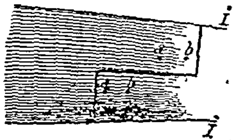


FIG. 6.



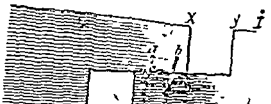
In December, 1904, Dr. E. Landolt[12] brought before the Academy of Medicine of Paris the operation of muscular elongation as a means of curing strabismus. It was described, in evident ignorance of my work in the same direction, as "a new operation upon the ocular muscles." Landolt had operated by these means in inveterate cases of convergent strabismus, concomitant or paralytic, in which marked contracture of the internal rectus was accompanied by changes in the structure of the muscle and by loss of its elasticity. Dr. Landolt described two ways of lengthening the muscle, previously exposed by a *longitudinal* incision through the conjunctiva. An inspection of *Figs.* 7 and 8, borrowed from Dr. Landolt's communication, will show that the methods adopted by him *in 1904* are identical with those described by me in *1902*. After the advocacy of muscular elongation by so distinguished an ophthalmic surgeon as Dr. Landolt it may be predicted that the operation will be widely performed, so that we shall soon be in possession of ample evidence as to its true utility and real status in the surgical treatment of strabismus. The operation, however, as I remarked in my orginal communication, is by no means easy to do. "It is, perhaps, too much to expect," I wrote, "that in the hands of most surgeons so difficult and delicate an operation as that described will replace the simple and often quite satisfactory tenotomy. I am convinced, at all events, that it is a more exact and scientific proceeding to lengthen a rectus tendon than to divide it. Certainly the results can be foreseen and graded with considerable accuracy and so much cannot candidly be claimed for tenotomy as commonly practised."

FIG. 7.



Lines of incision in muscle.
a, *b*, Points of suture.
i, Insertion of muscle.

FIG. 8.



Muscle advanced and sutured.
x, *y*, Gap in muscle. The remaining letters signify the same as in Fig. 7.

Verhoeff[13] has suggested an ingenious method of lengthening the tendon without dividing the latter or, indeed, of using any sutures. A glance at the accompanying *figures* (*Figs. 9 and 10*) will show how this is carried out by *means*

FIG. 9.

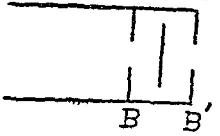
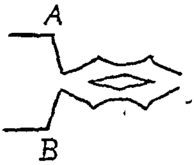


FIG. 10.



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[10] Cohn: Wochenschrift fur Therapie und Hygiene des Auges, Nov. 24th, 1904.

[11] Grimsdale: The Chief Operations of Ophthalmic Surgery, 1904, p. 9.

[12] Landolt: Archives d'Ophtalmologie, Janvier, 1905. THE LANCET, Jan. 28th, 1905, p 254.

[13] Klinische Monatsblattes fur Augenheilkunde, April, 1903.

that it lies in the ventral aspect of that portion of the bulb which extends backwards from the superior olive as far as the ala cinerea. It is further suggested that the antero-lateral nucleus is the most obvious collection of cells in this area and that it is in this group of cells that one would expect the vaso-motor centre to be situated. We accordingly examined by means of serial sections this "vaso-motor area" of the bulb in three of the monkeys above noted—viz., Nos. 23, 24, and 26—and also in a fourth—viz., Monkey No. 30 (weight 2270 grammes, received one milligramme per kilogramme and died in 17 hours) In Nos. 24 and 26 the serial sections were cut transversely, but in Nos. 23 and 30 in a longitudinal direction so as to include as much of the lateral nucleus as possible. These longitudinal sections were cut from both sides of each bulb, so that we had four sets of longitudinal sections of the lateral nucleus to examine. For comparison with these we cut corresponding serial sections from four normal monkeys, the sections in two being transverse and in the other two longitudinal. But even with so many sections at one's disposal there was still difficulty in being certain as to the conclusions to be drawn. For the lateral nucleus seems to be a rather ill-defined group of cells and apparently not always constant in regard to its situation. And the other cells of the reticular formation are even less easily assorted The type of cell, too, in the reticular formation generally varies a good deal and sometimes it was difficult to be certain that a cell which normally would stain rather faintly was not a different type of cell undergoing degeneration. But by carefully comparing the sections from the normal monkeys with those of the animals killed with daboia venom we have come to the conclusion that we can show no certain evidence of even an early chromatolysis going on in these ganglion cells lying within this "vaso-motor area." And it is to be particularly noted that none of the cells showed vacuolation such as we described in the animals killed with cobra and bungarus fasciatus venom. Even after six hours vacuolation was well marked in the cobra cases, so that after 17 hours (Monkey No. 30) and 18 hours (Monkey No. 26) there would surely have been some appearance of vacuolation in these "vaso-motor area" cells if the daboia venom had been acting specially on them. We have therefore to conclude that these sections give no satisfactory evidence of daboia venom having a selective action on any of the ganglion cells in that part of the bulb within which the vaso-motor centre is supposed to be situated. These observations therefore support the conception which one of us, along with Dr. W. Hanna, had previously formed of the action of this poison. They show that we must look to the action of the poison on the other tissues and organs for an explanation of the symptoms observed and of the fatal result. Further, our observations lend no support to Rogers's suggestion that these chronic symptoms are dependent upon a vaso-motor paralysis of central origin.

In conclusion, there is one other point which our present observations with the venom of daboia Russellii, taken in conjunction with the similar observations with bungarus fasciatus venom, help to clear up. In our paper on the action of this latter venom on the nervous system we described a chronic form of poisoning in which the symptoms, while quite distinctive and in no way to be confused with the symptoms seen in cases of daboia venom intoxication, pointed to a destruction of the cells of the central nervous system. Now Rogers[12] has recently stated that this chronic affection is due to the venom containing "viperine element," and that while Calmette's antivenine was able to prevent all colubrine symptoms, the animals treated with this serum died from two to four days afterwards with symptoms of chronic viperine poisoning. We have now shown that in true chronic viperine poisoning there is no destruction of the cells of the central nervous system, while in our previous paper we pointed out that in the chronic cases of intoxication with the venom of bungarus fasciatus an extreme chromatolysis and destruction of the cells of the whole central nervous system were easily demonstrable. It is evident, therefore, that chronic intoxication with bungarus fasciatus venom differs from chronic viperine poisoning not only in the symptoms observed but also in the pathological condition which causes these symptoms and that the term chronic viperine poisoning cannot be applied to the chronic cases of poisoning with bungarus fasciatus venom. Further, it is also evident that Calmette's serum had, even in Rogers's hands, failed to neutralise a typical neurotropic poison.

THE TREATMENT OF WORD BLINDNESS.

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THE term "word blindness" is not altogether satisfactory and the same may be said of "word deafness." As regards the diagnosis of either condition once we recognise there is a true and also a false variety there can be no difficulty in seeing the direction treatment should take. The true word-deaf does not understand spoken words when they exist in his vocabulary. The pseudo word-deaf do not understand the words because they do not exist in their vocabulary and that at times is very restricted indeed. Then as regards the word-blind there are cases in which the words exist in the patient's mind and those in which they do not. Pseudo word blindness is commonest in children but it may be found in uneducated adults. Teaching the pseudo word-blind to read in the ordinary way is like trying to hang up a hat when there is no peg to hang it on. A moment's consideration will convince the most conservative mind that the methods sufficient for normal children would be inadequate for the word-blind and even barbarous. We must first of all increase the child's vocabulary by placing it in classes where it will hear a maximum of talking, reading, and word-building, and we should in addition also explain the nature of the defect to the parents so as to secure their coöperation; indeed, we should be most careful to point out the condition of defective ear-memory that always complicates pseudo word-blindness. Supposing a child with ordinary intelligence reads the word "frog." In learning word-building he will have learnt to pronounce the word even if he has never seen it in print before. When the appearance of the word constrains him to say "frog" two things occur; he associates the printed symbol with the sound that is indelibly in his head but in addition to that he associates sound and symbol with an objectionable cold-blooded animal which he has maybe seen in a pond by which he is in the habit of playing. The pseudo word-blind, on the other hand, when he is constrained to pronounce the word "frog" on seeing the printed equivalent does not associate it with a sound already familiar to him nor does he, on the other hand, associate it with a forbidding cold-blooded animal or a pond. Such considerations suggest the expediency of filling the minds of such children with intelligent speech before we try to teach them to read in the ordinary way. Little wonder if some of them take a thorough dislike to school and eventually subside into dunces that the teachers object to and wish to pass on to a defective centre.

Perhaps a word may be necessary as to diagnosis. My plan is as follows. The child is said to be backward. One notes at a glance that he is very observant as regards what he sees. One then says, "Raise your right hand." If he does so then he understands spoken language. I then say, taking care he does not see my lips, "I want you to remember three days, Monday, Wednesday, and Saturday." After that I remain quiet for a second and put him well at his ease and ask, "How old are you?" After he has replied I then say, "What were the days I asked you to remember?" In most cases, unless the case is a very slight one, he will fail to give the days and very rarely indeed can he give them in the proper order. I then ask him a question in elementary arithmetic such as he should be able to answer. If I am dealing with a child of eight years I ask, How many are three threes? Not improbably his answer is seven or some other figure equally wide of the mark. Now, obviously three threes are nine, it is a mere matter of memory, and he has heard it hundreds of times, yet he does not remember. Inquiries are then made as to spontaneous speech and it is always found to be very limited. A few words will make the reason clear. Spoken words are memorised permutations of phonetic syllables. Try to reproduce the syllables in "remarkable," "transposition" out of their memorised order. With a defective vocabulary, then, it is clear spontaneous speech must suffer. Such children tend to shut themselves up in themselves and avoid brighter ones, because with so few words at their disposal their conversation is too limited and they feel their dulness. Apart from the question of vocabulary the children are at a disadvantage. Phrases are essential to conversation and especially on the centres of the medulla. Both these observers had, however, overlooked the fact that on post-mortem examination in most of these cases an extensive intravascular thrombosis is found. Further, it has been pointed out[7] by one of us that this intravascular clotting, affecting, as it does, principally the pulmonary arteries, is quite an adequate explanation of the symptoms observed and of the rapidly fatal result which follows. A closer study of the phenomenon above described has, however, led Rogers[8] to the conclusion that the intravascular thrombosis is not in some of these cases of sufficient extent to account for the fatal result. By injecting a small preliminary dose of venom, an amount which did not cause intravascular clotting but produced a negative phase of diminished coagulability, this observer was able to bring about quite rapid deaths without any intravascular clotting. He is of opinion that in these cases in which the thrombosis is absent or not of sufficient extent to cause death the fatal result is to be ascribed to a rapid vaso-motor paralysis which he considers to be of central origin—that is to say, a complete paralysis of the vaso-motor centre in the medulla. These cases of acute intoxication do not, however, concern us much at this time, for we have already seen in the case of cobra venom that a certain interval of time—namely, from two to three hours—must elapse between the injection of the poison and the death of the animal before any degenerative changes can be demonstrated microscopically in nerve cells. It therefore appeared to us useless to examine the nervous system of animals which had died with these acute symptoms of intoxication with the view of ascertaining whether any degenerative changes had occurred in the cells of the vaso-motor centres.

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[12] Proceedings of the Royal Society, vol. lxxii., 1903.

The second class of cases of intoxication with the venom of daboia Russellii consists of those animals in which death is delayed for some time after the injection of the poison. This interval may vary from one or two hours to several days. The symptoms which are observed in these more or less chronic cases may be divided into local and general. The local symptoms depend on a destruction of the tissues around the site of inoculation and on an extensive hæmorrhage into these parts. In some cases either local sloughing or a rapidly spreading gangrenous condition supervenes. In other cases a simple subcutaneous abscess develops at the site of injection. These several conditions depend, of course, on the nature of the bacteria which become planted in the tissues already damaged and devitalised.

It is, however, the general symptoms which are seen in these cases which concern us most at this time. They are as a rule very indefinite and somewhat difficult to interpret. In some few cases hæmaturia has been observed, while in others an actual hæmorrhage from the bowel occurred. It may be said, however, that external hæmorrhage is not nearly so prominent a symptom in cases of intoxication with this venom as in cases of poisoning with crotalus venom. Considerable œdema of the scrotum and penis and other dependent parts is often seen. The animals appear depressed, dull and lethargic, and refuse food. The external surface of the body becomes markedly cold to the touch. If the animal lives for a few days emaciation is marked and profound anæmia develops. In no case, however, have we ever seen paralysis of the muscles nor any symptoms pointing to the involvement of respiration. In some instances, especially in large animals, symptoms *pointing to cardiac syncope* are very prominent. Thus we have seen a horse which had received into a vein a quantity of poison not sufficient to cause clotting fall down quite collapsed, its pulse hardly to be felt, and its body covered with a cold sweat. There was no paralysis. After a short time the animal got up and walked away, only, however, to fall down again in the same condition as before. These symptoms have only been observed in the early stages soon after the injection of the poison.

The interpretation of these symptoms is, as we have said, somewhat difficult. It has been shown[9] by one of us that daboia venom has a marked destructive action on the red blood corpuscles and also that in these chronic cases there exists a negative phase of deficiency, in some cases amounting to complete inhibition of blood coagulability. Further, it has been shown by Flexner and Noguchi[10] that this venom is extremely cytolytic for various cells—namely, liver cells, kidney cells, and cells of the testis. To these pathological conditions we can ascribe many of the symptoms observed. Rogers[11] has suggested that in these chronic cases the lethal effects of this poison are partly, if not wholly, due to a paralysis of the vaso-motor centre. As we have mentioned above, he brings forward experimental evidence which shows that in the acute cases of poisoning in which death rapidly supervenes on the injection of the venom there is a paralysis of the vaso-motor system which is of central origin. He does not, however, put forward any experiments which point to this condition being present in these chronic cases, cases in which only a small amount of poison has been injected subcutaneously. With a view of ascertaining whether there is any direct action of this venom on the nervous system we have examined the central nervous system and the peripheral nerves in the following cases :—

Animal.	Weight in grammes.	Dose of venom in milligrammes per kilogramme.	Time before death.
Monkey 21	2600	1·35 into femoral artery.	4 hours.
„ 22	2520	1 5 subcutaneously.	4 „
„ 23	2265	2 0 „	7½ „
„ 24	2820	0 8 „	12½ „
„ 25	1580	3 8 „	13½ „
„ 26	2985	1·0 „	18 „
„ 27	1310	1 0 „	20 „
„ 28	2500	1 0 „	20½ „
„ 29	2160	1 0 „	60 „

The tissues from Nos. 22, 25, 27, and 29 were fixed in formol (5 per cent.); those from the remaining monkeys in perchloride of mercury. Sections from all the cases were stained with thionin according to Nissl's method and with hæmatoxylin and eosin. In Nos. 23, 28, and 29 Busch's method of fixing and staining was also used. In No. 28 the nerve terminals (muscular) were put directly into 1 per cent. osmic acid and afterwards teased out in zylol. A careful examination of the sections of the central nervous system has failed to discover any degenerative change in the ganglion cells of the cortex, pons, medulla, or cord in any of the cases. Even in Monkey 29, dead after 60 hours, there was no suggestion of any breaking up of the chromatic granules. In this case the tissues were not so well fixed and sections did not stain so well as in the other cases. Whether this was due to an accident of fixing or to the venom acting on the tissues or on the circulation one cannot be certain. Still the Nissl granules could be seen to be quite intact and there was no suggestion whatever as of a toxin acting directly on the ganglion cells. Further, there was no evidence of this venom having a special affinity for any of the cranial nuclei or other groups of ganglion cells; the cells in the tenth (motor) nuclei were equally intact with those of the cord and other cranial nerve nuclei. In all the cases there was marked dilatation of the capillary vessels throughout the grey matter of the central nervous system and in most of the cases slight capillary hæmorrhages were also to be seen. There was no apparent increase of the connective-tissue cells (neuronophagen cells). Neither was there any appearance of degenerate fibres with Busch's method of staining. The peripheral nerves gave no degenerative reaction with osmic acid (Marchi or Busch) and there was no apparent increase in the number of their internodal nuclei. The axis cylinders seemed normal. The nerve fibres in the nerve terminals (osmic acid) appeared quite normal. In short, a careful examination of the nervous system showed no definite departure from the normal in any of these cases.

When we contrast this result with the results of the similar examinations of the nervous system in cases of intoxication with the venoms of the cobra and bungarus fasciatus detailed in our previous papers we can at least conclude that daboia venom contains no neurotropic element having a wide-spread action on motor ganglion cells as in the cases of the other two poisons. But to show that daboia venom had no action on the vaso-motor centre was a matter of considerable difficulty. For, to begin with, the localisation of this centre has not yet been certainly determined. Physiologists tell us

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[7] Loc. cit.
Society, vol. lxxii., 1903.
the Medical and Sanitary Depart-
New Series, No. 4, 1903.

[9] ments of the

[10] Loc. cit.

[11] Loc. cit.

THE TREATMENT OF STRYCHNINE POISONING AND OF TETANUS BY SPINAL ANÆSTHESIA.

By A. E. RUSSELL, M.D. Lond., M.R.C.P. Lond.,
ASSISTANT PHYSICIAN, WEST LONDON HOSPITAL; SALTER RESEARCH SCHOLAR, ST. THOMAS'S HOSPITAL.

The action of strychnine appears to be directed to the sensory side of the sensori-motor apparatus, and it is generally held that under the influence of strychnine the sensibility of the sensory cells and tracts is so heightened that a moderate stimulus meets with little or no resistance and passes on to the motor cells an overwhelming stimulation resulting in the production of the convulsions so characteristic of strychnine poisoning. Professor C. S. Sherrington in his studies on Reciprocal Innervation of Antagonistic Muscles has, however, given a different account of the strychnine effect based on experimental work. In his various papers on reciprocal innervation he has demonstrated the existence of the rule that in any muscular action there is not only contraction of one group of muscles but inhibition of the opposed group. He has shown, for example, that stimulation of the afferent nerve of the flexor muscles of the knee-joint restrains the knee-jerk of that side by the coincident inhibition of the extensor muscles.

In a paper read before the Royal Society on May 18th, 1905, Professor Sherrington[1] described many experiments he had made, the results of which showed that under the influence of both strychnine and tetanus toxin this reciprocal inhibition was converted into excitation—that is to say, that whereas normally the stimulation of a certain area of skin or of a certain muscular afferent nerve leads to the contraction of a definite group of muscles—in the case of strychnine poisoning stimulation of the same area or nerve leads to the contraction not only of the first-mentioned group but also of their opposing or antagonistic muscles. The same effect was produced by cortical stimulation. Thus stimulation of the cerebral cortex of the cat with unipolar faradisation readily elicited flexion of the opposite knee, while it was quite exceptional to obtain extension of the opposite knee. After the exhibition of strychnine extension of the opposite knee was readily excited on cortical stimulation and from the very points of it that yielded flexion previously. It required larger doses of strychnine, however, to modify the results of cortical stimulation than to affect the spinal reflex. Tetanus toxin likewise converted cortical flexion into extension. In his concluding remarks Professor Sherrington states that "the foregoing observations appear to give an insight into at least a part of the essential nature of the condition brought about by tetanus and by strychnine poisoning. These disorders work havoc with the coördinating mechanisms of the central nervous system because in regard to certain great groups of musculature they change the reciprocal inhibitions normally assured by the central nervous mechanisms into excitations. The sufferer is subjected to a disorder of coördination which, though not necessarily of itself accompanied by physical pain, inflicts on the mind, which still remains clear, a torture inexpressibly distressing. Each attempt to execute certain muscular acts of vital importance, such as the taking of food, is defeated because exactly the opposite act to that intended results from the attempt. The attempt to open the jaw to take food or drink induces closure of the jaw, because the normal inhibition of the stronger set of muscles—the closing muscles—is by the agent converted into excitation of them. Moreover, the various reflex arcs that cause inhibition of these muscles not only cause excitation of them instead, but are, periodically or more or less constantly, in a state of hyper-excitement, and yet attempt on the part of the sufferer to restrain, to inhibit, their reflex reaction, instead of relaxing them, only heightens their excitation further, and thus exacerbates a rigidity or a convulsion already in progress."

That the convulsions produced by strychnine are markedly related to afferent impressions is well known. Thus, a pithed frog poisoned with a moderate dose of strychnine lies perfectly quiescent but the slightest cutaneous stimulation evokes violent spasms. Similarly in cases of poisoning in man a very slight stimulus, such as the shaking of the bed or the slamming of a door, often suffices to produce violent convulsions. The same condition has also been found to obtain in tetanus. It might therefore be hoped that if afferent impressions could be prevented from reaching the spinal cord the spasms might be either prevented or at least diminished. This is, in fact, realised in practice, the patient suffering from tetanus being isolated in a room to himself and all possible sources of external irritation being carefully avoided. Poulsson[2] showed that a frog dipped in cocaine solution yielded no convulsions after an injection of strychnine, the cocaine preventing afferent impressions from the skin reaching the spinal cord in virtue of its action in paralysing the terminations of the sensory cutaneous nerves. Further proof of the relationship of the convulsions to the afferent impressions was afforded by Claude Bernard's experiment of dividing all the posterior roots of the spinal region in the frog, followed by the injection of strychnine. No convulsions occurred except when the central ends of the cut posterior roots were stimulated.

The injection of cocaine and allied drugs into the spinal subdural space which has, of late years, been used for the production of surgical anæsthesia produces that result by paralysing the posterior roots and their immediate connexions; in other words, cocaine produces a temporary physiological section of the posterior roots, the patient being for the time in the same position as the frog above mentioned. The induction of spinal anæsthesia could then conceivably annul the convulsions produced by strychnine. Spinal anæsthesia was first described by Dr. Leonard Corning,[3] who produced it first in a dog and then in a man. In his original communication he suggests its use in cases of strychnine poisoning, tetanus, and hydrophobia.

Experiments were undertaken to investigate this point. Spinal anæsthesia was duly induced by the injection of cocaine hydrochloride, a 1 per cent. solution in normal saline solution. Of this from one to two cubic centimetres were injected into the animals under observation. Within from five to ten minutes a solution of strychnine hydrochloride 0·25 per cent. was then injected into the external jugular vein.

After such an experiment convulsions would appear within about a minute in the neck and forelimbs, while the trunk and abdominal muscles and the hind limbs would remain perfectly flaccid. In quiescent intervals convulsions in the anterior limb and neck could be at once elicited by the slightest tap on the forelimb or shoulder region, while severe stimulation of the trunk, abdomen, or hind limb evoked no response whatever. In one case only were the anterior as well as the posterior limbs rendered insensitive after the lumbar injection. By injecting the cocaine into both the cervical and lumbar regions both fore and hind limbs are rendered flaccid. If the cocaine be injected into the cervical subdural space alone the fore limbs then become resistant to the strychnine effect while spasms and rigidity occur in the hind limbs. Light tapping with, for instance, the handle of a scalpel is the most efficient form of stimulus to apply, the very slightest tap in a non-cocainised strychninised animal evoking violent spasms. As has been noticed in cases of strychnine poisoning in man firm pressure or rubbing does not induce spasm.

Results such as this strongly suggest the advisability of injecting cocaine into the spinal theca of man in cases of strychnine poisoning.

One difficulty in connexion with cocaine is that a solution cannot be boiled. The most complete sterilisation of any fluid injected into the spinal theca is a matter of the greatest moment and for this reason alone the use of eucaine β, solutions of which can be sterilised without decomposition by boiling would be preferable. This salt, moreover, is much less toxic than cocaine and unpleasant or dangerous effects practically never attend its use. If cocaine be used certainly not more than half a grain should be injected at once and it would be well to commence with a much smaller quantity, say two cubic centimetres of a 1 per cent. solution, which would contain just under a third of a grain. Eucaine may be used more freely and M. Silbermark[4] advises the injection are rarely the spontaneous creation of the conversationalist. The most clever dialectician adds very little indeed to phraseology. Almost every sentence he uses he has acquired parrot-like by his ears or his eyes. The truth is, phrases are memorised permutations of words and we can barely give a list of the words out of their memorised order. Thus the pseudo word-blind suffers, not merely from a bad vocabulary, but also from a restricted phraseology, a further reason why he avoids the society of brighter children. Thus most of these children present an apparent defect of intellect out of all proportion to the actual physiological condition. The above remarks will have prepared the reader to recognise the necessity for such terms as "word-hearing" and "phrase-hearing." In a future paper I hope to make this clearer and show some very interesting results from its recognition. One may, however, point out how little word-hearing affects phraseology. The most erudite, though familiar with thousands of words not used in everyday life, scarcely, if ever, coins a new phrase capable of continuous existence. Just as we have word and phrase defects in connexion with hearing, so in seeing. Reading would be an impossibility on account of the mental strain it would involve if we had to notice every letter in every word or even every word in a sentence. The fact is, we recognise both words and sentences by their general appearances. Word-building is taught in all schools but far less attention has been paid to phrase-building. Happily it is not altogether necessary, as we learn it involuntarily later

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[1] On Reciprocal Innervation of Antagonistic Muscles, eighth note. By C. S. Sherrington, D.Sc., F.R.S., Proceedings of the Royal Society, vol. lxxvi., No. B. 509, p. 269.

[2] Archiv fur Experimentelle Pathologie und Pharmakologie, Band xxvi., p. 22.

[3] New York Medical Journal, 1885, p. 483.

[4] Wiener Klinische Wochenschrift, November, 1904, p. 1227.

True word blindness in children is very rare indeed. In any case we must first determine the nature of the disease before prescribing treatment. In cases of the pseudo variety the children should be put where they hear a great deal of talking until we have improved their vocabulary and phraseology nearly or well up to the normal. Then, and not until then, should they be put to read in classes. If the attempt is made earlier they lose confidence. It is a great advantage to the child before going into a reading class to go over what is going to be read—once they have learned word-building—and they should be instructed to score lightly every word that they have to spell. Having done this they should go over the words repeatedly, using an isolater—a disc with an oblong opening in it—so that context reading does not enable them to recall the words. The isolater makes the word show up sharply and the mere variations in type, as well as the extra clearness, enables the child to get better mental images. Thus the treatment of the pseudo variety consists in:—1. Extending the child's vocabulary and phraseology. 2. Spending more time than usual in the word-building classes. 3. Scoring all words it has to spell and afterwards going over them many times with the isolater. It is well for the child to take his scored book home if he is very backward and his parents, previously educated as to the nature of his defect, should be asked to go over his work with him, though this is, I think, rarely called for except to teach elementary arithmetic. 4. After the child is able to read the lower standard books he should be advised to attend churches where services are read, so that as many words as possible shall be brought under his attention as he reads. How many times would a child, word-blind for, say, "name," "praise," "wicked," see those words in the course of a service, and it must be remembered that by this endless repetition alone can he learn to read fluently.

As regards the treatment of true word blindness, to begin with the condition is excessively rare. One thing is pre-eminently and beyond all things necessary, and that is repetition. I can conceive no better plan than the diligent use of the isolater and word-building, together with attendance at readings, &c., so that the unmemorised words come under the patient's notice time after time every day. A word is necessary as to the position of these boys in class. They must always be put where they can hear without any effort whatever. This requires tact. I think the best way is to move the child from time to time, say, into the centre of a group of eight boys arranged with three in a line behind him, three in front, and one or either side—the boys to read seriatim. In this case he hears without any difficulty and no mental energy is taken from his efforts to read.

For pseudo cases that experience trouble in learning their elementary arithmetic I devised some little time ago "implication tables." At the end of my communication is a specimen of "seven times." It will be noticed when a child is learning "seven times" it is revising two, three, four, five, and six sevens. My instructions to the parents are that the child should say seven twos are 14; the parent, twice seven are 14. The child, seven threes are 21; the parent, three sevens are 21. The child, seven fours are 28; the parent, four sevens are 28; and so on. Thus the child is learning not merely "seven times" but implications of seven. Even when he is learning his "two times" tables he is unknown to himself and unwittingly learning his other tables. At the upper line will be seen numbers increasing seven at a time. From that he can memorise, seven and seven are 14, and seven are 21, 21 and seven are 28. Or he can learn subtraction in the same way, or move by increments of 14: thus seven and 14 are 21, 14 and 14 are 28, 21 and 14 are 35, and so on. These exercises are only advised as an amusement, though they are really necessary, as proved by the fact that such additions and subtractions are memorised sooner or later. Just at present teachers in elementary schools are imbued with a notion that a child should see three sevens are 21. The "Tables" show this together with the additions of seven that go to make 21. Personally I think this is a matter of no importance. I have shown how the parents are to use the "Implication Tables" to teach a child. It now remains to show how they are to teach addition, subtraction, multiplication, and division. The child is told, for instance, to write implications of $\begin{matrix}7 & 7 & 7 & 7 & 7\\ 8 & 9 & 10 & 11 & 12.\end{matrix}$ If the child cannot add up seven and eight the three compartment carrier[1] is put on the "table" so as to enclose $\frac{7}{8}$. The child is instructed to add eight to the upper seven and to do this imagines the seven numbers in arithmetical progression are seven apples with numbers on them, and these he counts and finds seven and eight are 15. This tells him where to fix the one compartment carrier—viz., so as to inclose in its square 15. He then writes on his slate seven and eight are 15, but he sees eight and seven are 15, and promptly writes it also. He then sees, and can prove if necessary, eight from 15 are seven and seven from 15 are eight, eight sevens are 56, and seven eights are 56, 56 divided by seven = eight, and 56 divided by eight = seven. I have called these "Implication Tables": practically they are tables of converses. By the use of these aids at home it is no uncommon thing for these children to make more progress in three weeks than they have made during from three to five years by recognised methods. In hospital I always look out for these "defectives" for the reason that by means of the "Implication Tables" it is so easy to help even the worst cases. They can be obtained from Mr. Harold Wigg, 200, Croydon-road, Anerley.

"Implication Table" ("Seven Times").

7	14	21	28	35	42	49	56	63	70	77	84							
7	7	7	7	7	7	7	7	7	7	7	7							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
7	14	21	28	35	42	49	56	63	70	77	84							

Showing the Table with the Carriers in Position for Implications of $\frac{7}{8}$.

7	14	21	28	35	42	49	56	63	70	77	84							
7	7	7	7	7	7	7	7	7	7	7	7							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	13	19
7	14	21	28	35	42	49	56	63	70	77	84							

PS.—The "Implication Tables" are pieces of cardboard with the numbers printed on them as above. The "carriers" are windowed slips of cardboard which can be slid along the other cardboard so as to mark off any vertical row of figures into three compartments.

Victoria-street, S.W.

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[1] See PS. at end.

Death of a Centenarian.—The *Times* states that the funeral took place on Sept. 13th at Bere Alston, near Devonport, of Mrs. Jane Rowse, who on June 24th last celebrated the 101st anniversary of her birthday. She was a native of St. Columb, Cornwall, and came of a long-lived family.

THE TREATMENT OF STRYCHNINE POISONING AND OF TETANUS BY SPINAL ANÆSTHESIA.

BY A. E. RUSSELL, M.D. LOND., M.R.C.P. LOND.,
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[illegible] HOSPITAL.

THE action of strychnine appears to be directed to the sensory side of the sensori-motor apparatus, and it is generally held that under the influence of strychnine the excitability of the sensory cells and tracts is so heightened that a moderate stimulus meets with little or no resistance and passes on to the motor cells an overwhelming stimulation resulting in the production of the convulsions so characteristic of strychnine poisoning. Professor C. S. Sherrington in his studies on Reciprocal Innervation of Antagonistic Muscles has, however, given a different account of the strychnine effect based on experimental work. In his various papers on reciprocal innervation he has demonstrated the existence of the [illegible] in antagonistic musculature in that there is not only contraction of one group of muscles but inhibition of the opposed group. He has shown, for example, that stimulation of the afferent nerve of the flexor muscles of the knee, [illegible] of that side by the concomitant inhibition of the extensor muscles.

In a paper read before the Royal Society on May 18th, 1905, Professor Sherrington[1] described many experiments he had made, the results of which showed that under the influence of both strychnine and tetanus toxin this reciprocal inhibition was converted into excitation—that is to say, that whereas normally the stimulation of a certain area of skin or of a certain muscular afferent nerve leads to the contraction of a definite group of muscles—in the case of strychnine poisoning stimulation of the same area or nerve leads to the contraction not only of the first mentioned group but also of their opposing or antagonistic muscles. The same effect was produced by cortical stimulation. Thus stimulation of the cerebral cortex of the cat with unipolar faradisation readily elicited flexion of the opposite knee, while it was quite exceptional to obtain extension of the opposite knee. After the exhibition of strychnine extension of the opposite knee was readily excited on cortical stimulation and from the very points of it that yielded flexion previously. It required larger doses of strychnine, however, to modify the results of cortical stimulation than to affect the spinal reflex. Tetanus toxin likewise converted cortical flexion into extension. In his concluding remarks Professor Sherrington states that "the foregoing observations appear to give an insight into at least a part of the essential nature of the condition brought about by tetanus and by strychnine poisoning. These disorders work havoc with the coördinating mechanisms of the central nervous system because in regard to certain great groups of musculature they change the reciprocal inhibitions normally assured by the central nervous mechanisms into excitations. The sufferer is subjected to a disorder of coördination which, though not necessarily of itself accompanied by physical pain, inflicts on the mind, which still remains clear, a torture inexpressibly distressing. Each attempt to execute certain muscular acts of vital importance, such as the taking of food, is defeated because exactly the opposite act to that intended results from the attempt. The attempt to open the jaw to take food or drink induces closure of the jaw, because the normal inhibition of the stronger set of muscles—the closing muscles—is by the agent converted into excitation of them. Moreover, the various reflex arcs that cause inhibition of these muscles not only cause excitation of them instead, but are, periodically or more or less constantly, in a state of hyper-excitement, and yet attempt on the part of the sufferer to restrain, to inhibit, their reflex reaction, instead of relaxing them, only heightens their excitation further, and thus exacerbates a rigidity or a convulsion already in progress."

That the convulsions produced by strychnine are markedly related to afferent impressions is well known. Thus, a pithed frog poisoned with a moderate dose of strychnine lies perfectly quiescent but the slightest cutaneous stimulation evokes violent spasms. Similarly in cases of poisoning in man a very slight stimulus, such as the shaking of the bed or the slamming of a door, often suffices to produce violent convulsions. The same condition has also been found to obtain in tetanus. It might therefore be hoped that if afferent impressions could be prevented from reaching the spinal cord the spasms might be either prevented or at least diminished. This is, in fact, realised in practice, the patient suffering from tetanus being isolated in a room to himself and all possible sources of external irritation being carefully avoided. Poulsson[2] showed that a frog dipped in cocaine solution yielded no convulsions after an injection of strychnine, the cocaine preventing afferent impressions from the skin reaching the spinal cord in virtue of its action in paralysing the terminations of the sensory cutaneous nerves. Further proof of the relationship of the convulsions to the afferent impressions was afforded by Claude Bernard's experiment of dividing all the posterior roots of the spinal nerves in the frog followed by the injection of strychnine. No convulsions occurred except when the central ends of the cut posterior roots were stimulated.

The injection of cocaine and allied drugs into the spinal subdural space which has, of late years, been used for the production of surgical anæsthesia produces that result by paralysing the posterior roots and their immediate connexions; in other words, cocaine produces a temporary physiological section of the posterior roots, the patient being for the time in the same position as the frog above mentioned. The induction of spinal anæsthesia could then conceivably annul the convulsions produced by strychnine. Spinal anæsthesia was first described by Dr. Leonard Corning,[3] who produced it first in a dog and then in a man. In his original communication he suggests its use in cases of strychnine poisoning, tetanus, and hydrophobia.

Experiments were undertaken to investigate this point. Spinal anæsthesia was duly induced by the injection of cocaine hydrochloride, a 1 per cent. solution in normal saline solution. Of this from one to two cubic centimetres were injected into the animals under observation. Within from five to ten minutes a solution of strychnine hydrochloride 0·25 per cent. was then injected into the external jugular vein.

After such an experiment convulsions would appear within about a minute in the neck and forelimbs, while the trunk and abdominal muscles and the hind limbs would remain perfectly flaccid. In quiescent intervals convulsions in the anterior limb and neck could be at once elicited by the slightest tap on the forelimb or shoulder region, while severe stimulation of the trunk, abdomen, or hind limb evoked no response whatever. In one case only were the anterior as well as the posterior limbs rendered insensitive after the lumbar injection. By injecting the cocaine into both the cervical and lumbar regions both fore and hind limbs are rendered flaccid. If the cocaine be injected into the cervical subdural space alone the fore limbs then become resistant to the strychnine effect while spasms and rigidity occur in the hind limbs. Light tapping with, for instance, the handle of a scalpel is the most efficient form of stimulus to apply, the very slightest tap in a non-cocainised strychninised animal evoking violent spasms. As has been noticed in cases of strychnine poisoning in man firm pressure or rubbing does not induce spasm.

Results such as this strongly suggest the advisability of injecting cocaine into the spinal theca of man in cases of strychnine poisoning.

One difficulty in connexion with cocaine is that a solution cannot be boiled. The most complete sterilisation of any fluid injected into the spinal theca is a matter of the greatest moment and for this reason alone the use of eucaine β, solutions of which can be sterilised without decomposition by boiling, would be preferable. This salt, moreover, is much less toxic than cocaine and unpleasant or dangerous effects practically never attend its use. If cocaine be used certainly not more than half a grain should be injected at once and it would be well to commence with a much smaller quantity, say two cubic centimetres of a 1 per cent. solution, which would contain just under a third of a grain. Eucaine may be used more freely and M. Silbermark[4] advises the injection of from one to two cubic centimetres of a 3 per cent. solution of eucaine β. One cubic centimetre of this would contain practically half a grain. He records 200 successful cases of anæsthesia with this method.

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[1] On Reciprocal Innervation of Antagonistic Muscles, eighth note. By C. S. Sherrington, D.Sc., F.R.S., Proceedings of the Royal Society, vol. lxxvi., No. B. 509, p. 269.

[2] Archiv für Experimentelle Pathologie und Pharmakologie, Band xxvi., p. 22.

[3] New York Medical Journal, 1885, p. 483.

[4] Wiener Klinische Wochenschrift, November, 1904, p. 1227.

Inasmuch as a fatal dose of strychnine usually causes death within two hours after being swallowed it is obvious that there is very little spare time in treating it. With severe convulsions and opisthotonos it would be practically impossible to perform a lumbar puncture. Deep chloroform narcosis would have to be first induced and then the puncture performed. It is needless to describe this well-known little operation. Two cubic centimetres of a 1 per cent. solution of cocaine is ample to produce complete analgesia over the whole of the body and would probably annul all spasms so long as the anæsthesia lasted. The anæsthesia in man lasts a variable period, from one to two hours. If convulsions recommenced a further injection should be tried. Fortunately strychnine is very rapidly eliminated, appearing in the urine within as short a time as half an hour after its administration in man. Inasmuch as cocaine can absolutely control strychnine convulsions as noted above in animals, and inasmuch as in man it can produce the most perfect anæsthesia of the whole body lasting for about two hours, its use in cases of strychnine poisoning seems strongly indicated. But it must be borne in mind that in large doses and in its late stage strychnine *may* produce a paralysis of the motor nerve endings with results comparable to those produced by curare.

TETANUS.

Tetanus would appear to offer another field for the therapeutic use of cocaine or eucaine in the form of subdural spinal injections. The spasms of tetanus are presumably due to an excitation of the motor mechanism of the spinal cord, whether, as in the case of strychnine, by increasing the irritability of the sensory side of the arc or by directly acting on the motor cells, is perhaps not certain. But, at any rate, by inducing anæsthesia great relief of pain would be effected, and in the following case recorded by J. B Murphy[5] each spinal injection was followed by a sleep of several hours' duration with complete freedom from convulsions during that time. As this case is one of great importance I give a full abstract of it.

The patient was a boy, eight years of age, who cut his foot seven days before admission to hospital. Six days after the accident stiffness of the jaws appeared, followed by spasms of the neck muscles. On admission to the hospital on July 10th, 1904, he was anæsthetised and the wound was treated surgically. Convulsions were occurring every 15 minutes. On the 11th convulsions were almost continuous and he was given three doses of antitetanic serum. On the 13th lumbar puncture was performed. 16 cubic centimetres of cerebro-spinal fluid were withdrawn and three cubic centimetres of the following fluid were injected: one and a half grains of eucaine β, one-third of a grain of morphine sulphate, three grains of sodium chloride, with water to three and a half ounces. Three cubic centimetres of this would contain approximately $\frac{1}{100}$th of a grain of morphine and $\frac{1}{22}$nd of a grain of eucaine β. The boy slept for four hours immediately after the injection and in the night one and a half hours. Only eight spasms occurred in the succeeding 24 hours and the spasms were shorter. On the 14th he had the severest spasm of all. At 11 A.M. 15 cubic centimetres of cerebro-spinal fluid were withdrawn and four cubic centimetres ($\frac{1}{17}$th of a grain of eucaine β and $\frac{1}{75}$th of a grain of morphine) of the above fluid were injected. He slept again for four hours and *only eight spasms occurred* in the succeeding 24 hours. On the 15th the operation was repeated. 15 cubic centimetres were withdrawn and four cubic centimetres were injected. On the 16th the same procedure was gone through. On the 17th his condition was good. No injection was given. On the 18th the spasms occurred every hour but were milder. On the 19th aspiration and injection were performed. *On the 20th a few mild* spasms ensued. On the 21st the spasms were slightly severer and occurring every three hours. Aspiration and injection were performed. No more spasms supervened and the trismus gradually subsided. The boy was discharged cured on July 31st. The effects observed after the injection were an almost immediate relaxation of the spinal muscles which remained relaxed for some time, enabling the patient to sleep.

A striking feature in the above case was the small quantity of cocaine injected, amounting to only $\frac{1}{17}$th of a grain per dose. It is true that morphine was also given but in the very small dose of $\frac{1}{75}$th of a grain. Considering the almost complete immunity to ill results attending the use of eucaine *it is probable that* a larger dose might be given safely. This would be determined by experiment.

Several cases in which antitetanic serum has been injected into the spinal theca are now on record. Wallace and Sargent[6] report four cases treated in this way with three recoveries. Eucaine and serum could be injected together. Owing to the rigidity of the back and the tendency to opisthotonos chloroform anæsthesia would doubtless be necessary in nearly all cases, and owing to the tendency to spasm a rather stout needle should be employed, one not less in length than three and a half inches. The addition of adrenalin solution to the eucaine as practised of late might be an additional advantage.

Conclusions.—1. Strychnine convulsions only occur when the spinal cord receives afferent impressions. If these be cut off by section of the posterior roots the spasms do not appear. Spinal cocainisation or eucainisation causes a temporary physiological "section" of the posterior roots and experimentally in animals controls the strychnine convulsions. Its trial in cases of strychnine poisoning in man is therefore strongly indicated. 2. The spasms of tetanus are very similar to those produced by strychnine and are also markedly increased by afferent impressions. One case, as noted above, has already been treated by spinal eucainisation with most beneficial results, and it is important that the method should be given a wide trial.

Wimpole-street, W.

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[5] A Case of Tetanus successfully Treated by Aspiration of Cerebro-Spinal Fluid and Injection of Morphine, Eucaine, and Salt Solution, Journal of the American Medical Association, August 13th, 1904.

[6] Four Cases of Tetanus Treated by Injections of Antitoxin into the Spinal Theca, The Lancet, March 5th, 1904, p. 642.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF SUCCESSFUL REMOVAL OF A LARGE PAPILLOMA OF THE RECTUM.

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The following case was recently under my care at St. Mark's Hospital. I have thought it worth recording, as papillomata of the rectum are uncommon.

The patient, who was a man, aged 63 years, gave the following history. He was quite well until about May, 1903, when he had a bad attack of diarrhœa lasting about six weeks. He passed six or seven motions a day; they were accompanied by a certain amount of tenesmus and pain in the upper sacral region, but at this time he had not noticed any blood with the stools. He improved under medicinal treatment and was apparently well for three months, when he had another attack of diarrhœa lasting about a fortnight and accompanied by the same symptoms as before. Since that time he has had two further attacks of diarrhœa and has noticed a little blood with and after the stools. On admission to St. Mark's Hospital he complained of frequency of defæcation (from four to six motions per diem) accompanied by tenesmus and a feeling that the bowel was incompletely emptied. There had been slight bleeding on several occasions; there was also a certain amount of rectal discharge. He had lost flesh slightly. There was a little dull pain in the upper sacral region but this usually disappeared when he lay down. On passing the finger into the bowel a soft papillomatous mass was felt in the posterior rectal wall about four inches from the anus. The growth was of about the size of a five-shilling piece, somewhat tender, and it bled slightly after examination. With the electric sigmoidoscope the growth could be easily seen above the middle Houston's valve. The patient having been prepared for operation in the usual way, on Nov. 17th, 1904, he was placed in the left

Sims's position and an incision was made from the base of the coccyx to about one inch behind the anus. The coccyx was freed and removed entirely. The rectum was then freed in all directions so as to allow that part of it in which the growth was situated to be brought well up into the wound. The wound itself was next packed with gauze and gauze was placed around that portion of the rectum which was to be opened. An incision was made into the posterior wall of the rectum to one side of the growth and that portion of the bowel from which the tumour was growing was excised together with half an inch of healthy tissue around it. The portion of the posterior rectal wall removed measured three square inches. The wound in the mucous membrane was closed by a continuous suture and another line of suture was used to close the muscular coats. A small drainage tube was inserted in the upper part of the wound and the skin wound was then sewn up.

The patient made a practically uninterrupted recovery. A slight rise of temperature occurred on the third day and continued till the fifth day after operation, disappearing after the bowels were opened. He was discharged from the hospital a fortnight later. The last time that he reported himself he was perfectly well and only a slight narrowing of the bowel could be felt in the rectum at the original site of the tumour. Microscopically the growth presented the ordinary appearance of a papilloma; there was, however, some small-celled infiltration of its base and a slight ingrowth of the epithelium suggestive of commencing malignant degeneration.

As I have already mentioned, papillomata of the rectum are by no means common, rather less than 40 cases in all having been recorded. The form of rectal papilloma most usually described is of the nature of a villous tumour, similar to the villous tumours which are found in the bladder. The growth in this case was sessile and its surface was nodular rather than villous. An interesting point is the fact that so large a portion of the posterior wall of the rectum can be removed (in this case three square inches) without causing any serious narrowing of the lumen of the bowel. As far as the patient was concerned the restoration of function was complete, the loss of the coccyx causing him no inconvenience.

Cavendish-place, W.

A CASE OF BLACKWATER FEVER TREATED WITHOUT QUININE.

By DAVID DONALD, L.R.C.P. & S. EDIN., L.F.P.S. GLASG.

THE article by Dr. R. Mowbray in THE LANCET of August 26th (p. 599) is interesting as showing the difference of opinion as to whether quinine ought to be prescribed in the treatment of blackwater fever or not. Without doubt quinine is a specific in the treatment of malaria and on the presumption that blackwater fever is closely allied to that disease is considered necessary. But that such connexion exists has not yet been clearly proved.

A few weeks ago I was called to see a young man who had just returned from Nigeria. He had served there as an engineer for two years and a few months before coming home had a severe attack of blackwater fever. The condition of matters when I saw him was as follows. He lay in bed almost collapsed, his expression was anxious, his lips were bloodless, and he could only talk in a whisper. His temperature was 102° F. and his pulse was almost imperceptible. He complained of intense frontal headache and sickness, with pain referred to the region of the kidneys. Beside his bed was a vessel filled with urine deeply stained with blood. The danger of absolute collapse was so great that I had hot water bottles put into his bed, and fomentations over the kidneys and small quantities of champagne and hot milk alternately every hour were ordered. The following morning he had rallied considerably. His pulse was better, his temperature was 101°, the sickness was less, and the headache was not quite so severe. I gave him ten grains of phenacetin and caffeine (eight of the former and two of the latter) and prescribed iron and strychnine, continuing the champagne and milk with an occasional spoonful of Brand's essence of beef. On the following day the headache had gone, there was no sickness, the temperature was 100°, there was still slight pain over the kidneys, and the urine was still bloody. The champagne was now stopped and milk puddings, light soup, and barley water were ordered. On the next day the temperature was almost normal and the urine was much more clear. The patient asked to have some beef-tea and this I allowed. On the next morning I was sent for early as the patient was worse. I found on arrival that he had a rigor; the temperature was 103°, the pulse was over 100, he had slight delirium, and the urine was again loaded with blood. I gave phenacetin and caffeine, ordered champagne and milk, and had extra blankets put over him. In the evening he was rather better, the temperature having fallen to 100°.

For the next four days the patient was fed on milk, eggs, white fish, Brand's essence of meat, and twice daily four ounces of champagne. At the end of this period his temperature had come down to normal, his urine had almost cleared, and he had no pain anywhere. He had slight discomfort from the constipated condition of his bowels but this was relieved by a good dose of effervescing sulphate of soda. On the fourteenth day from the commencement of the illness he was allowed out of bed, his urine having become quite clear, and he was given a little carefully cooked meat. I prescribed a mixture of cascara, podophyllum, nux vomica, and spirit of chloroform. On the seventeenth day he had a drive for two hours and on the twentieth day he was able to walk to my house to report. His colour was better, the lips being quite red; he had no pain anywhere and his urine was clear.

Such is the case, and from first to last no quinine was prescribed. The idea of a stimulant treatment was suggested to me by the state of collapse I found the patient in and apparently it suited the case.

Aldershot.

ENDOTHELIOMA OF THE VERMIFORM APPENDIX.

By PERCY W. G. SARGENT, M.A., M.B., B.C. CANTAB., F.R.C.S. ENG.,

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THE following case appears to me worthy of record for two reasons, firstly, the association of a neoplasm with a suppurative attack of appendicitis; and, secondly, the nature of the neoplasm, which proved to be an endothelioma. The clinical details present no feature of special interest., The patient was a girl, 12 years of age, in her first attack, who had been ill for three weeks. A small mass was present in the right iliac fossa. The abdomen was opened by the incision recommended by Mr. Battle through the sheath of the right rectus muscle, the general peritoneal cavity was packed off with gauze, and the abscess was opened by the finger The appendix was readily found and removed, and the girl made an uninterrupted recovery The appendix was three inches in length and was acutely inflamed; its mucosa was deeply ulcerated but the wall was not perforated. These changes were most marked in the distal portion, beyond a point half an inch from the cæcum where the lumen was obstructed. The obstruction was found to be due to a spheroidal mass of tissue of the size of a small pea, which projected into the lumen, and appeared to be a tumour. It was examined microscopically by Mr. L S. Dudgeon, who reported it to be an endothelioma. The child was seen five months later, when the wound was found to be perfectly sound and no evidence of recurrence of the growth could be discovered.

The exact position of the endotheliomata with respect both to their classification and their malignancy must at present be regarded as undetermined. Howard Kelly,[1] however, not only regards them as malignant, but classifies them as carcinomata, for, he says, "there are now on record 49 cases of carcinoma of the appendix, including two designated endothelioma" Arguing from the analogy of the well-known association of carcinoma with chronic inflamation in other situations and commenting upon the rarity of tumours of the appendix compared with the frequency of its inflammatory affections, it is evident that Kelly regards neoplasms of the appendix as secondary to other forms of disease of that organ. This may be true in the milder forms of appendicitis, but in an acute inflammation which culminates in an abscess, as in the present example, it is evident that the tumour, in giving rise to a definite stenosis, was the primary factor. Battle and Corner[2] have made the suggestion that, inasmuch as quite a small growth may obstruct the lumen of the appendix, the secondary acute symptoms of appendicitis may so completely dominate the situation that, unless a very careful examination is made, a minute tumour may escape observation; or perhaps that the tumour may have disappeared in the sloughing process to which it has given rise.

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[1] Kelly: The Vermiform Appendix and its Diseases, 1905.

The pathology of appendicitis bears comparison in many respects with that of intestinal obstruction. A fibrous stricture, an acute kink, the impaction of a concretion and the strangulation of the process in a hernia all have their analogies on a large scale with intestinal obstruction, and the pathological as well as the bacteriological results of such lesions in the two cases differ only in degree. In the case of the appendix the peritoneal symptoms are the more prominent, whilst in the case of the intestine it is the obstructive symptoms which predominate. The case recorded here is an instance of an uncommon condition of the appendix, but it has its counterpart in the everyday phenomena of intestinal obstruction by carcinoma and other tumours.

Harley street, W.

A CASE OF ENTERECTOMY OF THE ILEUM FOR GANGRENOUS INTUSSUSCEPTION.

BY JOSEPH O. SKEVINGTON, F.R.C.S. ENG.,
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THE patient, who was a boy aged 12 years, was admitted into the Windsor Royal Infirmary on July 3rd. His illness commenced suddenly on June 29th with acute general pain in the abdomen. Vomiting began on June 30th and continued till admission. He had had also frequent passage of blood and blood-stained mucus from the rectum. When first seen on July 3rd the boy's condition was very fair. His abdomen varied from minute to minute in degree of hardness—a phenomenon which I have noticed on previous occasions in cases of intussusception, particularly in young children. Resistance could be felt below the liver and in the left iliac region. The rectum contained only a little dried blood. The pulse rate was 120 and the temperature was 99·4° F.

In conjunction with Dr. E. S. Norris laparotomy was at once performed. The abdomen contained a considerable quantity of peritoneal fluid, which was not foul. In the left iliac fossa a mass could be felt resembling the cervix uteri, and on close examination this was found to be the commencement of an intussusception. Attempts at reduction were quite useless. The intussusception having been packed off from the rest of the abdomen, an incision was made through the œdematous ensheathing layer, which exposed gangrenous bowel. Enterectomy was then performed, a bone bobbin being inserted and the ends of the gut being secured over it with Lembert sutures. Three inches of the cæcal end of the ileum only remained, and a slough, some two inches in length, on its surface was also closed with Lembert sutures. The boy's condition while on the operating table was desperate and saline solution was injected into the rectum during the operation. He rallied well, however, and made a good recovery, only interrupted by suppuration at some of the sutures in the abdominal wall. At the time of writing (July 29th) he seems none the worse for the shortening of the bowel, and the wound has almost healed. Nothing further has been seen of the bobbin. The amount of gut removed was estimated at 18 inches. The intussusception was purely intestinal in character. I have to thank Dr. Norris for his advice and assistance in the case.

Windsor.

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[2] Battle and Corner: The Surgery of the Diseases of the Vermiform Appendix, 1904.

BRENTRY INEBRIATE REFORMATORY. — The Secretary of State for the Home Department has certified the land and buildings constituting the Brentry Inebriate Reformatory, near Bristol, to be fitted for the reception of 90 male and 150 female patients.

A Mirror
OF
HOSPITAL PRACTICE, BRITISH AND FOREIGN.

> Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Procemium.

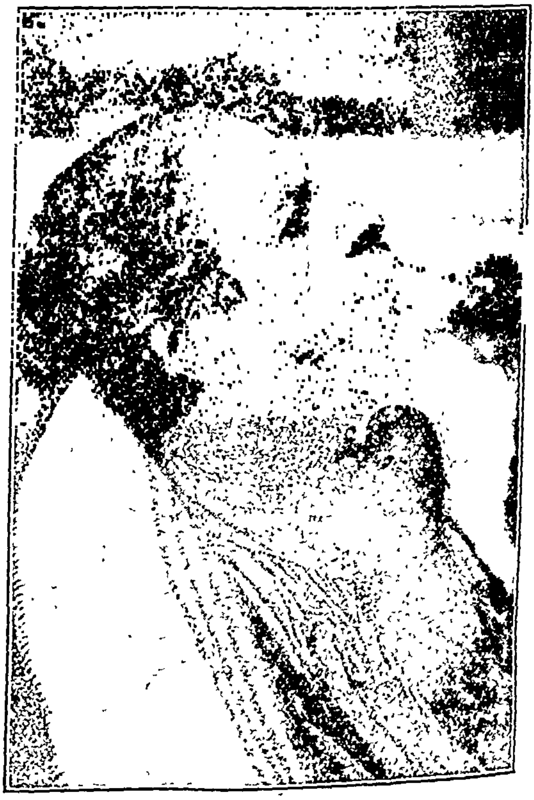
ST. MARY'S HOSPITAL.

AN EXTREME CASE OF THORACIC ANEURYSM.

(Under the care of Dr. A. P. LUFF.)

FOR the notes of the case we are indebted to Dr. D. W. Carmalt-Jones, house physician.

The patient, a navvy, aged 64 years, who had been used to very heavy labour in cement works, was admitted to St. Mary's Hospital suffering from a remarkable form of thoracic aneurysm. He had had syphilis 40 years previously. He stated that he had had a feeling of discomfort in the chest, apparently very vague in character, for about ten years, which he ascribed to the dusty atmosphere of the cement works. Towards the end of 1900 he suffered from "itching" over the sternum and observed a small tumour of about the size of his finger nail which grew rapidly during the following months and in May, 1901, he was admitted to Guy's Hospital. Sir Cooper Perry and Dr. Herbert French give the following account of his condition: "On admission he had a large pulsatile tumour in the second right space, overlapping the sternum, two inches by two and a half inches, without bruit. No other obvious signs. He was in from May 7th to August 19th. He was treated with potassium iodide, rest in bed, and injections of gelatine, given after sterilisation, under abdominal skin, eight injections in all. The improvement was obvious after the first injection. By discharge there was no tumour left. He was in again from Jan. 7th to April 29th, 1903. There was again



Showing protruding mass of aneurysm.

a pulsatile tumour similar to the original but only about half the original size. Rest in bed and potassium iodide caused it to diminish slightly in size. He went out very slightly relieved. No further gelatine injections were given." On admission to St. Mary's Hospital on Oct. 17th, 1904, he had a conical tumour of the size of a large pear, three inches in height and three inches in diameter, projecting from the upper part of the sternum and the second right costal cartilage, slightly to the right of the middle line. The skin was blue and tightly stretched over the tumour. An expansile pulsation was to be felt and a diastolic shock. The heart sounds were to be heard over it but no bruit. There was no cough, dysphagia, or alteration of voice; the pupils were equal and the pulses were equal in volume and synchronous. The skin was beginning to ulcerate and the case was regarded as hopeless. No drugs were given, but the patient was kept in bed, and in 11 days the apex of the tumour became harder and the height was reduced to two and a half inches. A deep fissure, however, appeared in the skin and on Nov. 2nd the aneurysm ruptured.

Necropsy.—The post-mortem examination showed a sacculated aneurysm of the ascending part of the aortic arch. There was a circular hole in the sternum two inches in diameter at the level of the second costal cartilage, through which the sac protruded. A layer of firm adherent white clot was attached to the wall of the sac. The aneurysm originated just outside the pericardium and involved the bend and first inch of the transverse portion. The illustration shows the condition of the patient on admission.

LIVERPOOL ROYAL INFIRMARY.

A CASE OF TRAUMATIC RUPTURE OF THE LEFT KIDNEY; NEPHRECTOMY; RECOVERY.

(Under the care of Mr. T. C. LITLER JONES.)

A MAN, aged 29 years, was admitted into the Liverpool Royal Infirmary in a collapsed condition. His history was that owing to a skid on the greasy roads the motor car in which he was travelling suddenly swerved and ran over an embankment 18 feet high, throwing him and his friend into a field. The car turned over and in doing so the steering wheel struck him a smart blow in the left lumbar region. He picked himself up and helped his friend to "put things straight a bit." A few minutes after he began to experience pain in the left loin and within a quarter of an hour this pain was excruciating. He lay down in the field for half an hour but feeling no better was carried to a public-house where he remained for two and a half hours more, the usual panacea being administered. Still feeling worse, he was conveyed to the infirmary in a cab, vomiting twice on the way.

On admission he was markedly collapsed; his pulse-rate was only 60 per minute and his temperature was 96° F. He did not present the usual appearance of one suffering from severe internal hæmorrhage but complained of great pain in the abdomen. He was admitted and put to bed where he soon began to rally. When Mr. Jones saw him some time later his pulse-rate was 88 and his temperature was rising. He had a fair colour, his respirations were slow and regular, and he stated that the pain which had been very severe had almost ceased and that he was now fairly comfortable. On examination no bruise was found and no fracture of his ribs could be detected; owing, however, to his corpulent figure an accurate examination of his ribs or even counting them was impossible. A more prolonged investigation was inadvisable but dulness was found as far forwards as the mid-axillary line. The patient soon after entering the hospital passed his urine. It contained blood in large proportion. The diagnosis as that of ruptured kidney with some extravasation of blood was made. Mr. Jones hoped that as the patient was already better the hæmorrhage had ceased and would not re-commence, and furthermore that if an operation were to become necessary the patient would be in a better condition to bear it. Against this possibility there was the argument that when the subject recovered from the shock the circulation improved, the heart beat more forcibly, bleeding re-commenced, and much valuable time was lost. Although it was tempting to administer a small dose of morphine to allay the pain he had the drug was withheld, as the site and the increase of pain were valuable symptoms in such a case. In two hours' time Mr. Jones again saw him and there was then no doubt that an immediate operation was necessary. The dulness had increased to two inches anteriorly to the mid-axillary line, he was sweating profusely, his expression was anxious, the pulse-rate had increased to 100 per minute, and the pain was now unbearable. There was a tendency to lie with the left leg slightly flexed and an unusual desire existed on the patient's part to be operated upon at once.

The patient being under the influence of chloroform the whole of the left side was carefully sterilised, as it was not at all certain that the kidney alone was injured, and it was also doubtful whether the hæmorrhage was intra- or retro-peritoneal, though the clinical signs pointed to the latter condition. The incision was started at what Mr. Jones took to be the position of the tip of the twelfth rib and continued towards the anterior superior spine of the ilium until about six inches long, in order to have immediate easy access to the seat of the injury. A sand pillow had been placed under the opposite loin to increase the space between the ribs and the crest of the ilium. The patient's figure has been referred to previously, but although the lower ribs could not be accurately felt Mr. Jones was surprised to find, posterior to his incision, a long rib of which about three inches were exposed in the wound. There was neither attachment to this bone of any intercostal muscle nor was the ligamentum arcuatum externum attached to it. This rib appeared to run in the substance of the transversalis muscle and approached to within an inch of the crest of the ilium, notwithstanding the fact that the patient was at the time flexed to the right side. Mr. Jones had on this occasion two assistants, Dr. Scott and Dr. Knowles, who both saw this abnormality. The rib above this one had the usual muscular relations, course, and appearance of the twelfth rib, so that if this was not a thirteenth it had a deficiency of normal attachments and an unusual length and course for the twelfth. When the patient was well enough an attempt was made to count the ribs with the aid of the x rays and there appeared to be 13 and on three occasions endeavours were made to obtain a skiagraph but the negatives were failures. There was no fracture of this rib, but it could be moved inwards very freely. Importance was attached to this abnormality, as it is well recognised that the lower ribs play an important part in injuries of the kidney due to direct violence. The kidney can be ruptured by sudden muscular effort, as in jumping, but the specimen shows a clean division, such as one would expect from a sudden squeeze from the lowest rib, and the steering-wheel could not in this case have reached the kidney without pushing before it this abnormal lowest rib. There are many specimens in museums of lumbar ribs, but it could not be positively asserted that this was one.

The wound being now opened in its entire length and the peritoneum which was uninjured pushed forwards there issued a large quantity of blood and clots. The pedicle of the kidney was immediately seized by the fingers to control the hæmorrhage which was still occurring, when it was found that the organ was torn into two pieces. Amongst the larger clots which were turned out of the abdomen was the lower third of the kidney with a piece of the pelvis attached to it. It was recognised that any attempt to save the remaining portion by a plastic operation upon it was hopeless, especially considering the man's condition, so the pedicle was ligatured and the remainder removed. Mr. Jones endeavoured to free the retro-peritoneal space from the effused blood but it was not possible. The blood in these cases is not in an actual cavity but is incorporated with the cellular tissue and nothing save a scraping or cutting operation can remove it. The removal of the effused blood is an important detail, as the after-history of these cases shows that of those who survive the injury and the operation many die of sepsis or suppuration in some form. Now this sepsis, apart from infection at the time of the operation, may be due to extravasation of urine from the injured kidney. In cases such as this in which the kidney is so torn that it is probably past secreting, or in those instances where little if any urine has had time to be secreted, sepsis still appears. This infection is probably due to invasion of the blood clot by micro-organisms. Mr. L. S. Dudgeon and Mr. P. W. G. Sargent have in this year's Erasmus Wilson lectures[1] shown that such collections of blood are infected from within and they describe a bacillus commonly associated with such infection. The wound was plugged with sterilised gauze and closed for two-thirds of its extent.

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[1] THE LANCET, Feb. 25th, p. 473, March 4th, p. 543, and 11th, p. 517, 1905.

On the next day there was a discharge of serum and a little blood. The serous discharge continued to come freely and gradually became thicker; so that on the sixteenth day it was to all appearance purulent. The incision healed by primary union where it had been closed and the patient's temperature kept normal all the time. The blood in the cellular tissue which could not be removed if infected was infected from within. The discharge was like that which one sees coming from a wound healing by granulation and the gauze plugging had left a large raw surface to heal in that manner.

The after-history was otherwise uneventful; the patient passed 35 ounces of urine the next day. On the sixth day he vomited once, probably because of his intense dislike to the milk diet. He was discharged six weeks after admission perfectly well except for a small sinus about an inch deep which soon healed outside the hospital. During his convalescence, and especially while the wound was being dressed, he often complained of pain in the left testis, thus reminding one of the well-known relationship between those two organs.

Remarks by MR. JONES.—Cases of immediate nephrectomy for ruptured kidney are not common, the operation generally taking place some time after the injury to relieve an abscess or extravasation of urine. The first nephrectomy for ruptured kidney was performed by Dr. H. G. Rawdon at the Liverpool Infirmary for Children.[2] The operation was undertaken to prevent more blood entering the bladder from the right kidney which had been injured 17 days previously. Four days later a suprapubic cystotomy was performed to relieve the cystitis and to empty the bladder of foul clots which were endangering the child's life. Pyelitis and suppuration of the left kidney, however, caused the child's death 19 days later. The splitting of the pelvis of the kidney and the serious hæmorrhage in my case prevented an attempt being made to save the larger portion of the organ, otherwise partial nephrectomy and suture of the torn surface might have been attempted.

CARDIFF INFIRMARY.

A CASE OF INTERSCAPULO-THORACIC AMPUTATION WITH REMOVAL OF A PORTION OF THE THORACIC WALL FOR RECURRENT CARCINOMA OF THE BREAST.

(Under the care of MR. WILLIAM SHEEN.)

FOR the notes of the case we are indebted to Mr. J. Bowen-Jones, late assistant house surgeon.

The patient, aged 58 years, was admitted into the Cardiff Infirmary on Jan. 7th, 1905. She was sent by Mr. T. W. Thomas of Caerphilly. Nine years previously she was an in-patient under Dr. Alfred Sheen. Reference to the former notes showed that the left breast and one enlarged axillary gland were removed for carcinoma; the fascia was cleaned off the pectoral muscle. The date of the operation was Sept. 7th, 1895. The patient remained well until the beginning of December, 1904, when she noticed a lump in the left armpit. This grew larger, the skin over it broke and radiating pain appeared. She was losing flesh and slept badly.

On admission there was a large, hard, irregular mass in the left axilla with the skin red and thinned over it; in one place the skin was broken and a thin pus exuded. Part of the scar of the previous operation was bound down to the mass. The veins over the pectoralis major were enlarged. There was pain down the arm but no œdema of the arm. There was no evidence of growth elsewhere.

Operation was performed on Jan. 9th. After the patient had been anæsthetised with ether removal was attempted but was found to be impossible owing to the growth surrounding and involving the vessels and nerves in the axilla. A portion was removed and showed on section a honeycombed appearance, the interstices being filled with a thin pus. The wound was closed and healed well except at one spot where the discharge continued. On Feb. 14th a second operation (interscapulo thoracic amputation) was performed. The operation was commenced under a mixture of eucaine and adrenalin but after the skin incisions were partly made the patient complained so much of pain that a general anæsthetic (ether and later chloroform) was given. An incision was made along the clavicle, inclining downwards at its outer end to meet a vertical incision in the mid axillary line. The clavicle was divided at the junction of its middle and inner thirds. Owing to the extension of the growth the subclavian vessels were tied high up, the dome of the pleura being exposed. The brachial plexus was freely dabbed with the eucaine and adrenalin mixture before being divided. When the chest wall was reached it was found that the growth infiltrated the second and third ribs with a portion of the intervening intercostal space, so a section of chest wall about four inches square was removed. The pleura was not invaded by growth but was opened, the lung collapsing. The patient was not at all affected by this. The collapsed lung was stitched to the margins of the wound in the chest wall and the whole skin wound was closed without drainage.

There was remarkably little shock after the operation. There was some dyspnœa for the first three days and oxygen was given. The wound healed throughout by primary union. The patient got up ten days after the operation and daily prophylactic x ray treatment was commenced. She left the hospital on March 18th and continued the x ray treatment as an out-patient. Microscopically the growth showed carcinoma with much degenerative change.

On April 10th the patient was readmitted with recurrence in the scar over the fourth rib. There was a hard nodule of growth about one inch in diameter adherent to the rib. Pus exuded from a sinus in the centre. Operation was performed on April 13th. The growth was removed with a portion of the underlying rib. Opening of the pleura and lung collapse again occurred without bad result. Primary union followed. The patient got up in ten days and was discharged on April 26th. She has continued the x ray treatment since and when last examined (middle of June) there was no evidence of recurrence.

Remarks by MR. WILLIAM SHEEN.—There are several points of interest in this case. A long time, over nine years, elapsed between the first and second operations, although the first operation was not of the extensive character that is performed at the present time. This and other cases show that, although usually, it is not always the fact that the more extensive the operation the less the probability of recurrence. Was there a focus of growth in the tissues since the first operation, or did the growth reappear, the patient having been free from cancer in the interval? If the former, why did the growth remain dormant for nine years?

Passing to the operation itself it was a great disappointment to me to find the chest wall affected in the last stages of the operation. I looked upon the rib resection with the almost inevitable opening of the pleura and resulting collapse of lung as a somewhat desperate measure, but the patient was not particularly affected by these events; in fact, she twice survived them. To be quite up to date thoracotomy should be performed in a special chamber under reduced air pressure. Such a chamber has been devised by Sauerbach.[1]

The attempt to perform so extensive an operation under local anæsthesia was unsuccessful but the case showed that the eucaine and adrenalin mixture is of value in diminishing loss of blood at the time of, and shock after, the operation. I suggest such local anæsthesia as a preliminary to general anæsthesia in similar severe operations. Following the example of other operators, the local anæsthetic was applied to the brachial plexus before dividing it to prevent a marked increase in the pulse-rate, such as has been noted in other cases. Although a pyogenic infection was present in addition to the cancer, yet the extensive wounds healed by primary union. Possibly the patient was self-immunised to pus cocci.

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[2] THE LANCET, May 26th, 1883, p. 907.

[1] Moyer. Annals of Surgery, May, 1905.

BRISTOL GENERAL HOSPITAL.—The half-yearly meeting of the governors of the Bristol General Hospital was held on Sept. 11th under the presidency of Mr. Proctor Baker. The chairman stated that for the first six months of 1905 the average daily number of in-patients was 179·3. The financial statement was satisfactory. Additional accommodation for the nurses and new isolation wards are required; these extensions will entail an outlay of about £12,000 and it will be necessary for the governors to make an appeal for that sum.

Reviews and Notices of Books.

The Practice of Medicine: A Text-book for Practitioners and Students, with Special Reference to Diagnosis and Treatment. By JAMES TYSON, M.D., Professor of Medicine in the University of Pennsylvania and Physician to the Hospital of the University; Physician to the Pennsylvania Hospital. Third edition. With 104 illustrations, including coloured plates. London: Rebman, Limited. 1905. Pp. 1240. Price 24s.

IN our review of the first edition of this text-book, which appeared in the columns of THE LANCET of May 1st, 1897 (p. 1210), we commented favourably on the all-round manner in which Dr. Tyson had accomplished the task which he had set himself. The work is essentially a practical one, stress being laid on diagnosis and treatment, but due attention is also given to morbid anatomy, etiology, and symptomatology. The third edition has been brought up to date and numerous additions and changes have been made in various parts of the work, especially in that portion devoted to infectious diseases. This section is a very large one, occupying over 300 pages. In addition to a description of diseases usually classified as infectious, the following affections are also included under this heading: para-typhoid fever, syphilis, gonorrhœal infection, croupous pneumonia, broncho-pneumonia, chronic interstitial pneumonia, tuberculosis as affecting the various organs of the body, rheumatic fever, and "infectious diseases of doubtful nature," such as "Weil's disease," miliary fever, and glandular fever. The inclusion of croupous pneumonia and rheumatic fever amongst the infectious fevers is now becoming general although some authors still prefer to consider them respectively amongst diseases of the lungs and diseases of the joints. We consider that the former malady should certainly be considered an infectious disease, and that rheumatic fever in the future will also be found to be such, although its bacteriology is not yet a matter of certainty.

An excellent account is given of typhoid fever and the pages devoted to the treatment of that disease will well repay careful study. Dr. Tyson speaks in highly favourable terms of the "Brand bath treatment," which he considers from his own experience and from that of other physicians to be the best that can be adopted. The cold bath treatment has been largely used in this country, but at present cold sponging is probably more generally employed. The Brand treatment consists of the cold bath in combination with massage. The patient is placed in a bath containing water at a temperature of 70° F. During the bath he is vigorously rubbed and is also encouraged to rub himself. A compress wrung out of ice water is kept upon his head or the head is sprayed with cold water from time to time. At the end of 15 minutes he is lifted on to the bed, the wet sheet is replaced by a dry blanket, and the patient is rubbed dry. None of the complications except hæmorrhage from the bowels is allowed to interfere with the carrying out of this treatment, neither is the menstrual period. It will be thus seen that the main difference between the bath treatment as practised in this country and as employed in America is that in the Brand method massage is considered an important therapeutical measure. We are not aware that the combination of bathing and massage has been extensively tried by English physicians.

The recent discoveries with regard to the mode of spread of yellow fever receive considerable attention. Dr. Tyson refers to the important results obtained by Dr. Reed and his colleagues in Cuba in 1900. These observers demonstrated that a mosquito—stegomyia fasciata—serves as the intermediate host for the pathogenic parasite and that an interval of about twelve days or more after the insect has become contaminated appears to be necessary before the mosquito is capable of conveying the infection. It was further determined, according to the same authorities, that the fever is not conveyed by fomites: hence disinfection of articles of clothing, bedding, or merchandise supposed to be contaminated is not necessary. Further arguing from the above conclusions, a house may be said to be infected with yellow fever only when there are present within its walls contaminated mosquitoes capable of conveying the parasite of this disease. While the mode of propagation of yellow fever seems to have been determined definitely there is still much doubt as to whether the pathogenic organism has been discovered. The measures taken in certain of the affected districts to destroy the breeding-places of the mosquitoes and to render dwelling-houses proof against the ingress of these pests have had most satisfactory results. In the case of yellow fever, as with malaria, a great advance has been made in the prophylaxis of the disease.

The section dealing with diseases of the blood and blood-making organs has been brought fully up to date and a good account is given of the various forms of anæmia. The whole book is capitally written and forms an excellent text-book both for students and for practitioners.

Observations on the Filarial Embryos found in the General Circulation of the Equidæ and Bovidæ and their Probable Pathological Significance. By ALFRED LINGARD, M.B., M.S. Durh., D.P.H. Cantab., Imperial Bacteriologist to the Government of India. Fasciculus I.: Surrati (Part I.). With six charts, nine illustrations in the text, and 12 plates. London: Adlard and Son. 1905. Pp. 59. Price 2s. 6d. net.

IN his introduction to this as yet not much worked out subject Dr. Lingard details the results obtained by workers previously to his own researches—namely, those of Wedl in 1848, Sonsino in 1876, Tabkeinoff, reported by Lange in 1881, Mazzanti in 1880, and of Dempster. The author, who has enjoyed unusual opportunities in India for investigating the diseases of different animals, had collected a vast number of facts with reference to the latter, when a disastrous fire attacked his laboratory, occasioning the loss of all his microscopical preparations, photographs, and pathological specimens, and thus delaying the publication of this monograph. Undeterred by this severe misfortune Dr. Lingard has tried to replace as many as possible of the links required in the chain of evidence and the publication of this interesting research is the first result.

With regard to the equidæ Dr. Lingard examined microscopically some 400 equines, and the chief conclusions which he drew were (1) that the filaria embryos are always present in the peripheral circulation during the 24 hours; (2) that they are present in much increased numbers during the latter half of the day; (3) that a marked decrease or absence was noted during September; and (4) that the larval forms appear to possess the attributes of the embryos of filaria perstans and filaria nocturna. After detailing the symptoms found in equines when large numbers of filariæ are present in the circulation, the author proceeds to the description of the filaria embryos in the blood, their movements, general appearance, shape, sheath, dimensions, and numbers: their pairing and life-span are fully set forth. Next the habitat of the parent nematode is discussed and it is seen that the walls of the large arteries are generally the situations in which they are most commonly noticed. These nematodes are then described. The author also made some experimental inoculations of animals with blood containing large numbers of filaria embryos, but with negative result. Finally as regards the intermediary host, he examined hundreds of flies and mosquitoes with the result that larval forms closely resembling those present in the blood of animals harbouring filaria were observed frequently, but unfortunately all these specimens were destroyed in the fire of 1899.

Next the researches on the bovidæ are detailed. The habitat of the parent filariæ is again found to be the large arteries, the common, anterior, and posterior aorta, other arteries being but seldom implicated. Some excellent plates exhibit this point. The nematodes are minutely described; the measurements of both the male and female worms are given, as also of the ova, their movements inside of the body of the host are described, and their longevity. The author finds that out of 100 necropsies on cattle from the plains at least 70 per cent. are affected, whereas in the hills only three cases were found in 2000 post-mortem examinations.

The concluding portion of this valuable monograph is occupied with the subject of bursati which is treated in a similar manner. A review of the work of previous observers is first given, then the experimental production of the bursati sore is described, and then the author supplies answers to many questions concerning anomalous conditions which before the light of our present knowledge were difficult to explain, concluding with the description of certain necropsies and the preventive and curative treatment. The work is illustrated by some beautiful plates.

A Text-book of Medical Chemistry and Toxicology. By JAMES W. HOLLAND, A.M., M.D., Professor of Medical Chemistry and Toxicology and Dean of Jefferson Medical College, Philadelphia. Fully illustrated. London, Philadelphia, and New York: W. B. Saunders and Co. 1905. Pp. 592. Price 15*s.* net.

CHEMISTRY is treated in this volume in so far as it relates to medicine and the author follows up his exposition of the chemical elements and compounds with a few sections on physiological and clinical chemistry, including a consideration of the digestive fluids of the body, bile, blood, milk, and urine. He has banished the usual classification into chapters, and on the contents page the references to the subjects are not under the headings of a chapter but against the number of the page on which the consideration of the subject is commenced—a plan that is quite satisfactory. But the work is distinguished sharply from the average text-book for a more important reason, the author realises the importance of recent developments in physical science in their relation to the various departments of medical study. These developments have led to fresh and wide fields of study and though it may not be possible to give in the scope of a medical text-book anything more than an outline of the principles involved we are glad to find that the author's determination has been to do so much. Hence an intelligent, if necessarily brief, presentation of the phenomena of cryoscopy, osmotic pressure, electric dissociation, and the ionic theory is given. It is frequently the excuse of writers of text books of chemistry intended for the reading of medical students that these subjects have developed into special branches which call for little treatment, but we agree with the author of the present volume that not only should an indication of the principles be given but some exposition also of the results. As he points out, the discoveries of Arrhenius, van 't Hoff, and Ostwald have been the point of departure of the biological researches of Loeb and Pauli, and the medical studies of Koranyi, Hamburger, and Zikel. There can be little doubt that the progress of physiological chemistry will be very materially helped as a deeper insight into the phenomena of dissociation, mass action, and osmotic pressure is gained. There are excellent sections on water-supply, with a short account of the biological and chemical examination of water with the view to deciding its fitness for drinking purposes. The analytical directions are necessarily brief but to the point, while the biological procedure laid down presupposes a knowledge of the laboratory methods of bacteriology. The author rightly points out that the most significant facts about a water-supply are often obtained by inspection of the source and its surroundings. In regard to the sterilisation of water he says that water infected with typhoid germs may be sterilised without boiling or filtering by permitting it to stand in brightly polished copper vessels for four hours at the ordinary temperature, or for 24 hours in a refrigerator. Copper in the form of a colloidal solution in amounts harmless to man is stated to be a germicide to the typhoid and cholera bacilli, whence, by the way, some rather quaint therapeutics have sprung. The coloured illustrations and drawings of crystals, deposits, and so on, are cleverly done and should be of considerable assistance to the student carrying out a practical course. Altogether this is an excellent text-book of chemistry and toxicology for the medical student, since it presents to him just exactly the points and principles bearing upon medical science which it is necessary for him to appreciate.

Higher Mathematics for Students of Chemistry and Physics. Second edition. By J. W. MELLOR, D.Sc. London: Longmans, Green, and Co. 1905. Pp. 631. Price 15*s.* net.

WE welcome with pleasure this second edition of Dr. Mellor's work which was reviewed by us in 1902 on its first appearance. The book has been supplemented by some 88 pages and has been largely rewritten; a new chapter has been added on the Calculus of Variations and all the misprints in the first edition have been carefully corrected in the present volume. It contains, as we said before, just the kind of mathematics that is daily required in the laboratory by advanced students. There is in some minds an erroneous notion that the methods of higher mathematics are prohibitively difficult. Any difficulty that may arise is rather due to the complicated nature of the phenomena alone. As Dr. Mellor says: "Logic and mathematics are both mere tools by which the decisions of the mind are worked out with accuracy but both must be directed by the mind. I do not know if it is any easier to see a fallacy in the assertion that 'when the sun shines it is day; the sun always shines, therefore it is always day,' than in the statement that since $\left(\frac{5}{2}-3\right)^2=\left(\frac{5}{2}-2\right)^2$ we get on extracting roots $\frac{5}{2}-3=\frac{5}{2}-2$ or $3=2$. We must possess a clear conception of any physical process before we can attempt to apply mathematical methods. ...... After experiment, then mathematics. It is only after the different workers have collected data that the mathematician is able to deduce the required generalisation. Thus a Maxwell followed Faraday, and a Newton completed Kepler."

Berthollet in 1789 surmised that the speed of a chemical reaction was proportional to the amount of reagent present. This speculation in this form cannot be experimentally tested for the speed is not constant during any finite interval of time, as the amount of the reagent present is continually decreasing. If this surmise be expressed as a differential equation by the methods of integration the amount of reaction that takes place in a given time can be found. On p. 218 Dr. Mellor gives the experimental results in the hydrolysis of cane sugar—i.e., the amounts of invert sugar formed in measured intervals of time. We have here all the data for discovering the truth of Berthollet's speculation. It was in this way that Wilhelmy verified the hypothesis, so that it is now known as Wilhelmy's law.

On p. 122 Dr. Mellor does not describe the three dimensions of space in the way now usually adopted. He makes the OY axis project outwards from the plane of the paper, instead of inwards. But in this he is supported by no less an authority than Dr. Routh, so that it seems invidious to criticise it, yet those who have worked with both systems of nomenclature will appreciate the superiority of the more modern method. A few trifling misprints may also be noticed; for instance, on p. 18 the reference to p. 154 should be 183; in the footnote on p. 151 PM should be PO; on p. 603 e is omitted in the expression for cos x. A mistake occurs on p. 235, where "$x^2 = 2y$" should surely read "$x^2 = 4y$"; while on p. 250 the evaluations of the triple integrals should be 2580, 1550, and 1470 respectively.

In conclusion, we heartily recommend this work to all students of chemistry and physics who are anxious to follow in Wilhelmy's footsteps. We point out a few small slips with no idea of detracting from the large merits of the work.

LIBRARY TABLE.

The Brassworkers of Berlin and of Birmingham: a Comparison. Joint Report of R. H. BEST, Chairman of Best and Lloyd, Limited, Cambray Works, Handsworth, Chairman of the Gas and Electric Light Fittings Masters' Association, President of the Nelson-street Adult Early Morning School; W. J. DAVIS, Secretary of the National Society of Amalgamated Brassworkers and Metal Mechanics; and C. PERKS, canvasser and representative of the Birmingham Hospital Saturday Fund and member of the General Dispensary, Birmingham. London: P. S. King and Son. 1905. Pp. 116. Price 1*s.*—This work is a record, embodied in a report, of the impressions of the authors, from a physical and industrial standpoint, of the life led by the brassworkers of Berlin as compared with that of the same class in Birmingham. It must be confessed that a perusal of the report is not flattering to our self-esteem, for in the opinion of its compilers the brassworkers of Birmingham, so far as their industrial and physical life is concerned, do not compare favourably with those of Berlin. The scrupulous cleanliness of Berlin was a feature of the city which especially impressed its visitors from the Midland metropolis, who thought that Birmingham in this respect, with great advantage to itself, might take example by the Prussian capital. But they do not seem to have realised that Berlin is the Prussian capital and seat of the Court, whereas Birmingham is frankly a manufacturing city. The educational system of Berlin found great favour with the authors and they were much struck with the fact that they "saw no case of underfed, poorly clad, or untidy children, either in the streets or in the schools." The medical supervision of the schools of Berlin would seem to be very thorough and effective and the municipal poor guardians and societies assist sick, defective, or needy children in every possible way. With regard to the drink question in Berlin, the writers are of the opinion that the labouring classes there are more temperate than those of Birmingham and are able to procure much purer beer. On the whole, according to this report the condition of the workmen in Berlin is better than that of the Birmingham workmen. The book provides instructive reading and undoubtedly much may be learned from a study of the German mode of industrial living and methods of municipal government. At the same time the paternalism that is so evident throughout Germany in the treatment of its working classes is somewhat opposed to British ideals. A clean and healthy race may be evolved by such means, but it tends to destroy independence and self-initiative. While some of the German methods may be copied with advantage, the salvation of the British working classes must be worked out on lines more in keeping with the national character.

Simple Lessons on Health for the Use of the Young. By Sir MICHAEL FOSTER, K.C.B., M.P., &c. London and New York: Macmillan and Co., Limited. 1905.—In the preface to this little work the author states that the critical attitude he assumed towards a certain syllabus entitled "Lessons on Hygiene" provoked indignant comment in some quarters and protest from a distinguished abstainer who saw in Sir Michael Foster's strictures mere destructive criticism. Hence the appearance of the work under notice, in which Sir Michael lays down the more or less obvious rules of health for children, placing especial stress on the use, and the dangers of use, of alcohol, the treatment of which question in "Lessons on Hygiene" brought forth his earlier remarks. In the United States, as well as in this country, strong efforts have been made by extreme total abstainers to prove to children in elementary schools from a scientific point of view that the consumption of alcohol is hurtful in all and any circumstances. These views have been combated in the United States and a number of eminent scientific men there have gathered together in two elaborate volumes the opinions on the subject of authorities in all parts of the civilised world. Sir Michael Foster sets forth in plain and simple but expressive language, easily comprehensible to a child, the use and abuse of alcohol. In the chapter on food and drink the action and use of stimulants generally are explained and it is shown that the action of beer, like tea, may be likened to whipping a horse · "It does not give any fresh strength; it whips up the strength given by real food." It is further pointed out that "there are times when it is a good thing, or even a very necessary thing, to give even the very best, the strongest and most willing horse a touch of the whip." The injurious effects of drinking too much tea or alcohol are referred to in language as easily to be understood by a child as the foregoing, and the fact is strongly emphasised that young people unless they are ill ought not to take any alcoholic drink at all. The chapter on food and drink is conceived and expressed in a rational and common-sense manner, is in a high degree adapted to a child's comprehension, and calculated to convey a proper impression concerning the subject. The other chapters of the book deal with fresh air, light and cleanliness, and are excellently clear expositions of their subjects. Sir Michael Foster, in our opinion, has done good service by publishing this little volume.

The Historical Relations of Medicine and Surgery to the End of the Sixteenth Century. An address delivered at the St. Louis Congress in 1904 by T. CLIFFORD ALLBUTT, M.A., M.D. Cantab., Hon. M.D. Dub., Hon. LL.D. Glasg., Hon. D.Sc. Oxon. and Vict., F.R.C.P. Lond., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge, Fellow of Gonville and Caius College, Honorary Fellow of the Royal College of Physicians of Ireland and of the New York Academy of Medicine. London and New York: Macmillan and Co., Limited. 1905. Pp. 125. Price 2*s.* 6*d.*—This book contains the address dealing with the outward relations of inner medicine delivered by Professor Clifford Allbutt before the Medical Congress held at the St. Louis Exposition. In sketching the historical relations of medicine and surgery the author has confined himself to ancient and mediæval times. It is pointed out—a fact which in the present age is too often lost sight of—that to the student of Greek medicine the separation of surgery from medicine seems as false in notion as in practice it has been pernicious. Professor Allbutt is of the opinion that "the hour has come to amalgamate medical institutions and customs, to establish an Academy of Medicine every member of which shall be free to develop his faculties in whatsoever honourable paths they may lead him, and formally to recognise an integration which in spite of custom, in ophthalmology, dermatology, gynæcology, has established itself before our eyes." The address itself is well worthy of the reputation of Professor Allbutt as a writer of clear and expressive English and presents a vivid and instructive word-picture of the historical relations of medicine and surgery in ancient and mediæval times. In regard to Ambroise Paré the author takes occasion to correct a common misapprehension as to the invention of the ligature and draws attention to the fact that Paré did not invent the ligature but improved it to such an extent that he was able to perform amputations successfully without the aid of boiling oil and a red-hot knife. At the close of his address the author shows that up to the time of Avicenna medicine was one and undivided and that in the divorce the physician has been by far the greater loser; he urges that medicine and surgery should again go hand in hand.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India: On a Parasite found in Persons suffering from Enlargement of the Spleen in India (Third Report). By Lieutenant S. R. CHRISTOPHERS, M.B., Ch.B. Vict., I.M.S. Calcutta: Office of the Superintendent of Government Printing, India. 1905. Pp. 14. Price 10 annas (or 1*s.*).—In this memoir Lieutenant Christophers deals with the development undergone by the parasite in citrated blood at a low temperature. The correct zoological position of the organism is at present extremely uncertain; it may be a piroplasma according to Laveran, Mesnil, and Major O Donovan, I.M.S.; a trypanosome according to Major W. B. Leishman, R.A.M.C., Marchand, and Ledingham; or a protozoon according to Major Ronald Ross and others. Captain L. Rogers, I.M.S., has stated that by adding blood from cases of splenomegaly caused by the parasite to sterile citrate of sodium solution he has observed the development of the parasites in question into trypanosomes. This observation was thought to confirm the view of their trypanosomic nature, but Lieutenant Christophers points out that the bodies of Rogers differ considerably from the ordinary trypanosomes found in animals in possessing no undulating membrane, in the position of the micro nucleus or centrosome at the end of the parasite, and in the flagellum passing out of the parasite directly from the micro-nucleus. Captain Rogers appears to have been the only observer who has described the extra-corporeal development of these bodies. In this memoir Lieutenant Christophers gives an account of the technique employed by this observer and portrays the two types of development noted by him. His own experiments enable him to state that in the main he agrees with Captain Rogers's results; but he has observed certain further appearances not described by him which appear to take place at a later date. In one particular, however, he failed to confirm Captain Rogers's observations, in that he was unable to accept his conclusions regarding conjugation of the large forms. Captain Rogers noted large forms on the second day and flagellate forms on the third day. He did not note any further changes than those seen on the fourth day, which corresponded to those obtained by Lieutenant Christophers on the fifth and sixth days. The author of this memoir found that the formation of masses of pear-shaped and irregular forms was the chief feature in the process of development from the ninth day. The account is illustrated by some excellent plates.

JOURNALS AND MAGAZINES.

Dublin Journal of Medical Science.—In the August number Mr. E. H. Bennett treats of fractures of the first costal cartilage and defends himself against the aspersion that the case in which he originally described this form of injury was in reality an instance of dislocation of a joint formed in the ossified cartilage. His paper is founded upon no less than six specimens of this injury which were shown to the Section of Pathology of the Royal Academy of Medicine in Ireland. Dr. George Peacocke reports the occurrence of Hodgkin's disease in twins and Dr. Walter Charles Oram deals with the treatment of ringworm of the scalp by means of the x rays. An article by Dr. Alexander Hammett Marks gives an account of a recent epidemic of dengue in Brisbane but unfortunately throws no new light upon the pathology of this disease which has been attributed by one observer to a special hæmatozoon. Under the heading of "Medical Miscellany" an interesting account is given by Dr. John Knott of the mediæval scientist, van Helmont.

SCHOLARSHIPS AND PRIZES AT THE METROPOLITAN MEDICAL SCHOOLS FOR THE YEAR 1904-05.

Charing Cross Hospital.—Epsom Scholar, L. H. Taylor; Livingstone Scholar, C. J. Fox; Huxley Scholar, H. F. L Hugo; University Scholars, C. Beards, W. D. Keyworth, and T. W. Wade; Governors' Clinical Gold Medal, T. Stordy; Llewellyn Prize, Certificate, and £25, W. W. D. Chilcott; Pereira Prize, Certificate, and £5, W. D. Keyworth; Huxley Medal with prize of £10, R. H. H. Jolly; Golding Prize, Certificate, and £10, L. M. Webber; Practical Chemistry, prize, C. J. Butler; Midwifery, prize, W. K. Beaman; Pathology, prize, W. K. Beaman; Public Health, prize, R. K. Shepherd; Therapeutics, prize, J. W. Heekes; Forensic Medicine and Toxicology, prize, W. K Beaman; Materia Medica, prize, T. W. R. Strode; Anatomy (senior), prize, R. H. H. Jolly, ditto (from lecturer), W. E. Wilks, æq.; Anatomy (junior), prize (Steadman), L. M. Webber; prize (School), W. D. Southern; Biology, prize, C. J. Fox; Chemistry, prize, G. Whittington; Physiology (senior), prize, R. H. H. Jolly; Physiology (junior), prize, L. M. Webber; Medicine (senior), prize, L. E. M. Smith; Medicine (junior), prize, W. S. Fenwick; Surgery (senior), prize, W. W. D. Chilcott; Surgery (junior). prize, W. S. Fenwick; Practical Medicine, prize, W. S. Fenwick; Psychological Medicine, prize, W. W. D. Chilcott; Ophthalmology, prize, E. C. Sprawson; Practical Midwifery, prize, A. K. Taylor.

Guy's Hospital.—Open Scholarships in Arts: Geoffrey Dunderdale, Clifton College, £100; William Henry Catto, Royal College, Mauritius, £50; and Marc Antoine Emile Duvivier, Royal College, Mauritius, certificate. Open Scholarships in Science: Charles Albert Wood, Guy's Hospital, £150; Guy Fleetwood Haycraft, Guy's Hospital, £60; and Hugh Braund Kent, the Northern Polytechnic, certificate. Scholarship for University Students: Patrick Playfair Laidlaw, B.A., St. John's College, Cambridge, £50. Open Scholarships in Dental Mechanics: October, 1904, John Richard Doren Ditch, £20; May, 1905, William Francis Boxall, £20. Junior Proficiency Prizes: Harry Archibald Sanford, £20; Arthur Norman Leeming, £15; Vincent Townrow, £10; and William Johnson, certificate. The Michael Harris Prize for Anatomy: Gilbert Francis Syms, £10. The Wooldridge Memorial Prize for Physiology: Harry Archibald Sanford, £10; and Leonard Tilsley Baker, certificate. The Hilton Prize for Dissections: Edward Leslie Martyn Lobb, £5. The Arthur Durham Prizes for Dissection: first year's students: Hugh Braund Kent, £5; and George Dunlop Martin, certificate. Senior students: Edward Leslie Martyn Lobb, £15; and Harry Archibald Sanford, certificate. Dental Prizes: first year's students: Harold Todd Reeve, £10; and Frank Maurice Holborn, certificate; Horace Edmund Marsh, certificate. Second year's students (1904): Arthur Alan Forty and James William Mawer, equal, £7 10*s.* each. Practical Dentistry Prize: Fritz Julian Messer, £10. The Golding-Bird Medal and Scholarship in Bacteriology: Edwin Walter Routley, £20.

London Hospital.—Price Scholarship in Science, £120, A. H. Penistan; Price Scholarship in Anatomy and Physiology, £60, R. B. Lloyd; Entrance Science Scholarships, £60, C. I. Wright; £35, R. Candy; honorary certificate, E. B. Morley. Buxton Scholarships—Arts, £30, D. Mallam; £20, F. C. Tibbs. Epsom Scholarship, J. P. Little. Clinical Medicine, £20 scholarship, H. L. Tidy and A. J. Walton, æq. Clinical Surgery, £20 scholarship, A. J. Walton. Clinical Obstetrics, £20 scholarship, C. T. Scott; honorary certificates, J. E. Adler and H. Gooch. Duckworth Nelson Prize, biennial, £10, A. J. Walton. Andrew Clark Prize, biennial, £26, awarded 1904. Letheby Prizes, senior £10 each, W. S. Wildman and A. F. Evans; honorary certificates, F. N. H. Maidment, W. H. Parr, and W. J. O'Donovan; junior £10, H. Neame; honorary certificate, E. H. Rainey. Sutton Scholarship, £20 scholarship, H. L. Tidy. Hutchinson, Prize, triennial, £40, H. Balean. Anatomy and Physiology, £25 scholarship, T. H. C. Benians and R. B. Lloyd, æq.; honorary certificates, C. E. Zundel, J. Parkinson, H. D. Thomas, D. G. Evans, and W. H Palmer. Anatomy and Biology, £20 scholarship, Stanley Boyd; honorary certificates, A. H. Penistan and E. B. Morley. Minor Surgery Prizes (not awarded). Practical Anatomy, £6 prize, E. B. Morley; £4 prize, S. Boyd and A. H. Penistan; honorary certificate, A. T. Brown Anderson Prizes: prizes, C. T. Scott, H. E Jones, R. C. Roberts, C. E. Zundel, P. A. Bahr, and A. R Jordan; honorary certificates, T. B. Bartlett, L. J. Austin, and S. J. A. Beale. Douro Hoare Prize, £5, E. B. Morley; honorary certificates, H. Penistan, S. Boyd, and N. F. Sinclair.

London (Royal Free Hospital) School of Medicine for Women.—Prizes: Physics (Preliminary Science), H. G. Morland and C. M. Peake (divided); Inorganic Chemistry (Preliminary Science), I. N. Clough; Practical Chemistry (Preliminary Science), 1903-04, E. O. Eaves; Practical Inorganic Chemistry, M. M. Basden; Organic Chemistry (Preliminary Science), E. Warren; Practical Organic Chemistry, E. C Goodison: Biology (Preliminary Science), 1903-04, A. B. Walsh; Biology (Preliminary Science), 1904-05, F. M. Edmonds; Anatomy (Junior), A. B. Walsh; Anatomy (Senior), first, K. Brown, second, E. M. Walters and M. V. Webb (divided); Practical Anatomy, first, M. V. Webb, second, M. Wild; Physiology (Junior), B. P. Lindup; *Physiology* (Senior), K. Brown; Practical Physiology, R. Jordan; Histology and Practical Histology, F. M. Morris; Materia Medica, Junior, E. M. Walters; Medicine, S. C. E. Sommer; Surgery, O. B. Smith; Gynæcology, first Durham Prize, E. Bolton, second, *H.* N. Payne; Midwifery, S. C. E. Sommer; Operative Midwifery, Evans Prize, R Western; Pathology (Theoretical), L. R. H. Davy, (Practical), E. Bolton; Ophthalmic Surgery, E. Bolton. Scholarships: Entrance, £30, E. M. Morris; St. Dunstan's Medical Exhibition, given by the governors of the St. Dunstan's Educational Foundation, £60 a year for five years, M. Muncey; Mackay Prizes, £20 each, October, 1904, first, E. R. Griffiths, second, E. H. Lepper; Mabel Webb Research Scholarship, £30 a year for two years, 1903, J. E. Lane Claypon; Bostock Scholarship (University of London), £60 a year for four years, 1903, E. M. Walters.

Middlesex Hospital.—Class Prizes:—Practical Pharmacy, H. G. Alexander; Histology, G. Fryer; Chemistry, H. D. Grant; Biology, R. W. Annison; Chemistry (preliminary science), 1st, R. W. Annison, 2nd, G. O. Teichmann; Physiology, C. H. S. Webb; Practical Anatomy, C. H. S. Webb; Anatomy, C. H. S. Webb; Pharmacology, W. Gilliatt; Pathology, E. L. Kennaway; Bacteriology, H. W. Acton; Forensic Medicine and Public Health, M. L. Hine; Psychological Medicine, P. C. Conran; Practical Midwifery, M. L. Hine; Practical Surgery, M. L. Hine; Practical Medicine, E L. Kennaway; Surgery, M. L. Hine; Medicine, M. L. Hine; Second Year's Exhibition, C. H. S. Webb; Leopold Hudson Prize, H. W. Acton; Lyell Medal, *R.* E. Pitts; the Governor's Prize, W. D. Hartley; Prox. Acc., S Barradell-Smith; Hetley Clinical Prize, H. W. Acton; Freeman Scholarship, H. W. Acton; Brodeiip Scholarship, 1st, H. W. Acton, 2nd, W. D. Hartley and R. E. Pitts, æq.

St. George's Hospital.—William Brown £100 Exhibition, F. W. Higgs; Brackenbury Prize in Medicine, E. H. B. Oram; Brackenbury Prize in Surgery, E. H. B. Oram; Webb Prize in Bacteriology, J. S. C. Douglas; the Treasurer's Prize, H. A. Browning; Sir Benjamin Brodie's Clinical Prize in Surgery, D. W. Roy; the Henry Charles Johnson Prize in Anatomy, F. Brachi; Sir Charles Clarke's Prize, G. E. Friend; Prize for Proficiency in Chemistry, Physics, and Biology, E. Coplans; Prize for Proficiency in Anatomy, Physiology, Histology, and Physiological Chemistry, J. Leighton Houlton; Prize for Proficiency in Anatomy, Physiology, and Organic Chemistry, B. Cohen.

St. Mary's Hospital.—Open Scholarships in Natural Science, £145, W. L. Cowardin, £52 10*s.* each, E. W. Archer, A. B. Porteous, and T. A. F. Tyrrell; University Scholarships, £63 each, C. H. Rothera, B A. Cantab, and K. A. Lees, B.A. Cantab. General Proficiency Scholarships—Anatomy, Physiology, and Histology: A Fleming; Midwifery, Pharmacology, Pathology, and Medical Jurisprudence: G. S. Thompson; Medicine, Surgery, Operative Surgery, Hygiene, and Mental Diseases: V. Z. Cope, B.A. Special prizes—Clinical Medicine, E. T. H. Davies and G. S. Thompson (æq); Clinical Surgery, G. E. Peachell, H. E. Kitchin, B A., and V. Z. Cope, B.A.; Ophthalmology I., V. Z. Cope, B.A.; II., C. I. Graham; *Dermatology Prize* I., V. Z. Cope, B.A.; II. (not awarded); Prosectors of Anatomy, D. W. Daniels and H. L. Barker. Summer session prizes, 1904.—Hygiene, V. Z. Cope, B.A.; Midwifery, E. T. H. Davies; Medical Jurisprudence, G. S. Thompson; Materia Medica and Pharmacology, A. Fleming; Psychological Medicine, V. Z. Cope, B.A.; Chemistry and Physics, J. L. Waller; and Organic Chemistry, A. Fleming. Winter session prizes, 1904-05.—Medicine (not awarded); Surgery, G. S. Thompson; Pathology, A. Fleming; Practical and Operative Surgery, T. E. Francis; Anatomy (senior), D. W. Daniels; Physiology (senior), D. W. Daniels; Anatomy (junior), A. B. Porteous; Physiology (junior), E. W. Archer; Biology, T. Hare and H. H. Tanner, æq.

University College.—Faculty of Medicine, Winter Session, 1904-05. Entrance Scholarships—Bucknill Scholarship (£30 per annum for four years), H. L. Tasker; Intermediate Medical Course (£63 scholarship), A. R. S. Alexander; Final M.B. Course (£84), Otto May, H. C. Samuel. Atkinson-Morley Surgical Scholarship (£45 per annum for three years): H. T. Mant. Atchison Scholarship (£55 per annum for two years): S. A. Owen. Cluff Prize (£15): W. E. Haigh. Erichsen Prize: E. D. Whittle. Pathological Anatomy and Bacteriology—Second class: G. Wray Sudlow. Physiology—Senior class: gold medal, F. J. F. Barrington; silver medal, W. E. Haigh; certificate, 3*, E. N. Cook. Second class: E. M. Cowell, E. K. Martin, and Norman Prescott. Third class: Percy Annett, F. C. Shore, J. G. Owen, M Cohen, and F. G. Sergeant. Junior class: silver medal, S. H. Wood. Second class: R. L. Crabb, D. Kennedy, R. W. W. Vaughan, F. M. R. Walshe, and R. N. Woodsend. Third class: H. G Janion, R *B.* Phillipps, and H. L. Tasker. Practical Physiology—Senior class: silver medal, E. N. Cook; certificates, 2*, W. E. Haigh; 3*, E. M. Cowell, E. K. Martin, and F J. F. Barrington. Second class: Norman Prescott and J. G. Owen. Third class: F. G. Sergeant and M. Cohen. Anatomy—Senior class: gold medal, E. N. Cook; silver medal, W. E. Haigh. Second class: F. J F. Barrington and E. M. Cowell. Third class: J. G. Owen and E. K. Martin. Junior class: silver medal, D Kennedy; certificate, 2*, R. N. Woodsend. Second class: R. L. Crabb, F. M. R. Walshe, and R. W. W. Vaughan. Third class: H. G. Janion. Medicine—Second class: H. R. Evans and L. F. Hirst. Third class: E J. Sunnucks and A. C. Watkin. Surgery—Second class: H. R. Evans and L. F. Hirst. Clinical Surgery: Liston gold medal, J. B Howell. Clinical Medicine—Senior class: Fellowes gold medal, T. L. Evans; Fellowes silver medal, J. A. Watt; certificates, 3*, L. F. Hirst; 4*, H. C. Simon and A. C. Watkin; and 6*, H. R. Evans. Junior class: Fellowes silver medal, H. O. Samuel; certificates, 2*, Otto May and D. O. Taylor; 4*, E. J. Price; 5*, J. Appleyard; 6*. W. H. King; and 7*, D. Embleton. Summer session, 1904-05. Pathology: certificate, 1*, A. S. MacNalty. Third class: G. Wray Sudlow. Medical Jurisprudence: gold medal, G. Wray Sudlow; certificate, 2*, A. E. Evans. Histology and Practical Histology—Second class: A. R. S Alexander and F. M. R. Walshe. Third class: C. W. Morris and R N Woodsend. Therapeutics—Third class: G. Wray Sudlow. Hygiene—Second class: G. Wray Sudlow and T. L. Evans. Clinical Medicine—Senior class: Fellowes gold medal, G. Wray Sudlow. Junior class—Fellowes silver medal, Herbert Hawker; certificates, 2*, Frank Clayton; and 3*, J H. Farbstein. Second class: H. C. Colyer, N K. Foster, and O. Marshall. Third class: J. J. Suckling. Ophthalmic Medicine and Surgery—Second class: C. W. Gittens. Midwifery—Senior class: gold medal, A. Randle; silver medal, F. S. Rood; certificate, 3*, J. R. Foster. Second class: R Bruce Low and T. L. Evans. Third class: A. E Evans Junior class—silver medal: E. J. Price. Pharmacology—gold medal, W. E. Haigh; certificates, 2* æq, E. M. Cowell and R. L. Crabb; certificates, 4* æq, H. S. Furness and J. G Owen. Third class: N. Prescott.

Westminster Hospital.—Scholarships.—Epsom, 110 guineas, K F. R Davison; in Arts, £60, G. F. Rigden; Natural Science, £60, B W. Brown; University, £40, R. W. Ironside; Science, £40, A. O. Mitchell; in Arts, £40, C. R. Dudgeon; in Arts, £30 A. H. Evans; in Arts, £30, G. A. E. Kelman; Governors', £40, W. R. Asplen; and Epsom, 110 guineas, A. H Platt Prizes.—Practical Chemistry, S. S. M. Wood; Midwifery, F M. W. South—certificate, C Fletcher; Histology, E G. Foote—certificate, J. A. B. Hicks; Treasurer's, H. Hingston; Pathology, C. Fletcher; Pharmacology, J A. B Hicks; "Bird" Medal and Prize, £14, J. J. W. Evans—certificate for "Bird" examination, J. W. L.

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* Obtained the number of marks qualifying for a prize

Scott; Medicine, J. J. W. Evans; Anatomy, G. F. Carr; Physiology, G. R. Strong; and Surgery, J. J. W. Evans.

THE NEW SYDENHAM SOCIETY.

THE forty-seventh annual meeting of the New Sydenham Society was held at Leicester at the meeting of the British Medical Association when the chair was taken by Mr. Henry Power in the unavoidable absence of the President, Professor William Osler. The report for the year 1904 was read. The subjects illustrated in the atlas were enumerated in the report and it was also announced that the income for the coming year would allow of the publication of a printed volume of selected essays, partly from German sources, which would include, among other subjects, the original papers announcing the discovery of the parasite of syphilis. The decision of the council to allow members to select one volume annually from the society's back stock without payment and the appointment of Dr. Alfred E. Russell as acting secretary were also announced.

In reply to questions by Dr. R. H. COOMBS and Dr. FURLONG as to the likelihood of an appendix to the lexicon being issued the CHAIRMAN pointed out that although a large amount of material had been already accumulated the funds of the society would not allow of its issue, at any rate for the present.

Mr. JONATHAN HUTCHINSON drew attention to the fact that the society, which had for several years issued only its clinical atlas, was likely in the future to revert somewhat to its original function in the translation and publication of printed volumes. These volumes, however, would not be large works but would consist of short selected monographs bearing upon the principal questions of the day. An annual volume of this kind might be made to supply the best and most recent information on the topics contained and could be issued promptly. The "Atlas of Clinical Medicine" would still be its principal work and four fasciculi would be issued each year. In addition to these members would receive the annual volume and would further be entitled to select each year a volume from the society's stock in hand. In offering this the council was making liberal arrangements and he earnestly hoped that members would endeavour to increase the scope and membership of the society. He would appeal to the younger and more active members of the profession on the plea that the atlas and the annual volume would deal with practical topics and would illustrate the foremost and most original views respecting them. The selection of subjects for illustration was decided by a large "atlas committee." It was not true, as had been suggested, that the atlas had dealt chiefly with rare affections and recondite speculations; it had already, amongst a host of other subjects, devoted much attention to syphilis, to the effects of arsenic, to fractures and dislocations, to drug eruptions, and was now dealing with eruptions due to the bites of insects. It could not be asserted that these were subjects with which the family practitioner was not concerned. The atlas was, indeed, he ventured to assert, a work which every practitioner would do well to have constantly at hand. To those members of the profession who had earned the right to rest he would make appeal on other grounds. They might suitably subscribe in the capacity of patrons and in recognition of the fact that the society was doing good work for the advancement of medical science.

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The CHAIRMAN, in replying to a vote of thanks, laid great stress on the invaluable work which Mr. Hutchinson had done and was doing for the society.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Sept. 22nd, 1827.

Again I say, then, that we must look to the *history* of the lithotomy, and the different methods that have been employed in operating, under this notion, that if we do not, we will be trifling about inventing little matters that have been invented, and tried long ago. Even if a man is to exercise his own ingenuity, and be a dexterous operator, he had better do that on the ground on which others have done it before him, than trust to his own ingenuity; therefore, I should conceive that it would be best suited for this place, since we cannot have the subject in demonstration before us, to consider what is the most successful and easiest mode, by alluding to the history of this operation.

Well, then, the course of operating seems to have begun at a period very far back, but even at the time of the Romans, in the works of Celsus, we can trace it. It seems of little consequence whether Celsus was really a surgeon, or an amateur; whether he operated, or whether he merely hung over the surgeon and described what was to be done; but we are bound to notice, in particular, the manner of the instruments, and particularly those of the Romans, as described in the books of Celsus. This operation was sometimes called *Lithotomia Celsiani;* it has also been termed the operation minor, meaning the simplicity of the operation; and indeed the whole of the instruments used seem to have been a *hook* and *knife*. And it is described, that the patient was ordered to jump and move sharply about to get the stone down; then to be taken into the hands of the assistants, who were to hold him down by the shoulders, pull up his legs, bring forward his breech, and keep him in that position; then it is described that the operator thrust his two fingers into the rectum, and if he felt the stone in the bladder, he could lay hold of it with his fingers, bring it forward into the perinæum, shake it from its position, bulge and project it into the perinæum, and when he had done so, then you can imagine how rapidly the operation must have been performed. He makes a first incision, which has puzzled the commentators of the day; it is a transverse, a semi-lunar transverse incision, and the finger pressing on the stone causes it to keep prominent and bulging, and he cuts on in a transverse semi-lunar manner through the integuments again and again, until the stone falls into his sleeve. Now, you will say, is it possible that the stone can be so caught? Is it possible to catch it with the fingers and bring it back? Now that I can assure you of, because I have myself operated in this way on boys, and at any time, in the dead subject, you will find by sounding. Suppose you open the bladder in the dead body, and put a stone into it, you then put the fingers into the rectum, and passing the sound into the bladder you can bring the stone forward, and by keeping the fingers in the rectum you cut directly upon it. This is not the operation then which may be performed on boys only, but the operation may be performed on adults also; and here I have to confess to you, that the first operation I performed was in this way, and to save the urethra I brought the stone forward with my finger in the rectum, and cut directly upon it until it came into my hand. It so happened that the operation was successful, and that it was repeated you can easily conceive; it was repeated, but I am bound to tell you, that I was more afraid of what I had done after I had succeeded in extracting the stone than I was before; for this is one of the instances in which I conceive it to be my bounden duty to express to you that we ought not to go groping about doing ingenious things from our own dexterity, and that our experience is not to be compared with what we have in history, for when we have heard of lithotomists cutting thousands, and when we have the experience of men fairly detailed to us who have cut their thousands, we ought to be very cautious indeed of pretending to put into competition with that experience our own ingenuity; and I thought, when I was operating, that the rule was not to cut the neck of the bladder in lithotomy. Now I did not cut the neck of the bladder, and it was a miracle the patient did not die.[1]

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THE LANCET.

LONDON: SATURDAY, SEPTEMBER 23, 1905.

The Epidemic of Small-pox at Dewsbury.

IN an article in THE LANCET in 1898[1] a quotation was made from the *Vaccination Inquirer* which, a few months after the Royal Commission on Vaccination was appointed, had written as follows: "Halifax, which has so strangely lagged behind, is about to come into line with Keighley, Dewsbury, Bradford, Leicester, Oldham, Gloucester, Falmouth, and other towns where vaccination has been left optional." Our article then proceeded to point out that before the Royal Commission had concluded its sittings necessity had arisen to obtain reports regarding outbreaks of small-pox in no less than six of the eight towns mentioned by the *Vaccination Inquirer*. Leicester, which had an historic outbreak in 1892-93, has again suffered from small-pox, this time to the extent of over 700 notified cases, notwithstanding very active vaccination of "contacts," and now the Dewsbury union also has had another visitation. The total cases in the union have amounted to over 1300, but, unfortunately for reporting as well as for administrative purposes, several different sanitary authorities have been concerned in the outbreak, so that, up to now, no complete account of the epidemic has been published. In December last Dr. S. W. WHEATON of the Local Government Board reported on the epidemic at the stage which it had reached in October. He pointed out how seriously the board of guardians was neglecting its duties with regard to vaccination and how defective was the administration of the union in various respects. Following his report the Local Government Board, instead of spending more time in endeavouring to compel the guardians actively to administer the Vaccination Acts, issued an Order empowering certain of the sanitary authorities to establish vaccination stations and to make special medical appointments with the view to check the progress of the epidemic. The measures taken under the Order proved very successful. The cases quickly diminished and the epidemic came to an end early in the present year. It is to be hoped that the Board will again send Dr. WHEATON to Dewsbury in order to make a complete report on the whole course of the epidemic throughout the union.

Meanwhile, so far as the borough of Dewsbury itself is concerned a very useful report has been prepared by Dr. J. SPENCER LOW who was medical officer of health during the later part of the epidemic, and at the same time Dr. E. MAYNARD ASHCROFT, the medical officer of the small-pox hospital, has reported on the hospital and the cases treated in it, these including a number from outside the borough. The population of the borough in 1904 is estimated at 27,502. In 1891-94, when small-pox last prevailed in it, the total notified cases were 312, with 63 deaths. In the recent epidemic, including the two years 1903-04 and the first quarter of 1905, the notified cases were exactly 700 and the deaths were 68, so that, as has also been the experience of Leicester, the later outbreak, while of a milder type, has attacked twice as many persons as the earlier one. Dr. WHEATON'S report indicated an extraordinary degree of practical disbelief by the Dewsbury population in the dangers of small-pox and in the value of vaccination. It is probable that this may have been partly due to the influence of a well-known opponent of vaccination, a vice-president of the National Antivaccination League, who, as chairman of the board of guardians, made a speech reported at much length in the local press, in which he tried to alarm the public by the wild suggestion that vaccination is probably a cause of the increase of cancer in England. As recorded by Dr. LOW, disbelief in the infectivity of small-pox expressed itself, for example, in the visitation of invaded houses by neighbours and friends and in the clandestine removal of infected bedding so as to avoid disinfection. Quite a number of cases of the disease were concealed or not notified. In presence of the great spread of the disease in this very incompletely vaccinated community, lulled into a false feeling of security, the public health staff was at one time unable to maintain sufficiently complete observation of "contacts," and in some cases disinfection was not thoroughly performed. For the same reason the hospital became overcrowded and had to be extended. In addition to all this there is the fact, already noted, that the Dewsbury union is not under uniform sanitary control, there being more than half a dozen different administrative areas.

Confining our attention to the statistics of 1904, the total cases of small-pox appear as 552, the total number of infected houses being 373. One case occurred in each of 280 houses and in the other 93 invaded houses the cases ranged from two to eight. At an inspection of the elementary schools instituted in November it was found that of 3762 children there were 1191 unvaccinated and 2571 vaccinated. The unvaccinated minority included 73 children who were ascertained to have had small-pox in this epidemic or previously. The corresponding contribution by the vaccinated majority was only three cases and in each of these three an interval of more than ten years had elapsed between vaccination and the attack of small-pox, whilst one of the three showed no marks of the operation. Had the vaccinated been attacked as the unvaccinated were in proportion to their numbers instead of three cases Dr. LOW points out that there would have been 157, and this, be it noted, in a town where vaccination had for many years been practically optional, so that the unvaccinated were not a weakly class, exempted because of ill-health, temporary or permanent. The effect of the school visitation and of subsequent communication with parents appears roughly to have been that now the unvaccinated are reduced to about 20 per cent., and Dr. LOW holds that if another epidemic were to occur it would be a matter of no great difficulty to get this percentage much further reduced. As regards the total Dewsbury population of 27,000, it appears that in the two years 1903-04 the public vaccinator operated on 5755 persons and

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[1] THE LANCET, Feb. 19th, 1898, p. 529.

Scott; Medicine, J. J. W. Evans; Anatomy, G. F. Carr; Physiology, G. R. Strong; and Surgery, J. J. W. Evans.

THE NEW SYDENHAM SOCIETY.

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Confining our attention to the statistics of 1904, the total cases of small-pox appear as 552, the total number of infected houses being 373. One case occurred in each of 280 houses and in the other 93 invaded houses the cases ranged from two to eight. At an inspection of the elementary schools instituted in November it was found that of 3762 children there were 1191 unvaccinated and 2571 vaccinated. The unvaccinated minority included 73 children who were ascertained to have had small-pox in this epidemic or previously. The corresponding contribution by the vaccinated majority was only three cases and in each of these three an interval of more than ten years had elapsed between vaccination and the attack of small-pox, whilst one of the three showed no marks of the operation. Had the vaccinated been attacked as the unvaccinated were in proportion to their numbers instead of three cases Dr. LOW points out that there would have been 157, and this, be it noted, in a town where vaccination had for many years been practically optional, so that the unvaccinated were not a weakly class, exempted because of ill health, temporary or permanent. The effect of the school visitation and of subsequent communication with parents appears roughly to have been that now the unvaccinated are reduced to about 20 per cent., and Dr. LOW holds that if another epidemic were to occur it would be a matter of no great difficulty to get this percentage much further reduced. As regards the total Dewsbury population of 27,000, it appears that in the two years 1903-04 the public vaccinator operated on 5755 persons and that the work done by private practitioners might bring up the total for the two years to about 8000, this being in addition to all the vaccination done in Dewsbury in previous years, so that a very large part of the population, despite the antivaccination proclivities of the town, now sits safe and secure within the folds of the despised Jennerian prophylaxis.

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[1] THE LANCET, Feb. [illegible], 1898, p. [illegible]

Dr. ASHCROFT'S report on the hospital deals first with the buildings and next with the statistical results. Various defects in the buildings are pointed out, especially in the administrative block as existing when the epidemic began, but even then the ward accommodation was such as to allow of 26 patients having the standard air space of 2000 cubic feet and the standard floor space of 144 square feet. There was thus for small-pox alone very nearly one bed per 1000 of the population, and it is well known that this is normally regarded as sufficient for all ordinary infectious diseases combined, exclusive of small-pox. At one stage, indeed, some patients were received from another district but that practice had to be given up. In Germany, with its systematic vaccination and revaccination, a 26-bed small-pox hospital would, on the Berlin basis, be sufficient for a population of about 4,000,000, but in ill-vaccinated Dewsbury it proved quite insufficient for 27,000. Consequently there was a good deal of overcrowding and in any anti vaccination apologetics for the Dewsbury epidemic it is likely that, as in Gloucester, this point will be made much of. Obviously, however, the cause of the overcrowding was not any want of reasonable accommodation for patients from a properly protected community but that the community was far from sufficiently protected, so that what would otherwise have been abundant ward accommodation proved quite insufficient. In September two new ward blocks of wood and iron, designed to hold 16 patients each, were hurriedly erected, but one of these was burned down before it was occupied. In the same month a small-pox convalescent home, with accommodation for about 40 patients in addition to the staff, was acquired by the corporation, and in October a canvas marquee was erected for nurses, but came to an untimely end in Christmas week, being blown down during a gale. These outlays and accidents are a significant illustration of what anti-vaccinating localities may have to face when visited by small-pox. As regards the hospital statistics they are of the usual character and show once more how variola differentiates between vaccinated and unvaccinated. The immunity of hospital nurses is a hard fact for opponents of vaccination to explain away, though they sometimes attempt to do so by suggesting that nurses are in some way seasoned against small-pox. But to the Dewsbury hospital there were admitted a considerable number of children and infants, not themselves suffering from the disease but because the houses in which they lived had been closed owing to their parents being stricken or because the mothers could not leave the infants at home unattended. Dr. ASHCROFT states that "these children were efficiently vaccinated and never in any single case did they show the slightest trace of small-pox and yet they were daily in contact with, and living amongst, persons suffering from the disease, often in its most severe forms and in all stages." This control experiment shows that vaccination protects even in the atmosphere of a small-pox hospital persons who are in no way seasoned against infection.

Finally, we wish to call attention to one fact which appears to contain in itself a severe rebuke to some medical men. Though in the borough of Dewsbury no vaccinated child under ten years old was attacked by small-pox, yet from some neighbouring locality a child between four and five years old, technically vaccinated, was admitted to the hospital suffering, not only from small-pox, but from fatal small-pox. Regarding this case Dr. ASHCROFT writes that there was only one small cicatrix one-sixteenth of a square inch in area and practically without foveation, and adds that "the mother states that she insisted on only having one mark made." No medical man in this country should accede to any such maternal request. He ought, as a matter of honour, to do vaccination properly or to leave it alone altogether. Before the days of the so-called "conscience clause" there might conceivably be some excuse for yielding to parental solicitation in this matter, but since 1898 it has always been open to the medical man to tell the parents that if vaccination is to be done at all it should be well done, and that if they object to its being well done they can get out of the difficulty by obtaining an exemption certificate. Accepting the facts as stated, medical pliancy in this Dewsbury case has been followed by a death from variola and has furnished to anti-vaccination agitators an opportunity for stating that a child certified to have been vaccinated successfully was attacked by, and died from, small pox within about four years of its alleged protection. Every member of the medical profession should make it his own personal duty to see that in his practice no such case shall ever occur.

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The Diagnosis of Cerebro-Spinal Meningitis.

THE Local Government Board has recently issued a memorandum to the various sanitary authorities throughout the kingdom in reference to "cerebro-spinal fever," or, as it is also termed, cerebro-spinal meningitis, the term we have usually adopted. Accompanying the memorandum is a communication which states that the Board has reason to believe that the fact that this disease has recently been somewhat extensively prevalent in Central Europe and in America has given rise in some quarters to a doubt whether cases may occur in this country. The Board announces the comforting assurance that so far as it has been able to ascertain there is no ground for such apprehension. It appears, in fact, to be probable that cerebro-spinal meningitis is at the present moment not more prevalent in this country than it has been from time to time during the last quarter of a century. Nevertheless, the Board quite rightly considers that sanitary authorities should be on the alert to detect the presence of the disease in their districts or to satisfy themselves as to its absence. To this end the Board has issued a memorandum which by dealing generally with the characteristic symptoms of the disease should prove of considerable assistance to the local sanitary service.

In a leading article in THE LANCET of April 15th of this year, p. 1010, we drew attention to some points in connexion with this disease, dwelling particularly on its etiology, bacteriology and pathology, so far as they are known, and referring also to certain forms of treatment which have been adopted. The memorandum of the Local Government Board, while touching lightly on the same ground, is more concerned with the symptoms of the disease and consequently with the diagnosis. The principal symptoms of cerebro-spinal meningitis are briefly but accurately given in the words of JOHN NETTEN RADCLIFFE, the famous epidemiologist and first assistant medical officer to the Local Government Board; but there are certain phenomena which are either not mentioned by him or upon which it seems to us not sufficient stress is laid. For instance, hyperæsthesia of the skin is called attention to, but not as a characteristic symptom. It is, however, sometimes extreme and as the disease progresses the rigidity of the muscles of the neck and back becomes more marked. Spasm of certain groups of muscles is, of course, described by RADCLIFFE, but it might have been added that spasm of the ocular muscles may also occur, producing strabismus. There may be paralysis of the muscles of the face and eye producing irregularity of the pupils, nystagmus, diplopia, and ptosis, but we need not remind our readers that squint in any febrile case of doubtful nature should always lead to suspicion of meningitis. RADCLIFFE'S definition, however, remains as a very good description of a disease which, like other specific fevers, presents varying types in different epidemics. There are certain fevers from which it is sometimes difficult to distinguish cerebro-spinal meningitis and when an epidemic of this disease is expected, undue alarm may be caused by mistakes in diagnosis. For example, in certain manifestations pneumonia, typhoid fever, typhus fever, and influenza closely simulate cerebro-spinal meningitis. In this connexion Professor STOKES'S statement that "there is no single nervous symptom which may not and does not occur independently of any appreciable lesion of the brain, nerves, or spinal cord," may well be remembered. The difficulties in differential diagnosis may be accentuated in various ways as when epidemics of typhus fever and cerebro-spinal meningitis prevail at the same time. Confusion is then more likely to occur at the beginning of the attack, for as the symptoms progress the diseases gradually exhibit characteristic differences. The pain in the head and back of the neck is more severe in cerebro-spinal meningitis than in typhus fever, nor is opisthotonos present in the latter malady. In typhus fever the spots are more constant and numerous than in cerebro-spinal meningitis, while herpes does not occur in the former. The distinction between pneumonia and cerebro-spinal meningitis is sometimes particularly difficult, as the two diseases are not unusually associated, and it may be almost impossible to say which is the primary. Should it eventually be proved that the meningococcus is the sole cause of primary cerebro-spinal meningitis and that the pneumococcus characterises only the secondary form associated with pneumonia the bacteriological examination will be of great assistance. The meningeal complications in pneumonia are more liable to invade the convexity of the brain rather than the base, whence there may arise muscular contraction and tremor but not retraction of the head. Professor KERNIG of St. Petersburg, it may be remembered, has called attention to a physical sign, which has received his name and which he believes to be a valuable aid to diagnosis in meningitis when the spinal membranes are involved. According to Professor KERNIG ability to extend the thighs when lying down but not, or only with difficulty, when sitting, is indicative of spinal meningitis, but the value of this sign has given rise to considerable discussion. Dr. FRIIS found that it occurred in 53 out of 63 cases in which spinal meningitis was present, Dr NETTER in 45 out of 50, and Dr. J. B. HERRICK in 17 out of 19.[1] There is, however, by no means unanimity amongst physicians as to the value of this test, although mention is properly made of it and of the *tache cérébrale* in the memorandum of the Local Government Board. In the same document, also, reference is made to the diagnostic value of the examination of the cerebro-spinal fluid withdrawn from the lower part of the spinal canal by lumbar puncture for the presence of the diplococcus meningitidis intracellularis of WEICHSELBAUM.

The communication of the Local Government Board to the sanitary authorities may be welcomed as a valuable aid to medical practitioners in the event of the discovery in any district of groups of cases of illness which might possibly be of the nature of cerebro-spinal meningitis. A special report to the sanitary authority by the medical officer of health of the district should then be made and it is further suggested in the communication which accompanies the memorandum that a copy of such report should at the same time be forwarded to the Board. The Board would then be prepared to render the sanitary authority such advice or assistance as, in the circumstances, might appear to be necessary. As a further precaution the sanitary authorities are notified that the memorandum has been placed on sale, so that it is procurable by all who wish to peruse it. Fortunately, no indications have yet appeared that render it probable that an epidemic will appear in this country. It is well, however, that every precaution should be taken. Cerebro-spinal meningitis is not a common disease and official instruction given in this manner is highly to be commended.

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Medical Education in South Africa.

THE interesting article by Dr. NEIL MACVICAR on the question of a medical training for natives in South Africa which appears in another portion of our issue this week, calls attention to a subject of the greatest possible interest as regards the future of our colonies in the dark continent. The native races of South Africa are as yet very little known in this country and we are but slenderly informed concerning their dispositions and capacities. The popular view of them is that they can be induced to work in the mines under conditions which would be exhausting to white men and that, as soon as they have in this manner obtained what they consider a competence, they return to their native villages, purchase a sufficient number of wives to cultivate whatever portion of ground may belong to or may be allotted to them, and henceforth remain in contented indolence for the remainder of their natural lives. This view leaves out of sight a large proportion of the native population who have already learned to regard many matters from the white man's point of view, who are laudably ambitious for themselves and for their children, and who have shown an abundant capacity to profit by education. Among all the various tribes or races which constitute the native population individuals with these characteristics are coming into prominence, or may be discovered by any who choose to look for them; and they possess, in many instances, a quite remarkable gift of fluency, not seldom rising even to high flights of eloquence. It is partly no doubt by reason of this endowment, and partly also from the extent to which the education of the country has been commenced by mission schools, that the thoughts of many of the natives have been turned towards the ministry as a profession, and that the native Christians have come to possess a considerable number of preachers of very high qualifications for their office. Their excellence, it may be assumed, has been developed rather by a sense of rivalry with Europeans than by association with, or by purposive imitation of, them; for the chief intellectual development is unquestionably found among the Basutos, from whose territory white men are practically excluded, licences to live and trade there being only obtainable with difficulty. In all districts alike, however, and among all the races of the colonies, it is abundantly plain that contact with a higher grade of civilisation has aroused the native population from a state of comparative dormancy into one of active fermentation or ambition, and that the future of the country must be greatly determined by the degree in which it may be possible to guide this ambition into appropriate channels calculated to satisfy the legitimate aspirations of the more capable and to be of solid benefit and usefulness to the great mass of the people.

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[1] American Journal of the Medical Sciences, July, 1899.

It may fairly be assumed that, in South Africa as in the United States of America, the race problem as a whole is one that should receive the best attention of statesmen. In both countries alike the dark races are the more prolific and the physically stronger. The whites possess the advantages of descent from an older civilisation—they are heirs to a higher intellectual level; but the dark races are following them upon a road which the whites have been compelled to traverse, and upon which it is not impossible that some of them may be overtaken. With these possibilities in view it is not conceivable that the natives can remain for an indefinite period in a hopelessly subordinate position, or that they will permanently consent to be hewers of wood and drawers of water for the descendants of the strangers who have occupied their country and who have possessed themselves of a large share of its wealth, but who at the same time have imparted to the original owners of the soil the secrets of European warfare and the knowledge of the value of European weapons. Physical amalgamation between the races, the absorption of one in the other or the absorption and disappearance of both in their common descendants, is a matter which appears to be impossible within any measurable limits of time; and the only peaceful solution likely to be attained must be by the contented recognition of differences, coupled with the existence of complete opportunities for individual development along any lines which either tastes or circumstances may suggest. The prevailing tendency of the more educated natives towards the pulpit is, we think, to be regretted, chiefly on account of the unfortunate alliance which has of late years sprung up, perhaps even more in South Africa than at home, between the pulpit and the platform. In a country where the preacher is too often a mere turbulent demagogue, bent upon maintaining his personal ascendancy over his flock by the simple process of giving utterance to their worst thoughts and by appealing to their worst passions, it is certainly to be regretted that this easy road to notoriety should be rendered too accessible to those who might have many temptations to abuse the opportunities which it would afford.

In these circumstances the projected arrangements spoken of by Dr. MACVICAR should be welcomed as affording not only a very ample and important outlet for native ambitions but also as likely to supply the colony with a large and eminently useful class of native practitioners, likely to exert a good influence among their own people and gradually to lead them along the path of sanitary progress. If this class can be supplied the natives of Basutoland or Bechuanaland will possibly have some advantages over ourselves. They will escape that intermediate stage between ignorance and knowledge, between civilisation and barbarism, to which we in this country are indebted for so many beliefs that die hard and for so many forms of the contempt which ignorance feels for knowledge. They will never have been taught to regard pestilence as a chastisement sent by the Christian GOD or proper sanitation as an impious interference with the Divine arrangements. They will not be likely to smile at the medical officer of their own race who traces their typhoid fever or their diphtheria to its source or utterly to disregard the protective measures which he describes to them as necessary. But while indulging in visions of this kind we must confess to have been somewhat puzzled by the limitations with which Dr. MACVICAR seems to think it desirable that the medical instruction of the natives should be surrounded. The proposal seems to be to supply, in the first instance, only half-educated men, and even to withhold the teaching necessary to inspire the licentiates, or whatever they are to be called, with reasonable confidence in themselves and their attainments. They would be something between the "assistants to an apothecary" who were formerly licensed in London and the *officiers de santé* who once existed in France. An assistant's licence is, we believe, frequently given at Apothecaries' Hall, but the duties of its holders are necessarily limited; the grade of *officier de santé* has been abolished in France, where it was found to be more frequently a cloak for harmful ignorance than a source of benefit either to the possessor or to those who consulted him. We are quite prepared to admit the possibility of imparting a modicum of medical knowledge to South African natives and of thereby doing a certain amount of good to the population, but we are none the less convinced that the formation of an inferior order of practitioners on any large scale or as in any degree an arrangement intended to be permanent would be a mistake. A chain, it is said, is no stronger than its weakest link, and the native estimate of medical skill and knowledge would be likely to rest, before long, upon the native experience of the examples with which they were most familiar. Even in this country, if we may judge from recent pronouncements concerning medical education, it is not quite certain that the whole of those who may be described as the heads of the profession fully realise the extent and depth of the scientific knowledge which may be utilised in daily practice, and we would counsel all concerned, whether in South Africa or in England, to be more afraid of teaching too little than of teaching too much. The South African may or may not have limitations of capacity which must be considered in instructing him, but, so far as we are acquainted with the evidence, these limitations have not yet become apparent.

Annotations.

"Ne quid nimis."

SANITARY EFFORT IN THE ARMY.

FOR his presidential address to the section on Naval and Military Hygiene at the London Congress of the Royal Institute of Public Health (held from July 19th to 25th) the Professor of Hygiene in the Royal Army Medical College (Lieutenant-Colonel R. H. Firth, R.A.M.C.) took for his subject "Sanitary Effort in the Army: What has it done and what has it failed to do?" In focussing attention upon this important subject Colonel Firth discusses the answers to three main questions—viz: (1) What has sanitary effort done for the army in the past? (2) What is sanitary effort doing for the army in the present? and (3) What is sanitary effort going to do for the army *in the future*? Reviewing the medical statistics, constructed from data during periods of peace and for both earlier and recent wars, as a means whereby to answer the first question, Colonel Firth shows that the figures indicate marked improvement by way of diminished sickness in peace and of lessened death rates; but that the degree of preventable disease-incidence on field service is still enormous, exacting a heavy tax on military efficiency—much greater than what we should experience had the effects of sanitary effort in war time been as proportionately good as they appear to be in peace. Colonel Firth offers a simple explanation of this. He reminds us that during the last 50 years a sound knowledge regarding the laws of health has been diffused among the general population of this country and wishes the fact to be realised (while not detracting from the good work in this direction done by certain officers of the medical corps) that many of the changes for the better, such as the lessened incidence of disease and the lessened mortality-rates among soldiers in our home and other garrisons during peace time, are explicable as the result of forces at work throughout the whole population and the whole land. Further, he asks whether such a thing as sanitation, using the word as meaning organised effort in the sense in which we see it around us in civil life, exists in the army now in these days of peace, and he reminds us that if organised effort is lacking in the army it is from no failure on the part of the medical service asking for its inception. As, in his opinion, the improvements which have taken place in the health of the army largely depend upon the excellence of the organised civil sanitary effort existing in the immediate neighbourhood of the places where the troops are located, it is easy to understand how it is that the soldier and the army at large only *realise the penalties attaching to sanitary unpreparedness* when brought face to face with practical problems either in the field or on some foreign shore where the facilities of home life are wanting. If organised sanitary effort is neglected in the army during peace can we expect it to be effective during war, for sanitary effort, like every other act of the soldier, needs to be practised in peace in order to be effectively executed in war? In considering the second question, Colonel Firth says that the answer resolves itself practically into a statement of what the Royal Army Medical Corps is doing for the study and prevention of disease. He believes that the corps is doing its utmost under present conditions to cope with the problems which confront it, and that at no time in its history has the corps been more sensible of its responsibilities or more animated with a desire to fulfil them; but he suggests *pertinently that the army medical officer has not a free hand* in regard to sanitary effort. What is now being done, in his opinion, touches merely the fringe of the question. His main reasons for thinking so are three: (*a*) there is no evidence of coördination of sanitary effort; (*b*) there is no evidence of the organisation and training of men during peace to cope with the two great problems on field service—namely, how effectively to supply soldiers with a safe water and how successfully to remove and render relatively harmless the effete material from men and animals; and (*c*) there is no evidence as to whom to hold responsible for failure in sanitation. In regard to the third question, What is sanitary effort going to do for the army in the future? Colonel Firth, while disclaiming any ability to prophesy, explains what he thinks ought to be done. First, as a matter of administrative efficiency he considers that the preventive side of medicine in its practical working needs to be considered separately from the curative. He proposes that a sanitary bureau should be established in the War Office as a section of the office of the Director-General of the Army Medical Service. This should be controlled by an officer thoroughly conversant with the whole theory and practice of preventive medicine, and he should administer and be responsible for the whole sanitary effort and organisation of the army, being endowed with the requisite powers. To this officer's bureau should come all statistical returns and all reports of a sanitary nature or dealing with disease-incidence throughout the army; for their tabulation and publication he would be responsible. His agents throughout the garrisons of the empire would be the sanitary officers of commands, divisions, or districts, whose work he would coördinate and control both by correspondence and personal inspection. Working under the sanitary officers, who would be staff officers in the fullest sense of the term, would be the various officers in medical charge of units, while in the case of large garrisons or commands one or more quarter-masters or staff-sergeants would be specially qualified as inspectors. The sanitary officer of a garrison should also be placed, Colonel Firth considers, in direct control of all conservancy methods, and in the four large commands the local sanitary officer should be responsible for the training of men belonging to the Royal Army Medical Corps in all methods of water-supply and purification suitable for field service. Such are Colonel Firth's views as to the lines on which sanitary effort in the army must be evolved. They secure coördination of effort and bring into operation an organisation susceptible of a direct chain of responsibility from above down. Colonel Firth believes that so far as the future is concerned, unless there is a complete change from the present methods, the outcome of the sanitary efforts in the army will be no better than they have been in the past. Will the authorities heed Colonel

Firth? He speaks clearly and he knows his subject. But similar things have been said before to deaf ears.

THOMAS JOHN BARNARDO: THE FRIEND OF POOR CHILDREN.

THE care of the waif and of the homeless is not only a duty imposed by every moral law upon those who have not failed in the battle of life, but is from the lower point of view of expediency the duty of every State. Thomas John Barnardo, F.R.C.S. Edin., known to the English-speaking world as Dr. Barnardo, who died on Tuesday night last at the comparatively early age of 60, had devoted 40 years of his life to the care of those who had no one else to care for them, and in doing so showed himself not only one of the most practical Christians of his time but one of the most valued citizens of our empire. In 1864, when he was studying medicine at the London Hospital (we believe in order to take up the career of a missionary to China), he occupied a part of his leisure time in teaching in a ragged school. One night one of his scholars seemed unwilling to go home and on being questioned said that he had no home to go to. Young Barnardo inquired into the truth of the story and found for himself the deplorable condition in which many London lads live. He almost immediately started a scheme for rescuing and boarding out waifs and from this small beginning sprang the great institution known as Dr. Barnardo's Homes. How successful these homes have been all the world knows and it was owing to the faith and energy of the founder that they were so—faith at the same time in his religion and in the good sense of his cause. The intense sympathy which he brought into the work of rescuing waifs, training them and placing them in advantageous circumstances, made all his "children," as he called them, feel that in him they had a devoted friend. His work was hard, for a long time it was unappreciated by the public, and in some quarters he had to undergo direct opposition, but his devotion and energy brought him the victory and his trials were well repaid by the results. He is stated to have been instrumental in rescuing and placing out in life over 55,000 children, and there are very few persons in the world who can claim to have made 55,000 personal friends. Although Thomas Barnardo is dead his work remains and will still be a power for good, for he has placed it upon a secure basis.

THE CAUSE OF DEATH.

AN inquest was held recently at the Chelsea coroner's court touching the death of Henry Baker, aged 53 years, the circumstances of which are of medical interest. Until a few months prior to his death the deceased was employed as a clerk at the Board of Education Offices, Whitehall. From the evidence it appears that for years he had been a confirmed dipsomaniac and this failing had undoubtedly led to his physical and social downfall and mental degradation. One evening, having placed *3d.* into the slot of the gas meter, he retired to his bedroom, taking with him a bottle of gum and some hot water. On the following day, at five in the afternoon, his wife forcibly entered the room and found him lying dead on the bed, on his right side with his hand under his cheek. He appeared as if asleep. The burner had been detached from the gas bracket; the gas was turned on and the room smelt strongly of gas. The fireplace and the crevices of the door and window had been pasted over with paper. The case is interesting from a forensic standpoint. On the face of it it seemed highly probable that it was one of determined suicide by gas poisoning and the jury returned a verdict to that effect. There was the strongest possible motive for the deed and the means had been carefully planned. The position of the body was that of repose and there was no evidence of struggling. The medical man—Dr. John Reid—who was called to see the body found froth issuing from the mouth and cadaveric lividity in the dependent parts. But there was entire absence of the cherry-red hue indicative of carbon monoxide poisoning so common in coal-gas suffocation. This fact led Dr. Reid to conclude that death was the result of asphyxia from the body lying on the face whilst the deceased was in a drunken stupor. Against this theory was the testimony of the widow that the body was on the right side, with the hand under the cheek. We are not in a position to state the composition of the gas supplied by the company. In most instances illuminating gas contains a large quantity of carbon monoxide and when death occurs from its inhalation it is the last-mentioned constituent that is responsible for the issue. It was suggested at the inquest that the quantity of gas which could possibly escape from the turned-on jet would not be sufficient to cause death but we are not disposed quite to agree with this view if the supply, as deposed to by Mrs. Baker, would last for nine hours' burning, especially as the obvious apertures for ventilation had been sealed by the deceased who certainly intended and attempted to kill himself in the manner suggested. It may be that the death was the result of the combined causes—simple asphyxia and suffocation from inhalation of poisonous gas. As Dr. Reid demurred to the agency of the latter on perfectly sound scientific grounds, and as one of the jurymen expressed the opinion that a post-mortem examination was desirable, it is to be regretted that the coroner did not see his way to order a necropsy. A spectroscopic examination of the blood would at once have decided the doubtful point, for so tenaciously does carbon monoxide hold to the hæmoglobin that its presence may be detected months after death. If the report of the proceedings at the inquest is correct in the *Chelsea News* we take the strongest exception to the coroner's alleged remark: "You have no right to make that statement," as a comment on Dr. Reid's expressed view that the deceased "didn't die from gas poisoning." Whether Dr Reid was right or wrong as regards the fact it was clearly within his province to form and to express his conclusion as to the possible, probable, or certain cause of death.

SANITARY CONDITION OF THE LEWS.

A REPORT just issued by the Local Government Board for Scotland, on the sanitary condition of the Lews, tends to emphasise the unhealthful mode of living in certain rural parts of Great Britain and to explain perhaps to some extent the reasons for the untoward prevalence of insanity in sparsely populated neighbourhoods. The report dealing with the sanitary condition of the Lews reveals the existence of a deplorable state of affairs. The Scotch crofters have been long notorious for their neglect of all that appertains to a civilised life and we now learn that in the Lews the absence of sanitary measures is as marked as among the Esquimaux or in the poorest districts of Russia. The manner of living in the Lews is clearly described by Dr. Frederick Dittmar, medical inspector, and Mr. Alexander B. Millar, general superintendent of poor and inspecting officer under the Public Health Act, in a very outspoken document. The walls of a typical crofter's cabin, we hear, are usually composed of loose stones with earth between. They are five or six feet thick and sometimes formed wholly of turf. The roof is so constructed that there is a space of about two feet between the thatch and the outside walls, which allows of thorough percolation of the house walls with moisture. The hut may consist of three parts, under one roof, a living room in the centre, and on either side of it a sleeping room and a byre. The living room is small and meagrely furnished, with a peat fire in the centre of the clay floor, the smoke from which finds its way out by a hole in the roof or through the thatch and door. Light is admitted by one or two very small windows. The sleeping apartment is small, badly lighted, and not weather-tight. On one side of the living room and only separated from it by a wooden partition six or seven feet in height is the byre. The floor of this cattle-shed is thickly covered with manure, the accumulation frequently rising to a height of three or four feet above the level of the living room, and in this muck heap there may stand one or two cows and occasionally a horse and some sheep. Fowls nest in baskets hung against the walls. On the floor of the byre human excreta are deposited with the dung of the animals, there being no other form of midden. The ground outside the houses is sodden with water and drainage from the byres, while the drainage channels in front of the houses are usually choked. Some of the dwellings visited were in a by far worse sanitary condition than the typical one described above, one or two being characterised by the visitors as "not fit for a pig"—a phrase which appears to us to fitly sum up the typical Lews home. "Almost every house in the district," say the writers, "with the exception of the few stone and lime ones is uninhabitable and a disgrace to our civilisation." The water-supply is thus depicted: "The water-supplies, with few exceptions, in the whole of the Lews and the Long Island consist of shallow dip wells liable to all kinds of surface pollution, and when near houses often situated in the most low-lying and boggy ground. They are almost universally unprotected and animals have free access to them. ...... These dip wells only contain water during the winter months or in wet weather. In dry summer weather the people are obliged to go long distances, in many cases to the nearest mountain stream or loch." As may be well imagined, diseases are prevalent and deadly among people living in such conditions. Especially are the young children and those women who are compelled to spend a great part of their time indoors injuriously affected. Pulmonary tuberculosis is common and deadly in its action, while the conditions of life are not only extremely inimical to health but are antagonistic to decency and morality. The remedy recommended by the framers of the report is that the Local Government Board for Scotland should call on the local authority to carry out the provisions of the Public Health Act, these provisions not having been effectively carried out as yet. That steps should be promptly taken to better the conditions of life of the Lews crofters must be obvious to everyone and after this terrible report inaction will be impossible.

MEDICAL MEN AND MEDICAL TEACHING IN THE PHILIPPINE ISLANDS.

THE second session of the Philippine Islands Medical Association has been held recently and many interesting facts concerning medicine, sanitation, and medical teaching in these islands were made known. It would appear that there is a lamentable dearth of medical men, the ratio of physicians to the population in the islands generally being 1 to 21,209, and the ratio to population in Manila being 1 to 1013. Not only is there so great a scarcity of medical men but it is stated that during the past year the death-rate among physicians was greater than the supply. Moreover, the hospitals are antiquated, defective in construction and equipment, and in all respects inadequate to the needs of the population, while the facilities for medical teaching are woefully bad. At the meeting of the association which has just taken place measures for improving the medical service were discussed and a committee was appointed to consider the advisability of establishing a University of the Philippines, to consist of an undergraduate school and a college of applied sciences, engineering, medicine, law, languages, and philosophy. The United States are rising to the responsibilities which tropical possessions entail. They have not held their far eastern territories sufficiently long fully to grasp, perhaps, the true nature of the task before them. They are, so to speak, new to the work, and although their energy and capacity for overcoming difficulties are proverbial, they have yet much to learn with regard to the successful government and management of tropical lands. It goes without saying that good sanitation is the key of the situation from the standpoint of health. An instructive object-lesson on this phase of the matter has been afforded recently in the case of the Isthmus of Panama, where the construction of the Canal is now seen to be mainly a matter of public health. The Philippine Islands under Spanish rule were neglected in every way and especially little heed was paid to the solution of health problems. The consequence is that the United States public health and medical services have to take in hand *ab initio* the sanitary regeneration of their new possessions. In the towns of Cuba this object was successfully accomplished and there is no reason why similar results should not be attained in Manila and the vicinity. The establishment of a University of the Philippines, the reconstruction of the hospitals upon a modern basis, and the measures taken for relieving the scarcity of physicians and for improving the present service are all steps in the right direction, which will in the course of time vastly improve the conditions of life in the Philippine Islands.

ANGINA PECTORIS AND ALLIED CONDITIONS.

IN THE LANCET of Sept. 16th, p. 809, we published a lecture by Dr. Thomas Oliver on Angina Pectoris and Allied Conditions. He describes the varieties of angina pectoris which have been recognised and gives an interesting description of the phenomena which charactise the condition known as "pseudo-angina." He says that it has been found necessary to coin a word to include a group of cases in which, while præcordial pain and a varying sense of distress are prominent features, yet experience shows that they cannot be regarded as true angina pectoris. The prefix "pseudo" before a medical term we contend ought to be avoided if possible. Many conditions have been described which closely simulate well-known diseases and yet differ in some essential points. For instance, pseudo-tuberculosis, pseudo-tetanus, pseudo-fever, pseudo-tabes, and many other morbid affections have received notice. In some instances it has been found possible to change this unsatisfactory nosology and to substitute a more exact term. Sir Richard Douglas Powell, writing in Professor Clifford Allbutt's "System of Medicine" (vol. vi, p. 28) adopts the term "angina pectoris vasomotoria," mentioning as a synonym "pseudangina." This we consider preferable. Dr. Oliver does not discuss the advisability of retaining the expression "pseudo-angina." He remarks that the word has grown with current usage and conveys a meaning which is well understood, although there may be a difficulty in defining it. All practitioners have probably seen several instances of this condition. The symptoms are similar to those which occur in true angina pectoris but, as a rule, are not so severe and the sensation of fear is not so marked. Women are more liable to the affection than men. Dr. Oliver also draws attention to a vaso-motor type of angina described by the late Professor Nothnagel of Vienna in which palpitation, præcordial pain, a feeling of faintness, coldness of the extremities, lividity, and perspiration are the main features. As a rule the prognosis here is favourable, much more so, of course, than in the case of true angina pectoris. Nevertheless, the symptoms must be carefully scrutinised and careful treatment, especially of a preventive character, duly adopted. Fatal cases do occur, and after death no characteristic lesions are found in the heart and vessels. Professor Huchard recorded a fatal case in which no other reason for death could be found than a functional failure of the heart from excess of tobacco. Dr. Oliver's contribution is a very interesting one and we commend to our readers a careful perusal of his remarks. With reference to the obvious objections to such a word as pseudo-angina we may notice that in this issue we publish an article on paratyphoid fever by Lieutenant F. P. Mackie, I.M.S., who concludes a very interesting account of this condition by observing that the unity of typhoid fever can no longer be upheld. If, then, there are diseases which produce similar symptoms but are caused by different micro-organisms and exhibit different morbid processes we contend that distinct names should be given to them and that the use of the prefixes "pseudo" or "para" can only give rise to confusion. In an annotation in The Lancet of March 4th, 1905, p. 585, we made similar remarks on the word "paratyphoid," urging that this term was to be regretted, but we fear that it has now passed definitely into medical nomenclature.

MEDICAL SCIENCE IN TURKEY UNDER THE REIGN OF THE SULTAN ABDUL-HAMID II.

"Much is said and written in disfavour of the present Padishah and Khalif Abdul-Hamid II. The British press—one section, of course, more than another—has been apparently eager in the direction of throwing upon him all sorts of disparagement, blame and accusation. Mr. Gladstone's catchword of 'Great Assassin' has been repeated by those insufficiently informed of the languages, customs, and traditions of Turkey and grave injustice has been done. As a matter of truth Abdul-Hamid II. is one of the best Sultans that ever wielded the Ottoman sceptre. The fact that he has been reigning over his people for 30 years under the most adverse conditions is in itself a proof of his unusual abilities as a ruler and statesman." Thus an enthusiastic medical correspondent resident in the Sultan's domains, and as far as the science of medicine goes the facts support his words. The Sultan has always been eager to let his nation benefit as much as it was possible by the latest discoveries of science. A great number of charitable institutions have been created in all parts of the Ottoman empire owing to his initiative. Fountains of cool well-water, which are such a boon in a distinctly warm country, have been erected in many places at the expense of his private purse. In Constantinople itself every district and quarter is in possession of such a fountain which supplies excellent drinkable water absolutely free of any charge. The Turkish capital has especially benefited in many directions during Abdul-Hamid's reign. Asylums, lazarets, and hospitals of various descriptions, receiving the personal endowments of the Padishah, keep their doors open perfectly gratis to sufferers of every nation and denomination. In this connexion it is particularly interesting to mention that he displays paternal interest in, and large-hearted, generous sympathy for, afflicted children. His Hamidié hospital, a first-rate establishment equipped with all the requirements of modern medical science, is a just source of satisfaction and pride to himself as well as to his faithful Osmanlis. All the best medical men of the capital are engaged in the service of this hospital. They are assisted by a staff of excellently trained German nurses. The large leper hospital on the Asiatic side of the Bosphorus enjoys a specially active attention on the part of the Sultan. The place of refuge for old and poor and the asylum for the insane have been created and are sustained by his large contributions. It is also due to his initiative that the metropolis possesses a medical school with a highly efficient staff of professors an lecturers. Before he came to the throne there was not a single medical institution in the whole of the Ottoman empire, not a single sanitary establishment. Quacks of the most unscrupulous conduct had their unlimited sway. Under his reign sanitary councils have been instituted, laboratories for the chemical analysis of food-stuffs and institutes for hydrophobia and bacteriological research have been created. The Sultan evidently takes a vivid interest in every medical congress, as excellent representatives are always present from Turkey at these meetings, who have full power to take the initiative, on their return, of introducing necessary sanitary reforms. Well-organised lazarets are now to be found in different seaports of the empire. Large hospitals for the treatment of venereal and syphilitic diseases have been founded in the vilayet of Castamoni and in other places. Lately a very energetic movement has been set agoing, also upon the Sultan's initiative, to create in Constantinople an establishment for the deaf and dumb. We understand that the representatives of Turkey in foreign countries have been instructed to gather the necessary information and material as to the manner in which such establishments are conducted abroad. These things sufficiently prove that the popular estimate of the Sultan of Turkey, whatever his defaults as a ruler, is not justified.

NON-FATAL EXTERNAL RUPTURE OF AN AORTIC ANEURYSM.

The fact that rupture of an aortic aneurysm is not always immediately fatal has been recently shown in our columns. Dr. C. H. Melland reported a remarkable illustration of this[1] and referred to the few other cases previously recorded. Subsequently in an annotation[2] we described an American case of repeated copious hæmoptysis from an aortic aneurysm. In these cases of repeated hæmorrhage the rupture usually takes place internally into the œsophagus, air passages, or pleural cavity. Cases in which the rupture of an aneurysm on the external surface of the body has not been immediately fatal are still rarer. In the *Albany Medical Annals* for September Dr. H. C. Gordinier has reported the following case. A man, aged 50 years, suffering from aortic aneurysm, was seen on Oct. 12th, 1904. A pulsating tumour occupied the upper half of the sternal region and extended into each infra-clavicular and supra-clavicular region. The sac appeared to be covered only by skin which was dark purple and showed two or three excoriations. The tumour was elevated six centimetres above the level of the surrounding chest wall. A rough systolic murmur was heard over it and was conducted into the vessels of the neck. The apex beat was in the sixth interspace three centimetres outside the nipple line. On Oct. 20th the aneurysm ruptured externally with profuse hæmorrhage saturating the whole bedding. The patient became unconscious and pulseless. After the subcutaneous injection of saline solution he recovered consciousness and the pulse became perceptible. Two sutures were passed round the opening and the hæmorrhage was arrested. On the 25th the patient was much improved and the pulse was better but intermittent. On the night of Oct. 26th a less severe hæmorrhage than the former one occurred and continued until 8.30 on the following morning when death took place. The necropsy showed an aneurysm of the ascending portion of the arch of the aorta which was filled with firm layers of fibrin. The ribs and sternum were eroded and the clavicles were displaced forwards. Only two other cases of external non-fatal rupture of an aortic aneurysm appear to have been recorded. The late Professor William Stokes in his work on "The Heart and Aorta" refers to the case of a man with an aneurysm which opened externally above the right second rib and for more than a year had at intervals discharged blood, sometimes so copiously that the flow was arrested with difficulty. Three weeks after the last hæmorrhage the aneurysm diminished and he left hospital declaring himself to be quite well. The late Dr. George Balfour in his "Clinical Lectures on Diseases of the Heart and Aorta" refers to a case of aneurysm of the aortic arch and innominate artery which ruptured opposite the cartilage of the third rib. A stream of blood somewhat thicker than a crow quill issued. The patient, nowise alarmed, held a bowl to receive the contents of what he supposed to be a bloody boil and even squeezed it with his chin to empty it faster. After he had lost a quart of blood he fainted and the bleeding ceased. Four months later he died from typhus fever, the hæmorrhage never having recurred.

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[1] The Lancet, Nov. 19th, 1904, p. 1414.

[2] The Lancet, June 3rd, 1905, p. 1523.

HOW DISEASE MAY BE SPREAD.

A case which was recently heard at the North London police-court demonstrates how disease may be spread by direct non-compliance with medical instructions. A young married man appeared before the magistrate to answer a summons taken out at the instance of the Islington borough council charging him with wilfully walking about and mixing with the general public whilst suffering from diphtheria after being informed by a medical man of the nature of the disease. The defendant suffered from a sore-throat and went to the Great Northern Central Hospital. He was seen by the house physician who told him that he was suffering from diphtheria and must be at once isolated and sent to the fever hospital. The patient, however, left the hospital and went home, promising to return in an hour, but he did not do so. The house physician had no power to detain him, and as he did not come back very properly reported the matter to the local sanitary authority. The diagnosis was verified by the culture test. Three days subsequently the patient went to a medical practitioner who at that stage of the disease failed to recognise it as diphtheria and told the man that he might go on with his work. The patient, however, did not mention the fact that a diagnosis of diphtheria had been previously made at the hospital. The magistrate, after severely admonishing the defendant, very properly fined him the full penalty of £5. The hospital authorities were placed in a difficult position. There is no law by which the patient could be detained against his will. It is, however, a question that might well be considered whether the power should not be given to the medical officers of public institutions to restrain patients suffering from infectious diseases from rendering themselves a public danger. The measures which would be necessary to interfere with "the liberty of the subject" would, of course, have to be laid down carefully. Undoubtedly considerable danger is likely to arise by individuals directly acting against medical advice when informed that they are the subjects of diseases which are included amongst those of which notification has to be given.

FORMIC ACID IN THE TREATMENT OF TREMOR.

M. E. Clément deals with the action of formic acid in the treatment of tremor in a note which was read before the Académie des Sciences of Paris and which was published in the *Comptes Rendus*, 1905, No. 12, p. 1193. The drug was administered with success in two severe cases of tremor, one a woman aged 65 years, and the other a man aged 72 years. The patients had suffered from tremor for ten and 18 years respectively. In each case the tremors were not due to senility as the chin, lips, and head were unaffected. The tremors disappeared during rest or at least were very faint. Formic acid was administered in doses of four grammes of the normal solution, with results which were both rapid and surprising. In two days the tremors were modified to such an extent that the patients were able to drink from a glass with *one hand without spilling the liquid*, whereas previously they had with difficulty drunk from a glass supported by both hands. Each day improvement was made though the tremors did not entirely disappear, which was not a matter for surprise seeing that in each case they were of long standing. M. Clément *considers that no other drug* has such a rapid and definite action for the purpose as formic acid. Hyoscyamine, hitherto considered the best remedy, does not, he states, compare with formic acid, and here is reason to hope that the remedy may also prove useful in certain forms of chorea.

THE EARTHQUAKE IN CALABRIA.

"Bread and shelter," these words comprise the most clamant of the many appeals from Calabria, whose population, famished, houseless, enfeebled physically and morally, looks idly on in a state of semi-stupefaction as the relief parties, mainly soldiers and servants of the Red Cross, pass from ruined village to dilapidated township on their humane mission. Till the poor sufferers are adequately fed, clothed, and accommodated under a roof *it is in vain to expect from* them any active or effective coöperation with the well-meaning but not always well-inspired endeavours of their benefactors, official and amateur. Nor is there an hour to lose, particularly in the matter of providing shelter. The *torrential* rainfall characteristic of commencing autumn in Italy is expected from one day to another, indeed there are indications *that it has already started, and what the con*dition of the half-starved, semi-nude, wholly demoralised population bivouacking under the "random bield" *of* hedgerow or cavern may become can be only too painfully anticipated. The danger as well as insufficiency of the *shifts to* which the sufferers are put to may be realised from one incident out of many. A countryman, by way of improvising a dormitory for himself, placed a sort of shed propped on wooden supports against the still standing wall of his ruined house. One of the recurrent seismic shocks levelled both wall and shed with the ground, burying the sleeper under the débris. Rescued by a relief party, he was so contused and maimed externally and internally that after lingering for three days he died (as the reporter states) in "dolori orribili." Near one of the severely visited townships the King in his philanthropic circuit was met by the local clergy, headed by the bishop, who appealed to his Majesty in aid of the churches, many of them a mass of rubbish. "First shelter, then churches" (*Prima tetti, poi chiese*), was the King's curt rejoinder, which sums up the most urgent need of the hour. The Red Cross, *from its centre in Rome* to its branches in the chief provincial towns, is active in forwarding tents and supplies of food and clothing, and already many hundreds of the population are enabled to spend the night under shelter after the primary wants of nature in sustenance and raiment have been satisfied. As a provisional step this is invaluable—giving time, before the rainy season has set in definitely, for the engineers and soldiery to demolish the tottering and dangerous buildings preparatory to utilising the material in the erection of new tenements on safer ground. *Pari passu* with this work of demolition, the dead bodies are being removed and buried where cremation is impracticable, and by this means the intolerable foetor now all too perceptible in the more heavily visited districts is disappearing, to the manifest relief of the population and to the minimising of the danger from disease due to the infected atmosphere. The first panic over and the febrile, not always well directed, energy of the relief parties replaced by maturer and more systematic measures, the whole of the relief organisation is now working steadily, harmoniously, and effectively—thanks, in the first instance, to the reassuring and inspiriting presence, or rather ubiquity, of the King, and "next" to the experienced action of the regimental and Red Cross relief parties—all coöperating on a well-considered plan and all vying with each other to anticipate, by adequate provisions, the advent of that continued rainfall which would prove only less disastrous than the earthquake itself to a population predisposed to well-nigh every form of ailment, bodily and mental. No disaster, however great, is altogether without its salutary sequelæ, and one effect of the recent earthquake has already been to send a thrill of common sentiment through the whole Italian kingdom, to extinguish provincial and even parochial jealousies, and to prove to the people themselves not less than to the outside world that the "unity" of Italy is indeed an accomplished fact. 22 years ago, when the great thermopathic resort of Casamicciola, in the island of Ischia, was the scene of a similar visitation, the measures of relief were rendered all but useless from the favouritism and the partiality displayed by those in charge of them. So much so, that on the morrow of this last earthquake in South Italy no less a man than Professor Antonino Anile, lecturer on anatomy in the University of Naples, thought it right, through the *Giornale d'Italia*, to warn the charitable public, domestic and foreign, of the possible malversation of the funds subscribed to mitigate the disaster. The events of the last week in Calabria and throughout Italy have happily rendered his warning unnecessary. The "sense of citizenship"—a product of tardy growth in Italy—has developed marvellously throughout the kingdom in the last two decades. And now, to the admiration of the civilised world and to the moral rehabilitation of Italians themselves, all classes, high and humble, official and non-official, are coöperating in the well-organised work of Christian charity—an exhibition not only of true patriotism but of collective philanthropy fraught with the best omen for the youngest (if also the oldest) of the Latin powers.

THE HYGIENE OF THE BARBER.

WE mentioned in an annotation in THE LANCET of Dec. 17th last that we had received a copy of the rules which it was intended to introduce in London for the more hygienic management of hairdressers' establishments. These rules were drawn up by the Incorporated Guild of Hairdressers, Wigmakers, and Perfumers, in conjunction with the medical officer of health of the City of London. Previously to that, in September, 1904, we discussed the subject in a leading article. We have now received from the local authority under the Public Health Act, 1903, for the city of Launceston, a bill measuring approximately 15 inches by 9 inches, and dated August 1st, 1905, setting forth the instructions "issued by the local authority for the said city, for the better hygienic management of hairdressing saloons." This bill, which is intended to be suspended permanently in a conspicuous place in the saloon (which intimation is printed on the top of the bill in red ink), notifies that the occupier of every room used for the purpose of the trade of a hairdresser should conform with the following requirements:—(1) Hair should be swept up regularly and floors washed twice a week; (2) hot and cold water and efficient drainage should be maintained and the hands of the operator washed before attending each customer; (3) shelves should be impervious; (4) cupboards should have clear glass fronts; (5) no cretonne, tapestry, or plush should be used; (6) head-rests should be protected by a separate paper or linen serviette for each customer; (7) clean, washable overalls (not black) without pockets should be worn by operators; (8) soap should be in powder, wafer, or tablet form; (9) razors should be wiped on paper; (10) separate wool or serviette should be used instead of sponges; (11) alum or magnesia should be kept in a dredger; (12) mugs and shaving brushes should be cleansed, each operation; (13) no one with obvious skin di shall be shaved unless the hairdresser is satisfied tha disease is not contagious; (14) sponges, powder magnesia blocks, astringent sticks, corks in bottle revolving brushes should not be used; (15) scissors, br and combs, hair clippers, and razors should be stripp grease by means of ammonia or soda and cleansed in antiseptic solution; (16) the antiseptics recommende cyllin, izal, and chinosol; and (17) hairdressers shall in barbers. It will be seen that the words "should be used in nearly all of the requirements instead of " be" or "must be," but the advice given is so sensible compulsion was probably felt to be unnecessary.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS IN PARIS.

THERE are already 1800 members inscribed as de of participating in this Congress. They come fro different countries, but we understand that of the far, only 45 are British. This is very regrettable sidering the importance of the gathering to med generally and the particular interest which all B sanitarians should take in the prevention of tub losis. M. Loubet, the President of the Republic, entertain 120 of the leading delegates to dinner and receive all the members of the Congress later in the eve at the Palace of the Elysée. This will probably b Oct. 7th—that is, the last day of the Congress. On the day of the Congress, Oct. 2nd, the President of the Cong Dr. Hérard, will entertain the members at the Hôtel tinental. On the next day there may be a reception at Ministry of the Interior and the Thursday will be devot numerous excursions. Among these there will be a vis a new sanatorium at Montigny en Ostrevent, near D which will then be inaugurated by the President of Republic. On the same day other excursions will pro to the Sanatorium of Bligny for adults and of Orme Villiers for children. On the Friday there will be a banquet when it is calculated at least 900 persons sit together at table and the daily newspaper *Le Mat* organising a fête at the Châtelet Theatre in honour of members of the Congress. There will consequently b lack of diversions during the week and, to judge from reports which are to serve as the bases of discussion, s useful work should result from this international gathe We would urge on our countrymen the necessity that Bri medicine should be adequately represented.

A METHOD OF PROTECTION AGAINST THE ROENTGEN RAYS.

THE numerous devices in use for the purpose of protect the skin from the action of the Roentgen rays fall into groups—viz., those consisting of opaque envelopes placed the neighbourhood of the centre of emission of the rays screens designed to cover the body of the operator, includ spectacles, gloves, and aprons. But each class of protec possesses certain disadvantages. The principal defect of localisers which comprise the first class is that a modifi tion of the electric field around the Crookes tube is set which tends to render the apparatus defective in workin Protective garments, on the other hand, hinder the mo ments of the operator. M. J. Bergomé of Bordeaux h described a method free from these inconveniences, whi has been tried for six months in the medical department the University of Bordeaux and in various hospitals. Th method consists in so arranging matters that the operato are above a horizontal plane passing through the an kathode, while the patient alone is below that plane. Th operator is thus able without risk to handle the sensiti screen quite near the tube in an atmosphere free from the x rays. The bed of the patient is placed near the floor, so that the horizontal plane passing through the antikathode does not usually reach above the knees of the operator, nor ever more than two-thirds up the thigh of a man of average height. This plan enables the operator to exercise complete supervision, to determine readily the quality of the emitted rays, and to dispense with screens and masks. Since its adoption no case of radio-dermatitis has been discovered among the operators and the lesions of those already affected show a tendency to improve.

BRITISH HOSPITAL WORK IN PERSIA.

Major P. Molesworth Sykes, H.B.M.'s Consul General and Agent of the Government of India in Khorassan, in an official report, dated August 5th last, to the Foreign Office observes, *inter alia*, that the Consulate Hospital at Meshed, although it is little more than an out-patient dispensary and very imperfectly suited to the carrying on of general medical and surgical practice, continues to do useful work and to make its influence felt far and wide. During the Moharram riots it was understood that the British consulate-general was held inviolable by the people on account of the great boon conferred on the population of Khorassan by the work of this hospital. During the past year the total number of patients treated was 48,017, of whom only 52 were in-patients. The number of major operations performed during the year was 41. Sick and injured are brought from even distant Herat for treatment and as the poor are fed at the expense of the hospital the in-patient department is beginning to be popular. A considerable number of patients, mostly of the wealthier classes, have been attended in their own homes, the question of hospital abuse not having yet arisen in Khorassan, and all patients are supplied with drugs from the dispensary free of charge. The space available for the reception of in-patients and for the performance of surgical operations is very limited in the hospital and until a short time ago such rooms as there are were little more than black hovels. In February of this year, however, the Government of India sanctioned a sum of 5000 rupees for the re-equipment and furnishing of the hospital and since then a further sum has been applied for to repair the buildings completely and carry out needful alterations. When finished there will be an operating theatre, an ophthalmoscopic dark room, and a room for the surgical dressing of out-patients, so that the hospital is now in a fair way to become suitably equipped for work of all kinds.

FATAL HEREDITARY ANGIO-NEUROTIC ŒDEMA OF THE GLOTTIS.

IN an annotation which appeared in THE LANCET of Dec. 24th, 1904, p 1802, we described a remarkable case of angio-neurotic œdema in which the mucous membranes were involved and a piece of the mucous membrane of the stomach was removed during gastric lavage and found to be œdematous. This appears to be the only recorded case in which the existence of œdema of the mucous membrane of the stomach was demonstrated. The sequel of the case is given in the *American Journal of the Medical Sciences* for September by Dr. R. S. Morris and is of considerable interest. The patient first came under observation on Oct. 23rd, 1904, at the age of 21 years, complaining of swelling of the hands, legs, and larynx, and of gastric troubles. The symptoms began at the age of 12 years. At the age of 17 years tracheotomy had to be performed for œdema of the glottis. In April, 1903, the operation had to be repeated. On July 13th intubation was attempted without success for the same cause and a trocar was thrust into the trachea. On July 15th, 1904, inspiration was so difficult that the patient became cyanosed. A hypodermic injection of morphine was given and relief was gradually afforded in about three hours. Swellings very frequently occurred on other parts of the body, especially after blows, and the frequency of these increased in the last few months of life. On Jan. 3rd, 1905, the patient was apparently well when he retired for the night. About midnight his parents were aroused by an unusual noise and on going to his room found him propped up in bed with the front of his night-shirt covered with blood. Death occurred before medical assistance could be obtained. Permission was given only for examination of the respiratory tract. The mouth and pharynx were filled with blood. The larynx showed intense œdema which involved the epiglottis, the aryteno-epiglottidean folds, and the false and true cords, the ventricles being obliterated. Above the true cords the œdema was the most intense; below them there was none. A curious fact was that no scar from the tracheotomy wounds could be found in the trachea. The following new facts in the family history were elicited. Another child of the patient's mother was "choked to death" suddenly at the age of about two weeks. The attacks of angio-neurotic œdema from which the mother suffered since childhood increased after the patient's death. The swellings have occurred on the limbs and face but she has never had any distinct throat symptoms although of late the neck has shown a tendency to swell.

THE Secretary of State for Foreign Affairs has sent to the Board of Trade a copy of a telegram, dated Sept. 15th, from His Majesty's representative at Hamburg, intimating that no further case of cholera has occurred at that port since Sept. 6th.

THE Royal College of Physicians of Ireland has appointed as its representative at the forthcoming International Congress on Tuberculosis at Paris Professor E. J. McWeeney, bacteriologist to the Local Government Board for Ireland.

THE QUESTION OF A MEDICAL TRAINING FOR NATIVES OF SOUTH AFRICA.

BY NEIL MACVICAR, M.B., C.M. EDIN., D.P.H.

IN view of the probable establishment in South Africa of an inter-State native college[1] the question suggests itself, Will it be possible to give the natives at their present stage of development anything of the nature of a medical training? I think one may say at the very outset that a complete medical course, such as is given in Europe, is at the present time quite out of the question for the natives of South Africa. There can hardly be two opinions about this, except, perhaps, among the natives themselves, who have no idea of the difficulty of a medical curriculum. Admitting, then, the present impossibility of such a course one must also admit that the aspirations which some of the better educated natives have in this direction are perfectly legimate and further that a scientific and medical training—if it could be managed—might be expected to produce a class of men who would not only benefit their own race medically but who would also have over them a wise and steadying influence. An inter-State native college ought, therefore, I venture to think, to keep steadily in view the establishment of a medical faculty and should work towards that end. As soon as the natives have shown themselves capable of it a complete course should be attempted. Meantime a hospital course might be given which would both be useful in itself and would pave the way for a qualifying curriculum.

In India a class of men have been permitted to practise whose training falls short of the European standard. This is, no doubt, justified by the needs of the enormous native population of that country. I do not think such a course would be wise in South Africa, except possibly in the native territories. If native practitioners of inferior training were to be permitted independent practice—for example, in Cape Colony—complications would inevitably arise between them and the district surgeons and other European practitioners in their neighbourhood. A man of inferior training should not be set to oppose a fully qualified man. He ought rather to be set to assist him.

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[1] Report of Native Affairs Commission, 1905.

I.—A SUGGESTED COURSE.

There are, I believe, many district surgeons and other European medical men in South Africa who find it very difficult to give the attention they would like to give to their native patients and who, in this department of their work, would be glad to have the assistance of educated and trained natives. A training in dispensing, vaccinating, ambulance, antiseptics, anæsthetics, nursing, and hospital work generally would, I believe, produce a class of native assistants likely to be useful in dealing with native patients, and especially in the wards and dispensaries of native hospitals; and if to these subjects were added instruction in the nature and prevention of disease these native assistants might do most useful work as sanitary inspectors and health teachers among their own people. Such a class of native assistants might receive official recognition, being called dispensers, hospital assistants, or some other title which would indicate plainly their position. A diploma of a kind, a hospital diploma, might be given them.

It should be the aim of the college to turn out assistants who would not only be conversant with the practical details of their work but men also of education who would do their work with an intelligent interest. Further, while I would make independent practice impossible for them by omitting from their training such subjects as physical diagnosis and therapeutics, I would propose to teach them as much as possible of subjects like anatomy, chemistry, and physiology, a knowledge of which could only add to their usefulness. I would go further and try to give them as clear a conception as possible of the nature and methods of prevention of common diseases so far as these are known. They might then, as in Madagascar,[2] be made use of to give lessons in hygiene in the village schools and elsewhere, and I think that in this way something really effective might be done to check the ravages of those diseases—such, for example, as tuberculosis and enteric fever—which at present are the cause of much suffering among the natives and which, moreover, are now, and will continue to be, a menace to the white population of South Africa so long as they remain unchecked among the natives.

The hospital course, then, might be arranged somewhat as follows. I am taking for granted that students, before entering upon this course, will have passed through a preparatory course including classes in chemistry, physics, and natural science.

Proposed hospital course of two years' duration.—First year: Anatomy, taught by means of skeleton, models, diagrams, and dissection of animals; five hours a week. Physiology and histology, two hours a week; text-book, Huxley's "Physiology," illustrated by sections and simple experiments. Materia medica, including a knowledge of drugs, their sources, their appearance, their preparation for use, their actions upon the healthy body, their doses, and the treatment of cases of poisoning by them; three hours a week. Practical training in pharmacy and in section cutting and the use of the microscope.

Second year: Pathology and prophylaxis, illustrated by sections, and including bacteriology; five hours a week. Minor surgery, including bandaging; the principles and practice of antiseptic surgery as applied to the treatment of wounds, burns, &c.; the methods of treatment of fractures, dislocations, sprains, and bruises; ambulance and first aid, anæsthetics, venereal diseases, tooth extraction, the names and uses of the commoner surgical instruments; two hours a week. The care of the sick, including a knowledge of the symptoms of common diseases, methods of administering medicines, diets required in different diseases and their preparation, baths, packs, massage, temperature recording, precautions to avoid the spread of infection, methods of disinfection, the use of medical appliances, the care and feeding of infants, and the uses of the ordinary household remedies; three hours a week. Practical training in chemical and microscopic examination of dis nursing male patients, surgical dressings, and vacc

It will be noted that in the above-outlined hospita the subjects proposed to be taught are limited in a way. Thus, materia medica is taught but not thera The symptoms of diseases are given (as in a nursing but not the physical signs. In the absence of that i knowledge of the interior of the body and its diseases can only be gained by dissecting and post-mortem ex tions one dare not teach students auscultation an cussion. Hence they cannot practise and ought not taught therapeutics, major surgery, or obstetrics. curriculum would very possibly have to be modified result of experience. It resembles that given to compo in India, with these differences: that the studen presumed to have a better preliminary education t required of compounders and that the curriculum in the study of pathology and bacteriology. For the pu of this training there would be required a native ho and dispensary and a small laboratory. The teaching might consist at first of two qualified men who could c the teaching and the work of the hospital and dispe between them.

A course such as has just been outlined would serve purposes. In the first place, it would supply a present in the country by providing a class of intelligent and, certain extent, skilled native assistants; and, in the sec it would be a step—in the present condition of the nat almost a necessary step—towards a full medical curricul I think that this assistants' course might be gradu worked up to a sufficiently high standard to make transition to a qualifying course comparatively easy, an this were done native capacity would be adequately tes before the expense and responsibility of a full course w undertaken. It may be objected that, as the course beca more difficult, the college would be over-educating th native assistants for their work. The answer to this objecti would be that the work they would get to do would natura depend upon the extent of their training and capacity, a while they would never be able to practise there need be limit set to their usefulness as sanitary inspectors and heal instructors, working under direction and solely among the own people, and the better trained they were the more con petent would they be to perform these really importan duties and especially to combat native superstition wit regard to the nature and causes of disease.

The first step towards a qualifying course might be t make the teaching and laboratory appliances of the preliminary scientific subjects of the preparatory course sufficiently good to justify an application to some home university for recognition. When this had been attained it would be in the power of any student of special ability and means to continue his medical curriculum at home and so to qualify completely instead of taking the assistants' course in South Africa.

The next important step would be the establishment of a full anatomy course, with a dissecting room; and, finally, a sufficiently large hospital, with post-mortem examinations and a good surgical and medical staff, would be necessary before the last rung of the ladder could be reached and the qualifying course given. Considering the present state of the natives this may seem to many a wild ambition. But there can be no doubt that the desires of many natives lie in this direction and provided they are prepared to begin at the bottom of the ladder and mount it step by step as students at home have to do, an inter-State native college may well consider it a duty to give them the opportunity. No other college curriculum is more likely to produce good results and less likely to produce bad ones, provided always that the teaching is thorough and that students who exhibit moral obliquity of any kind are carefully eliminated.

II.—EXPERIENCE IN OTHER COUNTRIES.

A good deal is to be learnt from the experience of those who in other parts of the world have established medical schools for natives. I have tried to obtain information about some of these and the following details are, I believe, correct.

India.—In India three principal grades of native medical assistant are recognised and besides these there are also certain sub-grades. The lowest is that of compounder. This grade, strictly speaking, has no official recognition and no Government qualifying examination. A compounder is expected to be able to dispense and to do simple surgical dressings. In the North India School of Medicine for Christian Women at Ludhiana compounders receive a two years' course of teaching in elementary anatomy, physiology, chemistry, materia medica, bandaging and minor surgery, hygiene, toxicology, antiseptics, and anæsthetics.[3] The second grade is that of hospital assistant. To qualify for this a four years' training is required, which includes systematic instruction in materia medica and pharmacy, anatomy and dissections, medicine, surgery, midwifery, forensic medicine, and hygiene.[4] Successful candidates either enter Government service as hospital assistants or engage in private practice. The third grade is known officially as that of assistant surgeon. The course extends over a period of five years and, besides the subjects just mentioned as being taught hospital assistants, includes chemistry and practical chemistry, physiology, botany, diseases of women and children, and pathology. This course approaches in completeness that of a European university and students who successfully complete it receive a licence and M.B. degree.

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[2] Colonie de Madagascar et Dépendances. Arrêté créant un Corps de Médecins Indigènes de Colonisation. 15 Octobre, 1900.

China.—The only medical schools conducted on European lines in China at the present time are connected with mission hospitals, except one at Tientsin, which commenced as a mission school and was taken up by Li Hung Chang. Of these schools the Hong-Kong College of Medicine for Chinese, founded in 1887, may be taken as an example. The syllabus of this college for the year 1903 shows that students, during a five years' course, receive instruction in the following subjects: anatomy, chemistry, physiology, materia medica and therapeutics, practice of medicine, surgery, midwifery and diseases of women and infants, medical jurisprudence, pathology and tropical, infections, and eye diseases. Successful students receive a licence, and after serving the Hong-Kong Government for three years either enter private practice or continue in Government service. It may be mentioned that a proposal is at present on foot[5] to establish a large teaching medical college in Central China, Christian in tone but independent of all the missions. The London committee, which is trying to give effect to this proposal, hopes that in such a college a much more complete medical training will be possible than can be given in a mission hospital.

Madagascar.—In the year 1863 the London Missionary Society founded a hospital at Antananarivo and began to give a medical training to a number of Malagase students. This example was followed two years later by the Norwegian missionaries. In the year 1885 the two missions united and formed a medical school granting diplomas which were recognised by the Malagase Government. Still later the native Government itself established a hospital and medical school. When the French took possession of the island they established (in December, 1896) a well equipped medical college at Antananarivo which absorbed and replaced those earlier schools.[6] In this college native students undergo a five years' course of study and practical training. As their curriculum presents some curious and interesting features, it is here given in detail.[7] First year: Physics, chemistry, parasitology, anatomy, and practical organic chemistry. Second year: Anatomy and histology, physiology, minor surgery, medical and surgical cliniques, dissecting and practical physiology, &c. Third year: Same as second year, with general pathology. Fourth year: Pathology, medical procedures, emergency surgery, obstetrics, pathological anatomy, therapeutics, diseases of the skin, dentistry, clinical instruction, diseases of the mouth, diseases of children, medical ethics, duties of a medical man, hygiene, materia medica, and practical organic chemistry. Fifth year: Cliniques medical, surgical and obstetrical, materia medica, the ethics and professional duties of medical men, diseases of the mouth, medical jurisprudence, therapeutics, dentistry, children's diseases, and pharmacy. Up to the end of 1903 the college had granted 112 diplomas.[8] Four students had also taken French degrees after less than two years' study in France.[9] The best diplomates receive appointments in the Government service with the prospect of promotion. Others become private practitioners. Others get employment upon the railway.

Egypt.—The Medical School of Cairo[10] was founded by a Frenchman in the year 1827 and for more than 20 years it was staffed by French professors. Then, after being for a few years under the charge of German teachers, the school passed into the hands of native Egyptians and so it remained until after the English occupation of Egypt. The curriculum during the French period was one of five years. Later it was extended to six years. When in the year 1898 the English were re-modelling the whole school they cut down the course to four years, excluding at the same time "all preliminary scientific subjects." The school is now well equipped and strongly staffed. The subjects taught are materia medica, chemistry, anatomy, physiology and biology, pathology, medicine, pharmacology and dispensing, forensic medicine, hygiene, surgery and operative surgery, midwifery and gynæcology.[11] Diplomates of the Cairo Medical School have the right to practise in Egypt and many of them at the same time hold Government appointments.

Syria.—If the Indian, Hong-Kong, and Egyptian schools be taken as representative of English methods and the Madagascar school of French methods, the Syrian Protestant College school of medicine at Beirut is a good example of what Americans have been able to do in circumstances very similar to those of the other schools. This school was founded by the American missionaries in the year 1867. It has a four years' curriculum, which includes the following subjects: chemistry, inorganic, organic, and physiological; anatomy, including "practical work"; histology, zoology, materia medica, and pharmacology; physiology, "with demonstrations"; hygiene, medical jurisprudence; pathology, with "laboratory work"; practice of medicine, surgery, obstetrics and gynæcology, dermatology, diseases of the eye and ear, therapeutics, diseases of children, and bacteriology in laboratory.[12] To successful students a diploma is granted and also the degree of doctor of medicine and surgery. These qualify their holders to practise in any part of the Turkish Empire, including Egypt.

With the single exception of the compounder's course, given by the Ludhiana school, all of these curricula qualify to practise. They, however, differ from one another in many respects and their points of difference are instructive.

Entrance tests.—These are as follows:—

India.—Lahore Medical College (Assistant Surgeon Course): Intermediate Examination of an Indian University or equivalent examination. Lahore Medical School (Hospital Assistant Course): Anglo-vernacular middle school examination. North India School of Medicine, Ludhiana (Hospital Assistant's Course): University entrance examination or Anglo-vernacular middle school examination, but students intending to study in Urdu are not expected to pass these examinations.

China.—Hong-Kong College of Medicine: Examination equal to Standard VI. of Hong-Kong code.

Madagascar.—Antananarivo College of Medicine. Examination subjects: First, French language; second, physics, chemistry, zoology, and botany; third, mathematics (arithmetic, including fractions and proportion and simple geometry).[13]

Egypt.—Cairo Medical School: Possession of secondary education certificate or its equivalent (Arabic, English or French, arithmetic, geometry, algebra, geography, physics, chemistry, and drawing).

Syrian Protestant College School of Medicine.—Entrance examination in fluent English, French or Turkish, geography, physiology, arithmetic, algebra, geometry and physics, or satisfactory completion of second year of arts course.

The intermediate examination of the preparatory or arts course of the proposed South African native inter-State college would probably before long be equal to that of the Syrian or Indian colleges and would suitably prepare a student for his medical course.

The language question.—While there can be no doubt of the educational advantage of giving elementary instruction largely in the vernacular, when it comes to advanced scientific instruction the labour of translating becomes very heavy and the system is apt to prove unworkable. When the French established the Egyptian School of Medicine early in the last century they had all their lectures interpreted into Arabic and a large number of text-books were translated out of the French into Arabic. But in time these books became obsolete and were not replaced by new translations. Now all the teaching is in English and the librarian holds special English classes for backward students. In China at the present time there are, I am informed, only two schools of medicine (Hong-Kong and another) in which the teaching is in English. In all the others instruction is given through the medium of Chinese, and many English text-books have been translated into Chinese. Some time ago a medical journal was started in Chinese for the benefit of native practitioners and, so far as I know, this journal is still in existence. On the whole it seems probable that Chinese, unlike Arabic, will prove to have sufficient vitality to develop a medical literature of its own and so to justify the experiment of teaching in it. In India, I believe, the instruction is chiefly given in English. In the Ludhiana school, however, besides the ordinary hospital assistants' course, given in English, there is an easier course in the vernacular Urdu. In Madagascar the instruction is in French and in Syria it is in English.

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[3] Prospectus of the North India School of Medicine for Christian Women (1903-04).

[4] Syllabus of the Lahore Medical College and School (1900).

[5] Medical Missions at Home and Abroad, March, 1905.

[6] La Dépêche Coloniale Illustrée, Dec. 31st, 1903.

[7] Règlement de l'École de Médecine de Tananarive, September, 1902.

[8] La Dépêche Coloniale Illustrée, Dec. 31st, 1903.

[9] Rapport sur le Fonctionnement de l'Assistance Médicale à Madagascar en 1902.

[10] Records of the Egyptian Government School of Medicine, 1901.

[11] Report upon the Hospital and Medical School of Cairo, 1903.

[12] Catalogue of the Syrian Protestant College, Beirut, Syria, thirty-eighth year, 1903-1904.

[13] Arrêté, Dec. 30th, 1903.

With the natives of South Africa it is quite evident that the instruction must be given in English, and if the intermediate examination of the literary course be made the condition of entrance to the medical classes there should be no difficulty about this point. The question may, however, arise as to the necessity of any second language and in particular as to the advisability of native students studying Latin before entering upon the medical course. A glance at the details just given of the preliminary examinations shows that neither in Egypt, Madagascar, Syria, nor China is a knowledge of Latin required. I have not details of the Indian entrance examinations. To my mind it is self-evident that until the South African native has perfected his knowledge of English it is a gross waste of his time to study any other language, and that for a medical man, if a second language is to be learned, German, French, or even Japanese would be more useful than Latin. All the Latin that is required in order to understand prescriptions could be conveyed in a fortnight's simple lessons.

Preliminary scientific subjects.—A medical man is expected to have a good general knowledge of the physical and natural sciences. Therefore physics, chemistry, botany, and natural history find a place in the modern medical curriculum. These subjects have only a slight practical bearing upon the future work of a medical practitioner. Their chief value lies in this, that they give the student a breadth of view and a scientific habit of mind which are an excellent preparation for the more specialised studies upon which he is about to enter. The most necessary of these subjects for a medical student is chemistry and, with the exception of the hospital assistants' course in India, chemistry enters into the curricula of all the schools which we have been examining. Physics is taught in the Madagascar school only but it enters into the Syrian and Egyptian entrance examinations. Botany is included in the Indian higher course and zoology in the Syrian curriculum and both these subjects are included in the entrance examination of the Madagascar school.

It will thus be seen that preliminary scientific subjects enter somewhat sparingly into all of these curricula. In Egypt they seem to have been a tax upon the time and mental powers of students rather than a help to them, for when the course was shortened in 1898 "all preliminary scientific subjects were excluded," chemistry being, however, retained.

If the literary course of an inter-State native college in South Africa is developed upon broad lines these subjects might all be included in it and one cannot help hoping that, if taught practically, they would develop rather than exhaust the mental powers of the students and, as at home, prepare them for their medical studies. The South African native at present is so unaccustomed to think scientifically that I cannot believe it would be a wise policy to allow him to skip these preliminary scientific subjects and launch at once into the more definitely specialised branches of the medical curriculum.

Special scientific subjects.—Following the preliminary scientific subjects which a medical student studies only in a general way there comes a group of scientific subjects which bear directly upon medicine and surgery and which therefore must be studied thoroughly and in detail. These subjects—human anatomy, physiology, pathology, and materia medica—form the foundation of a student's knowledge, for which his earlier scientific studies have, as it were, cleared and levelled the ground. They are, paramount importance to him, because if he obtain thorough grasp of them he can hardly do otherwise t succeed, while if his knowledge of them is deficient be almost sure to fail in his subsequent medical and surgi work.

All the qualifying curricula under review include anato and materia medica, and all except the Indian hospi assistants' course include physiology and pathology. degree of thoroughness with which these subjects are taug no doubt varies in the different schools and it is diffic to form any opinion as to this by merely looking at printed curricula. Anatomy in particular, which in Eur every student has to learn by the laborious but most instr tive method of dissecting, is difficult to teach in Orien countries on account of the abhorrence of the people to s a method. In China dissecting cannot at present be d and the "mannikin" is made use of for the purpose teaching anatomy. In India, Egypt, and Madagascar sys matic dissections are carried out by the students. In Syrian school "students have a course of practical w each year" for two years.

When one remembers that it is only for about a cent and a half that the dissection of the human body has b systematically practised in European schools of medicin the great Greek physicians having apparently obtained th knowledge of anatomy from dissections of animals[14]— need not wonder that in an Asiatic country much prejud has to be overcome before dissecting can be introduc There is no reason to suppose that in South Africa the di culties to be overcome would be greater than in India an believe that if it were plainly put before the native peo that before the assistants' course could be developed int qualifying course a dissecting room would have to be esta lished they would soon acquiesce. Post-mortem exami tions, also, would have to be of fairly frequent occurrence a qualifying course were to be given in pathology,

Final subjects.—At present in British schools the atte tion of senior students is directed mainly to two subjec medicine and surgery. Obstetrics and gynæcology may our present purpose be regarded as branches of surgery. these are added, but in quite a subordinate position, t subjects of public health and medical jurisprudence. T history of medicine and medical ethics have not, at lea until quite lately, received attention.

Looking at these subjects broadly one sees that at prese almost the whole emphasis of the later years of a medic curriculum is laid upon curative medicine and surgery, whi preventive medicine receives little attention. One ca detect, however, a growing opinion amongst medical me that the time is at hand when methods of prevention wi have to receive a far greater share of attention at the han of the profession than they do now. Now that a conside able body of fairly exact knowledge exists as to the caus and methods of propagation of disease a large field of wor is opening out to medical men, and in the medical inspectio of schools, health classes under the direction of the count councils, societies for the prevention of tuberculosis, an other kindred efforts, one may see the advancing edge of great wave of activity which in the near future will absor the energies of many medical men. I fancy that ever medical practitioner and every surgeon, while he rejoice that he is privileged to relieve and sometimes to cure disease must often cherish the wish that he had been called i before, and not after, the mischief was done. It is to b expected that in time the growing opinion of the professio will be reflected in the curricula of the medical schools an that much greater attention than at present will be given t the subject of preventive medicine. In view of this it woul be well in planning even a native assistants' course to lay emphasis upon prevention rather than cure.

Certain features in the curricula which we have been examining remain to be noticed. A careful analysis of the subjects taught discloses the fact that, although in a general way qualifying to practise, certain of the curricula have limitations that are not met with in European schools. For example, in the curriculum of the Madagascar school there is no mention of gynæcology, and the instruction in surgery is limited to minor surgery and emergency surgery. As French practitioners are stationed in every province of the island it is not necessary for the native medical men to be familiar with the operations of major surgery except in so far as these belong to the surgery of emergencies. The other s probably due to considerations of moral expe- There are no such limitations in the curricula of n, Egyptian, or Hong-Kong schools, or in the sistant surgeon) Indian course. But gynæcology from the Indian hospital assistants' course. The rse is also remarkable for the attention given to l aspect of medical work.

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[14] Hunterian Oration, by John Tweedy, February, 1905.

es of the hospitals used for clinical teaching in the schools are as follows: Cairo, 420 beds; Antana- he hospitals of 81, 100, and 110 beds respectively, nly used for teaching; Lahore, 245 beds; , 70 beds; Beirut, 83 beds; and Hong Kong, at eds.

usion, I must express my very great indebtedness nformation kindly supplied me by the Principal of e Government Medical College (Lieutenant Colonel owne, I.M.S.), the Principal of the North India f Medicine for Christian Women (Miss E. M. Brown, e Director of Studies Hong-Kong College of Medi- Chinese (Dr. R. McLean Gibson), His Excellency Gallieni, Governor-General of Madagascar; the of the School of Medicine, Cairo (Dr. H. P. Keat- nd the President of the Syrian Protestant College . Howard S. Bliss, D.D.).

THE SPREAD OF CHOLERA.

THE BRITISH DELEGATE TO THE OTTOMAN BOARD OF HEALTH.)

will no doubt have received from other sources[1] tion upon the present outbreaks of cholera in parts of Germany and Austria, but as my preceding have followed in some detail the unbroken history spread of the disease since 1902—from the Hedjaz to hence to Syria, Mesopotamia, Persia, Asiatic Russia, sus, and up the Volga to various places in an Russia—it may be useful to continue the story of tern extension of the disease, so far as the informa- ed here will permit.

e in Hamburg is officially stated to have been an emigrant who arrived at the Russo-German frontier Illowo on August 25th; he travelled with other s in a closed wagon to Hamburg, where he arrived 28th. He was taken ill with syncope in the emigrants' room and removed to the lazaret at Groden, where on August 29th. The cause of death was shown ogically to have been Asiatic cholera. This patient from the village of Dzekan, in the government a, in Polish Russia. A second case occurred among emigrants at Hamburg on Sept. 2nd. A third case has since occurred and has ended in death.

Sept. 5th it was officially reported that up to that date, n to the Hamburg cases, 77 cases of cholera and aths from the disease had occurred in different places e basins of the Vistula, the Brahe, the Netze, and the erg canal. On the 7th it was stated that one case of had been observed at Posen, two at Bromberg, one nsberg, two suspected cases at Marienwerder, one d case at Landsberg, and 12 cases and six deaths burg and in its neighbourhood. On the 9th news ed that one fatal case had occurred at Frankfort e Oder, another fatal case at Czarnow, 18 cases and six s at Nakel, three suspected and two certain cases at urg, and one fatal suspected case at Marienwerder. r suspicious cases were said to have occurred in the s of these towns. On the 10th it was reported that spected cases and one death had been recorded on the day in the Dantzig district and that on the 8th and 19 cases and seven deaths had occurred in the infected . On the 12th it was stated that on the two preceding s 23 cases and 15 deaths had been recorded in the tzig district, four certain and four suspected cases in of Dantzig, and that since the beginning of the out- there had been observed in all 161 cases of cholera and s in Germany, distributed over 50 different localities. y, from noon on the 11th to noon on the 12th eight suspected cases and three deaths occurred in the districts of Dantzig, Bromberg, and Frankfort on the Oder.

The outbreak in Austria has been of a much less extensive character. Between August 22nd and Sept. 4th seven cases of cholera, with three deaths, occurred in two villages in Galicia. In the first, named Padew-Narovodc, in the district of Mielec, in the province of Tarnow, five cases occurred. In the other named Grodzisko, in the district of Lanzut, two cases only were observed. In each village the first case developed in a labourer employed on a raft on the Vistula or its branches. On Sept. 10th it was reported that two suspected cases of cholera had been observed in Silesia, but these have been since declared not to have been cases of cholera. Finally, on the 12th a fatal suspected case occurred at Tarnow.

The exact origin of the outbreaks in Germany and Austria is at present unknown, but on geographical considerations alone it would seem highly probable that they must be ascribed to an importation of infection from Russian territory. So far as is known the latter is the only European country in which cholera has been present for several years past and although records of its actual presence there during the past few months are wanting it is more reasonable to suppose that the disease has been lying dormant there during that period than to ascribe the outbreaks in Germany and Austria to a local development of the cholera germ without importation, or to an importation from some still more remote country, such as India, where cholera is always present, or Persia, where it was present during the past winter. It will be recalled that in the earlier months of last winter there was a very extensive epidemic of cholera in the Caucasus and Transcaucasia and that between September and February the infection spread up the Volga and caused comparatively mild outbreaks of the disease in the governments of Astrakan, Saratof, and Samara. These were believed to have come to an end in February; but on March (12th) 25th a suspicious case was observed at Bataisk in the Don Territory; and on (April 21st) May 4th an actual case of cholera was reported from Tsaritsyn on the Volga. On May 15th two suspicious cases were observed in the Bogorodsk district of the Moscow government, and since that date there have been rumours of the presence of cholera at such widely separated places as Lodz, Tula, Radom, Vilna, Riazan, and Tomsk. On bacteriological or clinical evidence the cases which gave rise to these rumours have been declared not to have been cases of actual cholera. It is necessary, therefore, to suppose that the infection, if it has indeed lingered on and been the cause of the German and Austrian epidemics, has remained more or less latent or has given rise only to mild, unrecognised cases of the disease. The remarkable facts that in Germany the disease has been mainly spread in the provinces of East and West Prussia and Posen and in Austria in that of Galicia; that these provinces are grouped around the governments of Polish Russia; that these latter governments are watered by the Vistula and are known in Russia as the *Privislinskia gubernii*, or governments on the Vistula; that the German and Austrian outbreaks are practically confined to the basins of the Vistula and its branches; that some of the earliest cases in both are said to have occurred in lumbermen on these rivers; and, finally, that the first case in Hamburg was that of a Russian emigrant,—all point to the conclusion that the source of the epidemics must be sought in the Polish governments of Russia.

The measures taken in Turkey in view of the above outbreaks are at present confined to a medical visit on arrivals by land or sea from the infected places, together with disinfection of their dirty linen and of the railway carriage or ship's cabin they may have occupied, and five days' medical surveillance at their place of destination.

Constantinople, Sept. 15th, 1905.

ASYLUM REPORTS.

Monmouthshire Asylum, Abergavenny (Report for the Year ending March 31st, 1905).—Of the 964 patients resident in this asylum at the close of 1904 661 belonged to Monmouthshire and 217 to the county borough of Newport, which up to the present has been part owner of the asylum but is now opening an institution of its own. The balance was composed of out-county and private patients. The recent separation of the counties of Brecon and Radnor from that of Monmouth, in consequence of which the insane of the two former counties now gó to a separate institution, does not appear to have had any effect upon the number of admissions to the Monmouth Asylum. The admissions (excluding patients received under contract) amounted to 238. The average number resident was 936. 79 patients were discharged recovered (34·3 per cent. of the admissions) and 12 relieved. Of the former it is instructive to note that 70 had been under treatment less than one year, of whom 53 were under treatment less than six months, and 52 of the 79 were cases of first attack and of less than three months' duration on admission. The deaths numbered 99, being at the rate of 10·5 per cent. on the average number resident. Tuberculosis claimed no more than 7 per cent. of the total number of deaths, the average for asylums of similar size being 16·5 per cent. The electric light is being installed. We note that two of the asylum employés, retiring after long service, have been liberally pensioned. The weekly charge per head is only 8*s.* 5½*d.*, notwithstanding that this institution is conducted most efficiently as testified to by the report of the Commissioners in Lunacy.

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[1] The L[illegible] Berlin

Salop and Montgomery Asylum (Report for the Year 1904).—From the report of the Commissioners in Lunacy it appears that this asylum is greatly overcrowded, there being at the date of their visit 41 patients in excess of accommodation, notwithstanding that 20 patients were boarded at another asylum and 25 at a workhouse. The Commissioners, after visiting the latter, declined to sanction a scheme for boarding a further number of patients therein. Since their report a further 20 patients have been boarded at another asylum. The medical superintendent, Dr. D. F. Rambaut, reports that on Jan. 1st, 1904, the patients under care numbered 808, of whom 17 were private. There were during the year 195 admissions, 46 being readmissions. Of the admissions, 77 were in the most favourable class for treatment (first attack, onset within three months of admission). Of the discharges 83 had recovered, giving a percentage of 46·11 on the admissions according to Table III. of the statistics, and nine were relieved. The deaths numbered 97, being 11·8 per cent. of the average number resident; of these 20 were from tuberculous disease, 12 from influenza and its complications, three from erysipelas, one from colitis, and one from enteric fever; other causes were usual and without special interest. Three cases of enteric fever occurred the source of which is not referred to, and probably, therefore, it was not ascertained. There were also two cases of small-pox amongst the patients attributed to infection from a neighbouring house. The Commissioners note in their report that since their previous visit some 19 months before there had occurred five cases of enteric fever, seven of erysipelas, and several of influenza, in addition to the cases of variola referred to, and they therefore express the hope that the asylum may be provided with an isolation hospital at an early date. The committee of the asylum in its report states that the matter is engaging its attention, as is also the question of the accommodation at the institution. This, it is evident, is insufficient for the needs of the counties. The high proportion of deaths from phthisis (22 per cent. of the deaths occurring in the period between the visits of the Commissioners) is probably connected with overcrowding. Amongst recent improvements are the provision of a reservoir for water for use in case of fire and the installation of an electric fire alarm system; a steam fire-pump is still needed, the pressure of water in the hydrants being, it is reported, inadequate. The weekly cost of maintenance, which first reached 9*s.* in 1901, according to a table supplied is at present 9*s.* 4*d.* The appearance of swine fever is reported, a scourge from which asylums suffer rather frequently. All the pigs had to be slaughtered. It is satisfactory to note that a superannuation allowance was given to a charge attendant incapacitated from work and the accounts show that eight previous employés are in receipt of pensions.

County and City of Worcester Asylum (Annual Report for 1904).—This asylum is seriously overcrowded, according to the report of the Commissioners in Lunacy, though from that of the visiting committee it appears that there are not more than 26 patients in excess of the accommodation, 30 women are boarded out at other asylums. A new asylum is, it appears, being erected for Worcester. Mr. G. M. P. Braine-Hartnell, the medical superintendent, reports that at the close of the year 1904 there were resident 119 patients, showing an increase of 30 in the year. The average number resident throughout the year was 1176. There were admitted 252 patients, the highest number but one since the opening of the asylum. As regards the causation of insanity in these we find "hereditary influence" and "family predisposition" (not direct heredity) given as causes in 12· and 17 8 per cent. respectively. It would be advantageous to know what is meant by the indirect heredity implied in the second designation. The percentage of cases in which heredity, direct or indirect, was ascertained is decidedly low. In 23·4 per cent. of the admissions the cause was unknown. The recoveries during the year numbered 102, or 44·88 per cent. of the admissions, which is satisfactory, the average percentage for the past six years being about 41. Of the 252 admissions 131 are shown by Table VII. to have been in the two most favourable classes for treatment, i.e., the were either victims of a first attack or the onset ha occurred within 12 months of admission; the mean age of the admissions was 43·5. From the point of view, therefore, of duration of attack and of age the admissions were of a fairly satisfactory type and as regards condition of health only 54 were in really bad health. The deaths numbered 101, or 8·58 per cent., on the average number daily resident. Pulmonary tuberculosis accounted for 17·8 per cent., a fairly high proportion, and colitis for 15·8 per cent., a very high proportion. The latter disease has been prevalent, and the medical superintendent has found it quite impossible to isolate cases owing to the overcrowded state of the wards. In addition to colitis there have been two cases of erysipelas and three of typhoid fever. The number of cases of pulmonary tuberculosis and colitis points to the need of immediate reduction of the overcrowding by boarding out, pending the completion of the new asylum. No doubt, however, as the committee observes in its report there is difficulty in obtaining accommodation in other asylums, where only patients of the best, that is, the least troublesome, class are commonly received. Officials resigning during the year after long service have been duly pensioned. This asylum is enabled to maintain its patients at the very low cost of about 7*s.* 11*d.* per head per week and to make a charge of no more than 8*s.* 2*d.* for them. The average cost for asylums in general is 10*s.* This fortunate state of things is probably connected with the fact that a farm of unusual size (517 acres) is maintained, which was worked at a profit of £427 on the year. There are many obvious ways in which the working of a farm is beneficial to asylum patients and asylum committees may be advised generally to turn their thoughts in this direction.

THE PUBLIC HEALTH OF JAPAN.

WE have recently received from the Home Department of the Imperial Japanese Government a copy of the last annual report of its Sanitary Bureau, which is dated from Tokio and relates to 1901, "the thirty-fourth year of the Meiji." The volume, which covers 200 quarto pages, is carefully prepared and well printed, and although from well-known circumstances its publication has been considerably delayed the report has in no degree suffered in consequence. It gives evidence throughout of systematic and skilful compilation and in regard both to the intrinsic merit of the subject matter and to its methodical arrangement it might advantageously be adopted as a model for reports of this kind by certain State authorities nearer home.

The statistical matter of the report is distributed with suitable comments over four sections, but as the first two of these are directly concerned with matters of professional interest, it is to them that our present remarks will be limited. Section I. gives a general account of the constitution of the Sanitary Bureau, together with the names, official rank, and duties of the several members. In Japan the supervision of the public health is entrusted to permanent officials of exalted rank—each division of the business being directed by an expert of proved competence, who is held responsible for the good conduct of his department. The Imperial Government itself commissions the high State officials who hold the rank of "Councillor," whilst the subordinate officers, of the grade of "Haunin," are appointed by the heads of the several Government departments. In this way independent men are secured at the head of the administration with efficient workers under them to carry out their orders. The following are among the matters specially dealt with in this section. 1. The issue and modification, from time to time, of regulations for the education, examination, registration, and discipline of practitioners of medicine and of pharmacy as well as for the compilation and periodical revision of the Japanese official Pharmacopœia. 2. The determination of conditions for the granting of health certificates and for the conduct of bacteriological investigations at the hygienic laboratories. 3. The regulation of departments for the preparation and supply of vaccine lymph, as well as of serums for the treatment of plague, diphtheria, and rabies. 4. The drafting of "bills" for presentation by the Home Minister: (*a*) in regard to the sanitary inspection of shipping and to the temporary establishment and closing of quarantine stations; (*b*) as to the methods of chemical and microscopical analysis of food, drink, and clothing, for the detection of adulteration by arsenic and other impurities; and (*c*) as to the prevention of pulmonary tuberculosis, leprosy, and hydrophobia. From this summary it will be seen that in point of administrative detail the organisation of the bureau is complete. Preventive medicine in its largest aspect and therapeutics in their minutest details are equally cared for.

Section II. of the report is devoted to vital statistics and to the details of public hygiene. It contains an instructive account of the administrative measures adopted for the protection of the food and water supplies, and of the provisions for public sewerage, sweeping, and scavenging. The custody of the insane is evidently provided for with much care and arrangements are made for the due supervision of such persons of unsound mind as are permitted to remain under the care of their friends. The chapter dealing with infectious diseases is replete with interest: it treats not only of their fatality but of the number and proportion to population of cases coming under treatment from time to time. The report does not state whether in Japan there exists statutory compulsion for the notification of these diseases similar to that recently provided in England, but it is evident that the authorities in that country are alive to the necessity of tracing out the source of infection and this would seem to involve the possession of some such legal powers as now obtain with us. The group of "eight contagious diseases" dealt with in the Japanese report corresponds to the "seven chief epidemic diseases" of the English Register Office, with the single addition of plague. Among these diseases by far the most fatal is dysentery, nearly 50,000 cases of that disease having occurred in one year alone. The fatality seems to be very high, averaging more than 25 per cent. of the attacks. Dysentery is stated to have "raged furiously" in Japan, and especially in the North-Western provinces, during the years 1893 and 1894, since which period it has steadily declined, the decline being attributed in the report solely to the persistent application of common-sense preventive measures. Typhoid fever appears to be prevalent in Japan, not fewer than 24,000 cases having been observed in the year 1901. The deaths from this disease average 1·20 per 10,000 inhabitants and its fatality is represented at 22·4 per cent. of the cases known to exist. Of typhus fever 21 cases are reported, out of which seven proved fatal. Small-pox is stated to have attacked 92 persons during this year, but only four of these died, it being clear that the Japanese authorities are alive to the protective influence of vaccination. Scarlet fever cannot be either prevalent or fatal in Japan—only 46 cases, with three deaths, having occurred during the year. Many of the prefectures were entirely free from this disease. Diphtheria seems to be both a common and a destructive disease—about 15,000 cases, one third of which were fatal, having occurred in 1901. Compared with the previous year diphtheria mortality seems to have decreased in the year last mentioned, but the disease appears constantly to infest certain prefectures and to prevail there with exceptional severity. Plague was discovered in two prefectures only—the total number of attacks being three, two of which ended fatally.

In the report several charts are inserted showing the percentage of deaths to cases of each infectious disease as well as the proportion of known attacks per 10,000 inhabitants. These charts convey useful information and their preparation must have entailed considerable labour. They are, however, defective in this respect—that they do not show either the ages of the persons attacked or the proportion of deaths to cases at the several ages. As it is known that the prevalence as well as the fatality of most infectious diseases is determined by the age constitution of the population, it follows that the sickness and death returns for Japan are not comparable with those of other countries where the age distribution of the people may be, and probably is, widely different. We would suggest to the authorities of the Japanese Sanitary Bureau that the value of their statistics of disease would be greatly enhanced by the addition of full particulars with regard to the age of those attacked with infectious diseases. This principle has been carried out very completely in several of the public health reports of this country and especially in those of the medical officer of health of the administrative county of London, and the value of the report has been much enhanced thereby. In a well-equipped sanitary administration the question of infantile mortality is doubtless receiving the attention which its importance demands but we find nothing bearing on the matter in the report. In England this question has tardily come into prominence in consequence of the continued depression of the birth-rate. In future reports from Japan we hope to learn whether a similar connexion exists in that country between the birth- and death-rates of the infantile part of the population.

The regulations for the prevention of ordinary epidemics are given in the report; they are very complete and apparently designed with especial regard to the requirements of the several areas concerned. During the year 1901 special regulations have been issued or amended respecting the treatment and prevention of plague, as well as for the more perfect control of epidemics of measles and of influenza. And with respect to administrative arrangements for carrying out precautionary measures, including the appointment of epidemic inspectors, we note that such matters are not left to be provided for at the discretion and at the sole expense of local authorities as they are in England. On the contrary, they are regarded as measures necessary for the protection of the national health and are paid for in great part by subventions from the Imperial Exchequer. The manner in which vaccination is carried out may be gathered from the statement that in the year 1901 as many as 3,384,457 persons were vaccinated, of whom 1,704,329 were vaccinated for the first time, 910,866 for the second time, and 769,262 for the third time. An efficient organisation exists in Japan for the prevention and treatment of venereal disease. As many as 530 separate places in different parts of the country are set apart for the systematic medical examination of known prostitutes. The total number of such examinations during the year approached 2,500,000, with the result that 2¼ per cent. of the women were found affected with syphilis. In consequence of the rigour with which this system is carried out the proportion of syphilis among Japanese unfortunates is said to be decreasing.

It is evident that the Japanese intend to carry out the public health regulations of their empire with the same thoroughness that they have displayed in respect of their imperial politics, their army, and their navy.

THE ANTI-MALARIAL CAMPAIGN IN ITALY IN 1904.

THE Italian Society for the Study of Malaria has published its annual report for 1904. The year was one in which malaria assumed a severe type and afforded abundant opportunity for a renewed study of the various malarial problems such as the radical cure of recidivity; the pre-epidemic treatment of the malarial residue from former epidemics; the medicinal, the mechanical, and the mixed methods of prophylaxis; the destruction of the malarial mosquito; and the reclamation of waste lands in malarial districts.

For the radical cure of recidivity the members of the society are unanimous in recommending quinine as superior to all other remedies. Its use in recidivous cases, if continued patiently and perseveringly, restores the patient to his usual health, generally without the help of other medicinal adjunct. The addition of iron and arsenic is of doubtful benefit; indeed, it is frequently noticed that after taking arsenic gastric disturbances are frequent, there occurs not uncommonly a true arsenic exanthem in the form of acne spots and even of pustules and the treatment has for a time to be interrupted. The best adjuvant to the action of quinine for overcoming the anæmia in obstinate cases is good nourishing food. It is satisfactory to note the ever-increasing use of the State quinine. Its popularity is due to the first-rate quality of the drug as supplied by the Government; to its guaranteed purity, excellent state of preservation, pleasant and easy form of administration (in sugar-coated tablets), perfect assimilability, small cost to the public (who can purchase it at every corner where a "salt and tobacco" shop is to be found); still smaller cost to those who desire, or whose duty it is, to distribute it gratuitously to labourers in the malarial zones; and its efficacy. These qualities are slowly but surely dissipating the ancient and firmly rooted prejudice against quinine entertained by many of the rural population. In the past financial year 1904–05 no less than 13,000 kilogrammes (nine and three-quarter tons) of the State quinine have been distributed—a large amount certainly, but not so large as the needs of the country demand. Besides tablets for ordinary use the Government has also issued sterilised vials of hydrochlorate and bichlorate of quinine for hypodermic injection, prepared according to Gaglio's formula, which is the best and is that adopted by the State at the Central Military Pharmacy; but these should never be employed except when the stomach is intolerant of quinine or when an energetic and prompt action of the drug is urgently required. Another most welcome addition of the past year to the State's pharmaceutical armamentarium is the sweetened preparation of quinine known as "cioccolattini di chinino" (chocolates of quinine). These pastilles are greedily taken by children who have hitherto been more victimised by malaria than have adults, chiefly because of their dislike to quinine, the bitterness of which had never before been sufficiently disguised. The "chocolates" are easily swallowed; they have not only a certain nutritive value but give excellent results.

That the pre-epidemic treatment of recidivous or of latent malaria advocated by Koch has proved insufficient to prevent, or even to mitigate, the fatal effects of the disease, is the conclusion arrived at by the Society for the Study of Malaria, whose report holds that in order to reduce the sources of infection by which one epidemic feeds another the most effective means consist in treating all the year round, and as thoroughly as possible, all recidivous cases. The prophylactic effects of quinine given in daily doses of 40 centigrammes (6 grains) to adults and 20 centigrammes (3 grains) to children, whether in preventing new infections or in reducing recidivity, are becoming more and more evident. The difficulties encountered in carrying out this method on a large scale are very great, as may be easily imagined when the ignorance of the peasantry in matters of hygiene and their habitual improvidence are taken into account; but wherever it was applied scrupulously and for the whole epidemic period cases of fever were reduced to a minimum. By unanimous consent it is agreed that it diminishes recidivity even in the worst malarial regions; that it banishes "perniciosità," prevents cachexia, very frequently stops the outbreak of primitive fevers, and in every case mitigates the virulence of attacks and renders recovery from them easier and more complete. It is computed that in all about 70,000 individuals have been subjected since the beginning of last year to the quinine prophylaxis for periods varying from 10 or 15 days to 15 months, a sufficient test not only of the efficacy of quinine as a prophylactic and therapeutic agent but also of its almost absolutely innocuous nature.

Mechanical prophylaxis, on the other hand, has not made the same rapid progress as the medicinal. It is, however, still employed with excellent results on the railways, especially on the Adriatic, Sicilian, and East Sicilian lines, notwithstanding inherent difficulties which are always present where human apathy and heedlessness have to be reckoned with. It is apparent that the destruction of larvæ and nymphæ of the anopheles is impossible or extremely difficult in the big marshes and that it is at best only practicable in the smaller ones. Even in the latter the expense is very considerable and an organised attempt to accomplish it is not feasible in Italy. It has been proved once more by the experience of the past year that in the case of the famous Plain of Pæstum, hydraulic "bonification," however well conducted, is not synonymous with hygienic purification and that without agrarian "bonification" there is no diminution in the prevalence of malaria. In many of the Adriatic provinces of Central Italy and of the northern provinces, where 30 years ago malaria was extremely rife and very severe, reclamation of waste land as a precedent to hydraulic improvements has contributed in a marked degree towards banishing the disease or reducing its incidence to a minimum. Further legislation is urgently needed in these directions, and especially in regard to the rice fields where the requirements of hygiene have to be reconciled with the economic exigencies of an important and lucrative industry.

But of far greater utility than any legislative measures must be the education of the population in malarial districts by means of pamphlets, conferences, and constantly reiterated explanations and demonstrations. For the rural population one fact holds more value than any amount of argument; hence nothing serves more usefully for educative purposes than the so-called "campi demostrativi" (demonstration areas), not for the purpose of giving a scientific demonstration which is now, indeed, superfluous, but in order to overcome the apathy, heedlessness, and prejudices which centuries of existence in a malarial locality have engendered in the minds of the peasantry. An uneducated population will not otherwise be brought to realise that they can by simple means protect themselves against an hereditary enemy or limit in any degree the incalculable injury which it has always inflicted upon them and which they devoutly believe to be sent from heaven itself. It is also necessary to perfect and to supplement the sanitary services during the epidemic period; to secure the coöperation of proprietors, tenants, manufacturers, contractors, and others, who for their own sakes should be eager to avail themselves of the State quinine and to help to distribute it; and finally, to organise provincial medical services by appointing one or more assistants to the *medico provinciale* selected from amongst those medical men who have made a special study and possess a competent knowledge of the new etiology, epidemiology, and prophylaxis of malaria.

Whilst, therefore, much remains to be done towards improving the organisation of the anti-malarial campaign, a glance at the statistics shows how much has already been accomplished, especially since the State quinine was introduced in 1902. In the 15 years preceding that date the average mortality from malaria was usually about 15,000 and never less than 11,000 per annum, whereas during the succeeding years the rate has fallen rapidly until it has reached less than half of the former figure. The economic advantages of this diminished mortality, and still more of the diminished morbidity which it implies, are enormous to the country at large, but in the various communes, where for years the fight against malaria has been going on, the relief has been more particularly felt. In 1904, notwithstanding the recrudescence of malaria in the Campagna in that year, the saving effected in the hospitals of Rome by the diminution in the number of cases was very considerable, more than compensating the commune for the cost of the quinine gratuitously distributed. And so in other places, such as Mantua and Argenta, where a similar economy was rendered possible. The railway companies also have reaped much benefit, a trifling expenditure on the anti-malarial campaign having effected a large saving in their administration, particularly on the Adriatic, Sicilian, and East Sicilian systems.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

The City of Sheffield.—Much interest with regard to pulmonary tuberculosis attaches to this city in that it is the only district in England in which a modified form of the compulsory notification of pulmonary tuberculosis is in force. The Act which embodied these compulsory clauses came into force in November, 1903, and the clauses provide that although the disease is to be a notifiable one the penal clauses in the Public Health Act which apply to the acute infectious diseases are not to apply to pulmonary tuberculosis. It is thus not possible to arrest a person who may be suffering from consolidation or cavitation of the lung when he takes a walk for the benefit of his health within the confines of the city, nor is he compelled to notify to the driver when he enters a cab or a tramcar the fact that he is suffering from consumption. Dr. Harold Scurfield, the medical officer of health, reports that during 1904 there were 838 new cases notified, the actual number of certified deaths from this disease during the years 1902-04 having been respectively 491, 573, and 536, figures which would seem to suggest that perhaps half the existing cases are never notified. The use made of the information thus obtained is as follows. There are two inspectors engaged to visit the homes of the patients and to leave copies of printed instructions designed for promoting the cure of the disease and diminishing the risk of infection. Advice is given as to the necessity for an abundance of fresh air, pocket spittoons are presented to those too poor to buy them, and during the later stages of the disease the patient's room is sprayed with formalin on the occasion of each visit of the inspector. Dr. Scurfield, however, adds, and the statement is worth the notice of all sanitary authorities, that it is not to be expected that the full benefit of the new pro- isions will be obtained until something is done in the way f providing hospital accommodation for the badly housed dvanced cases and sanatorium treatment for the early and urable cases.

County Borough of Wigan.—Mr. William Berry expresses he opinion that the early removal of cases of scarlet fever from a house where isolation cannot be properly practised prevents the spread of that disease in the household itself as well as to neighbouring houses. He thinks that both the death-rate and the complications are diminished by the better general conditions under which the patients are housed in hospital and, while admitting that it may be a coincidence, he points out that during 1904 there were 11 deaths among the cases notified. Six of these cases which were severe when sent to hospital died in the institution, the fatality rate amongst the admissions having been 4·06 per cent., as against a rate of 9·43 per cent. among the cases "left to be nursed in better houses with personal care and nursing."

The City of York.—The medical officer of health of this city (Dr. E. M. Smith) is evidently an enthusiastic administrator, more especially where the prevention of small-pox is concerned. During the height of the small-pox epidemic at Dewsbury it was announced that a football match between York and Dewsbury was to be played at York on Oct. 11th. The danger with which York was thereby threatened led to the chairman of the York health committee advising the York Football Club to postpone the match. There had been over 300 cases of small-pox in the Dewsbury district during September and a person suffering from small-pox who had come recently from Wakefield to York had been in contact with over 50 citizens of York before he was discovered to be suffering from small-pox. The match would necessarily be instrumental in introducing a very large number of Dewsbury people into York, so that the efforts of the public health authorities were very reasonable. All attempts to cancel the match unfortunately failed, but the health committee succeeded in persuading the North-Eastern Railway Company to refuse the convenience of any excursion trains for that day, and there was also circulated in the *Yorkshire Chronicle* the day before the match a statement signed by the medical officer of health warning the citizens of York of the danger which they would incur in attending the match. Efforts were made to persuade the members of the York team to submit to revaccination before engaging in the match and when these proved unsuccessful the medical officer of health insisted upon regarding the team as "contacts" for 18 days, disinfected all their clothes at the end of the match, and disinfected the dressing rooms of both teams. It certainly seems absurd that in all the circumstances the match could not have been postponed.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8366 births and 4270 deaths were registered during the week ending Sept. 16th. The annual rate of mortality in these towns, which had been 17·3, 17·3, and 16·1 per 1000 in the three preceding weeks, further declined to 14·3 per 1000 last week. In London the death-rate was 13·2 per 1000, while it averaged 14·7 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 5·6 in Hornsey, 6·2 in Coventry, 6·8 in Handsworth (Staffs.), 7·5 in Wallasey, 7·7 in Aston Manor, 7·8 in Rotherham, 8·1 in Reading, and 8·9 in East Ham; the highest rates were 20·8 in Sunderland, 21·2 in Stockport and in Oldham, 21·7 in Middlesbrough, 22·9 in Stockton-on-Tees and in Gateshead, and 24·9 in Great Yarmouth. The 4270 deaths in these towns last week included 821 which were referred to the principal infectious diseases, against 1578, 1432, and 1090 in the three preceding weeks; of these 821 deaths 612 resulted from diarrhœa, 63 from whooping-cough, 46 from diphtheria, 39 from scarlet fever, 34 from "fever" (principally enteric), and 27 from measles, but not any from small-pox. No death from any of these diseases was registered last week in Handsworth (Staffs); in the other towns they caused the lowest death-rates in Tottenham, Hornsey, Reading, Devonport, King's Norton, Coventry, Derby, and St. Helens; and the highest rates in Great Yarmouth, Wolverhampton, Smethwick, Bootle, Wigan, Burnley, Preston, Sunderland, and Gateshead. The greatest proportional mortality from measles occurred in Barrow-in-Furness; from scarlet fever in Birkenhead and Bootle; from diphtheria in Gateshead; from "fever" in Wigan; and from diarrhœa in Great Yarmouth, Wolverhampton, Smethwick, Stockport, Warrington, Burnley, Preston, Sunderland, and Gateshead. The mortality from whooping-cough showed no marked excess in any of the large towns. No fatal case of small-pox was registered last week in any of the large towns and no small-pox patients were under treatment in the Metropolitan Asylums Hospitals at the end of last week. The number of scarlet fever cases under treatment in these hospitals and in the London Fever Hospital on Saturday last, Sept. 16th, was 3150, against 2762, 2873, and 2982 at the end of the three preceding weeks; 469 new cases were admitted last week, against 343, 427, and 443 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system were 113, against 118, 131, and 133 in the three preceding weeks, and were 28 below the number in the corresponding period of last year. The causes of 48, or 1·1 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Leicester, Nottingham, Salford, Leeds, Sheffield, Newcastle-on-Tyne, and in 43 other smaller towns; the highest proportions of uncertified deaths were registered in Birmingham, Liverpool, Burnley, Blackburn, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 14·0, 14·8, and 14·0 per 1000 in the three preceding weeks, rose again to 15·0 per 1000 during the week ending Sept. 16th, and was 0·7 per 1000 above the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·7 in Perth and 11·0 in Paisley, to 15·6 in Greenock, and 16·6 in Glasgow and in Leith. The 503 deaths in these towns last week included 32 which were referred to diarrhœa, 11 to diphtheria, ten to whooping-cough, ten to "fever," five to scarlet fever, and three to measles. In all 71 deaths resulted from these principal infectious diseases last week, against 91, 96, and 69 in the three preceding weeks. These 71 deaths were equal to an annual rate of 2·1 per 1000, which was 0·6 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 61, 63, and 41 in the three preceding weeks, further declined last week to 32, of which 19 occurred in Glasgow, four in Edinburgh, three in Aberdeen, three in Leith, and two in Dundee. The deaths from diphtheria, which had been six and four in the two preceding weeks, rose again to 11 last week and included seven in Glasgow, two in Edinburgh, and two in Dundee. The fatal cases of whooping-cough, which had 18, 14, and nine in the three preceding weeks, rose last week to ten, of which four were registered in Glasgow, two in Edinburgh, and two in Greenock. The deaths referred to different forms of "fever," which had been one, four, and six in the three preceding weeks, further increased to ten last week and included four in Glasgow and two in Edinburgh; two of these four deaths in Glasgow were attributed to typhus fever and one fatal case of this disease occurred also in Dundee. The deaths from scarlet fever, which had been two in each of the three preceding weeks, rose last week to five, of which two occurred in Glasgow. The fatal cases of measles, which had been nine, seven, and seven in the three preceding weeks, further declined to three last week, and included two in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 44, 53, and 60 in the three preceding weeks, further rose last week to 63, and were eight in excess of the number in the corresponding period of last year. The causes of 16, or more than 3 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 19·8, 22·0, and 18·4 per 1000 in the three preceding weeks, further declined to 16·2 per 1000 during the week ending Sept. 16th. During the past four weeks the death-rate has averaged 19·1 per 1000, the rates during the same period being 15·8 per 1000 in London and 14·0 in Edinburgh. The 118 deaths of persons belonging to Dublin registered during the week under notice were 16 below the number in the preceding week, and included 12 which were referred to the principal infectious diseases, against 27, 23, and 17 in the three preceding weeks; of these ten resulted from diarrhœa, one from scarlet fever, and one from "fever," but not any from small-pox, measles, diphtheria, or whooping-cough. These 12 deaths were equal to an annual rate of 1·7 per 1000, the death-rates last week from the principal infectious diseases being 2·7 per 1000 in London and 1·5 in Edinburgh. The fatal cases of diarrhœa, which had been 25, 19, and 12 in the three preceding weeks, further declined last week to ten. The deaths from "fever," which had been one and four in the two preceding weeks, declined again to one last week. The 118 deaths in Dublin last week included 33 of children under one year of age and 23 of persons aged 60 years and upwards; the deaths of infants showed a slight decline, while those of elderly persons were considerably below the number in the preceding week. Five inquest cases and four deaths from violence were registered; and 36, or nearly one-third, of the deaths occurred in public institutions. The causes of eight, or nearly 7 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: A. J. Pickthorn to the *Glory*; E. R. D. Fasken to the *Hood*; and J. M. Rogers to the *President*, additional, for survey of stores at Deptford. Staff Surgeon T. T. Jeans to the *President*, for three months' course of study at the West London Hospital. Surgeons: E. S. Reid to the *President*, additional, for survey of stores at Deptford; R. H. Atkins to the *Pembroke*, additional; and A. K. Smith-Shand to the *Wildfire* and lent to Yarmouth Hospital.

ROYAL ARMY MEDICAL CORPS.

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HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 19·8, 22·0, and 18·4 per 1000 in the three preceding weeks, further declined to 16·2 per 1000 during the week ending Sept. 16th. During the past four weeks the death-rate has averaged 19·1 per 1000, the rates during the same period being 15·8 per 1000 in London and 14·0 in Edinburgh. The 118 deaths of persons belonging to Dublin registered during the week under notice were 16 below the number in the preceding week, and included 12 which were referred to the principal infectious diseases, against 27, 23, and 17 in the three preceding weeks; of these ten resulted from diarrhœa, one from scarlet fever, and one from "fever," but not any from small-pox, measles, diphtheria, or whooping-cough. These 12 deaths were equal to an annual rate of 1·7 per 1000, the death-rates last week from the principal infectious diseases being 2·7 per 1000 in London and 1·5 in Edinburgh. The fatal cases of diarrhœa, which had been 25, 19, and 12 in the three preceding weeks, further declined last week to ten. The deaths from "fever," which had been one and four in the two preceding weeks, declined again to one last week. The 118 deaths in Dublin last week included 33 of children under one year of age and 23 of persons aged 60 years and upwards; the deaths of infants showed a slight decline, while those of elderly persons were considerably below the number in the preceding week. Five inquest cases and four deaths from violence were registered; and 36, or nearly one-third, of the deaths occurred in public institutions. The causes of eight, or nearly 7 per cent., of the deaths registered in Dublin last week were not certified.

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To the Editors of THE LANCET.

SIRS,—I am pleased to see from Sir Harry Johnston's letter in THE LANCET of Sept. 16th that he is "not dogmatic" as regards the pygmy "having no language." I quoted from a paragraph I saw in one of the daily papers, and although we are all indebted very much to Sir Harry Johnston for his able works and fresh knowledge he has been able to bring forward with regard to Africa, still I cannot agree with him that the negro race certainly originated in Southern Asia, possibly India ("The Uganda Protectorate"). I contend that the human race originated from Africa, the Nile Valley and its sources, and that the pygmy was the "first and oldest man," and that the "pygmy language" was the first and original. But language alone will not solve the question although it helps, and if I am correct then the original pygmy language would be impressed on all the forest-dwelling negroes, as a basis first, for further improvements in sounds, &c , and more than this, wherever the pygmy first emigrated and settled he would leave some trace of his language. Those who have studied and written on the "science and origins" of language have discussed it without the ideographic symbols and their gesture signs being even taken into account. These must take their root from inner Africa and not, as the Aryanists have laboured to show, in Asia. The inner African languages prove that words had earlier forms than those which have become the "roots" of the Aryanists ; and there is no way of getting back to the origin of words except by learning once more to think in things, images, ideographs, hieroglyphics, and gesture-signs, and the primary modes of expression must be sought in their birth-place—and that is Africa—for here only shall we find the earliest rudimentary articulation of human sound, which accompanied gesture-signs and preceded verbal speech, and in these gesture signs and ideographic symbols we find the earliest language is visible figures. How important, therefore, it is to get back to the original of all that has been pictured as figures made primarily by the earliest man and then to decipher the same. These are the true radicals of language without which the philologist has no final and adequate determinative and yet these have been left outside the range of discussion by the Aryan school, but the doctrine is prevalent in current philology, whilst the earliest sign language has been ignored altogether.

Whenever the ideographic signs of the oldest civilised nations can be compared evidence of the original unity becomes apparent, and if we take the earliest inhabitants of any part of the world we find from the skeletons that these were all of the same class—negroid. This is proved by the shape of the bones, the flattened tibia, the shape of the skull, &c. All their totemic signs, ceremonies, implements, gesture, language, &c., were the same and the farther we go back the nearer we get to some central unity. If we take the totemic ceremonies of the Australian aborigines, New Zealanders, North American Indians, Ainus, and Nilotic negroes, we find that these are all the same. Such numerous and striking similarities between these ancient totemic rites and early religious and burial rites, &c., the relics of which are to be found all over the world, conclusively prove that they must have been derived from one original, and there is no logic, fact, reason, nor any argument to be advanced which could prove that the various aborigines—the Australians, North American Indians. West Coast tribes, &c.—had evolved their religion and religious ceremonies from their own surroundings and experience. The sign for Amsu and the Khui Land and Zodiacal West found all over the world, dating back to the remotest antiquity, proves that Egypt must have been the original centre and that the pygmy was the "first man" making use of the sign as I have before depicted for their chief—which was afterwards carried throughout the world—and is found in many countries, as I have stated before. And, moreover, the "sacred dance," when the chief dances around in a kind of zig-zag circle, followed closely by another, and suddenly turns round and tries to overthrow him with his right foot and leg, but does not at first, then tries again and overthrows him, when the dance ends, is probably the origin of the great battle of Horus and Sut—the great fight between light and darkness which ultimately evolved into the great fight between the serpent, &c., which we find in every country and every creed from all times. But there is much more to learn from these little people, but one must live amongst them for some considerable time, as Sir Harry Johnston rightly says.

I am, Sirs, yours faithfully,
ALBERT CHURCHWARD

South Norwood, S.E., Sept. 18th, 1905.

THE CAUSATION OF APPENDICITIS.

To the Editors of THE LANCET.

SIRS,—The causation of appendicitis is still, I take it, a subject open to discussion. The usually accepted etiological factors, based as they are upon local variations in the appendix and its neighbourhood, cannot be regarded as satisfactory. It seems to me that to attribute appendicitis to any local cause is to disregard our experience of other acute conditions, such as acute sinusitis for example, when this disease occurs, as it often does, suddenly in a healthy young subject ; is it put down to some local cause or is it ascribed to one or other of several well-known general processes, such as influenza ? Of course, the latter.

As a matter of practice, when confronted with any acute local process in otherwise healthy young people it is an excellent working principle to search for some general factor, for apart from general diseases the tendency of the young organism is undoubtedly towards health, not disease. A case of acute otitis media comes before us and we suspect scarlet fever or influenza ; or sore-throat is the most prominent symptom, and diphtheria or scarlet fever looms up ; or there are several swollen joints and acute rheumatism is to be thought of, and so on. In short, neither otitis media, sore-throat, nor swollen joints are regarded as entities. Are we right in regarding appendicitis as such ? Does it not seem more probable that it is simply one of the local manifestations of a general disease ? I think so, and the burden of this letter is that appendicitis is one of the manifestations or sequelæ of influenza, a conclusion arrived at from many considerations of which the following are a few.

1. *The existence of a grand common factor in that both diseases virtually cover the same historical period.*—The key to the causation of appendicitis must lie in some factor which has been practically constant during the last 20 years and practically absent the previous 20 years ; for appendicitis is essentially a disease of the last 20 years. Mr. S. Kellett Smith, in a letter in THE LANCET of June 27th, 1903 (p. 1839), suggested that the ingestion of chilled or frozen food supplied this factor, and his suggestion is certainly (as you have commented) a very plausible one. Nevertheless, I would suggest that the theory that influenza stands in some causal relation to appendicitis is even more plausible and that the facts of appendicitis, viewed from this standpoint, receive an explanation which has not hitherto been accorded them. The statement that appendicitis is essentially a disease of the last 20 years applies equally to influenza. True, there were epidemics of influenza before 1889, and Fitz described appendicitis in 1886, but these diseases were not then matters of daily practice as they are at present. I warrant it that if a general practitioner of 40 years' standing were asked what distinguished the last half of his practice from the first he would say the frequency of influenza and appendicitis during the second 20 years, in comparison with their rarity, or almost complete absence, during the first period.

2 *The analogy that exists between appendicitis and certain acknowledged influenzal affections, e.g., acute sinusitis, otitis media, and cerebral abscess.*—Appendicitis in its symptoms and course resembles many diseases which are admittedly manifestations of influenza, e.g., acute sinusitis. The analogy is really very striking if we look upon acute sinusitis as an entity as appendicitis has been regarded hitherto. Both are practically diseases of the last 20 years. Both begin suddenly with great pain. Both end sometimes in resolution, sometimes in pus formation. In both the local often obscure the general symptoms.

3. *The apparent alternation of influenza and appendicitis in the same patient.*—There has been an attack of influenza with, say, an eye complication. A year or so later the patient is thought to have another attack of influenza which turns out to be appendicitis, or the converse has occurred, one or several attacks of appendicitis without any suggestion of influenza, and then a definite attack of influenza with aggravation of the appendical symptoms.

4. *The agreement in the age incidence of the two diseases.*—Influenzal and appendical subjects, though not strictly limited to any age period, agree in being chiefly drawn from active young adults. Appendicitis is relatively rare in childhood, which is true also of influenza, and the latter disease, though more serious when attacking the aged, cannot be said to show them any preference, which is generally true of appendicitis.

5. *Influenza in its epidemic form is acknowledged to be sometimes responsible for a gastro-enteritis*, thereby showing that though known to prefer the respiratory tract, there is no obstacle to its affecting the alimentary canal.

The broad facts of appendicitis are—its prevalence of recent years ; its occurrence in grades of severity, catarrh in one case and pus formation in another ; its tendency to recur ; and its preference for young adults. These it will be seen are also the broad facts of influenza and indicate that there is possibly more than a passing connexion between the two affections and that probably appendicitis in the majority of cases claims influenza as its cause and that the latter in some cases expends its force upon the appendix.

I am, Sirs, yours faithfully,
J. O. PABST, M.D. Melb.,
Honorary Physician and Honorary Ophthalmic Surgeon, Auckland Hospital, N.Z.

Auckland, New Zealand.

To the Editors of THE LANCET.

SIRS,—Appendicitis has of late years become so general that individual opinion as to the probable cause and prevention should be of interest to the readers of THE LANCET, and in behalf of public health and of common humanity I venture to address this communication to you. The lowering of the tone of the large intestine through the habitual use of purgative drugs is to my mind a very great factor in causing appendicitis. A very large number of persons are apt to indulge over freely in the delicacies of the table and at the same time take an insufficiency of exercise and consequently resort is too often made to a habitual use of purgatives to prevent the effects of an overloaded system or to relieve constipation. With the large number of purgative drugs and quack medicines in the form of tablet, pill, or syrup, offered to the public the desired effect is easily obtained, for if one purgative tablet, pill, pilule, or syrup should prove ineffective another form can at once be resorted to without a thought for the ultimate future result. The drugs which are used in the compounding of such tablets and quack medicines are, for the most part, aloes, aloin, and cascara sagrada, all with a well-defined action, principally upon the large intestine, causing increased peristalsis. Senna and rhubarb are also akin in their action to the above-mentioned drugs and are also used to stimulate intestinal movement. Purgatives of this description must enervate and break down the tone of the bowel by repeated and frequent use. The constant resort to enemata must also have a like effect.

It is well known that purgatives lose their efficient power after a time of continued use and larger and larger doses or stronger and stronger drugs have to be resorted to, for the intestine becomes habituated to the requirement of a stimulant to enable it to perform its duty, even as the habitual drunkard requires increased potions to fit him to face his duties. There can be no doubt that progressive atony of the appendix takes place *pari passu* with that of the colon and the appendix being a rudimentary organ and a *cul de sac*, suffers more from the effects of atony than the rest of the intestine, which has a considerable driving power, so to speak, behind it. The appendix is not able to expel its contents, fæcal accumulation and concretion take place, and gaseous distension arises from decomposition of its contents and in course of time an attack of appendicitis occurs. Of course, the essential point is to establish such a habit of daily evacuation that there may not be accumulation of the noxious waste. Now, how is this to be effected? Most certainly not by the constant use of drugs which act upon the colon for the reasons I have stated above, as atony or degeneration due to over-stimulation may be engendered. If purgatives must be resorted to then the use of saline laxatives should be adopted. as their mode of action is to disturb the process of osmosis, bringing about an increased flow of secretion, rather than to stimulate peristalsis. The action of saline purgatives by disturbing the process of osmosis and causing an increased flow of water from the intestinal vessels into the cavity of the bowel brings about an increased liquidity in the stools. The salines are also absorbed by the blood vessels and partly carried into the general circulation and partly again excreted into the bowel by the intestinal glands, the result being a liquid stool in which peristalsis does not play an important part.

If drugs are used which increase peristalsis the appendix partakes in the general action and the habitual use of such drugs brings about atony and degeneration and the appendix loses power in emptying itself; but if saline laxatives, which disturb the process of osmosis, are resorted to the vessels and glands of the mucous lining of the appendix act in conjunction with the other intestinal vessels and glands, causing a watery flow, and consequently the flushing out of the appendix takes place. Have not saline purgatives been recommended in certain stages of appendicitis? Is it not good treatment for a patient suffering from chronic constipation to persist in the use of saline laxatives even to the verge of diarrhœa and in order that the lost tone of the bowel may be brought back to combine such laxatives with strychnia, or nux vomica, or iron, or belladona? For habitual constipation; instead of aloes, aloin, cascara sagrada, and quack aperient medicines which for the most part contain these drugs, are there not plenty of saline aperients which can be effectively used by the public in a general way?

To summarise, the increase in cases of appendicitis is due to the growing habitual use of such purgative medicines as cascara sagrada aloes, and aloin, which relieve constipation and empty the intestine by peristalsis, thereby causing loss of tone with all its concomitant symptoms, the remedy being—if drugs must be resorted to—the use of saline laxatives which disturb the process of osmosis and do not lower the tone of the bowel but act by causing an increased flow of intestinal juices.

I am, Sirs, yours faithfully,
FREDERICK W. ALEXANDER,
Medical Officer of Health of Poplar.

Public Health Offices, Bow-road, Bow, E., Sept. 18th, 1905.

THE MEDICAL MAN, THE CORONER, AND THE PATHOLOGIST.

To the Editors of THE LANCET.

SIRS,—I have read your annotation on the above subject in your issue of to-day and entirely agree with it. During the 28 years I have been coroner I have made it a rule to have called as witness the medical man who first saw the dead body. Both the reasons you give for this rule are well worthy of consideration.

I am, Sirs, yours faithfully,
A. F. VULLIAMY,
Coroner for Suffolk.

Ipswich, Sept. 16th, 1905.

To the Editors of THE LANCET.

SIRS,—Among the "annotations" in THE LANCET of Sept. 16th is one in connexion with a recently held inquest in the south-western division of London, which you conclude with the observation that "this case is another of those to which Mr. Troutbeck's *excuse* that special skill is needed in some cases in order to elucidate the cause of death can in no way apply." The word (which I have ventured to italicise) is happily chosen, for as it appears to me (and many other coroners) much excuse is needed before the line habitually taken by Mr. Troutbeck can be justified. There are many cases which form the subject of an inquest in which it becomes necessary to summon the assistance of an expert analyst to make a reliable investigation of the contents of the stomach, the bowels, or the blood. Would this afford an "excuse" for summoning such an expert witness in every instance? The contention would be absurd and is it not equally absurd to pretend that because an expert *pathologist* may be *sometimes* needed such should be *always* called? Surely the average medical practitioner who has obtained his diploma or degree, not without a stiff examination in pathology, may be trusted as fully as any specially skilled pathologist to conduct an ordinary post-mortem examination in order to establish (say, after *physical* injury) whether death was caused by the rupture of some important organ, fracture of the base, gun-shot wound producing hæmorrhage and shock, strangulation, foreign body in the larynx, or cut throat, and, say, after suspected natural causes, cardiac, pulmonary, hepatic, cerebral, or other internal mischief? But, further, it appears to me (and to many other coroners) that Section 21 of the Coroners Act of 1887, subsection 1, distinctly *implies* that the medical officer called in "*at* his death" should, in the first instance at all events, apply to those who first had the opportunity of seeing "the deceased," whether immediately before or after the last breath was drawn seems immaterial, for otherwise the words that follow would be devoid of meaning: "If it appears to the coroner that the deceased person was not attended *at* his death," *then* the coroner *may* summon "any legally qualified medical practitioner," &c.

However this may be, it has fortunately long been usual for the police to inform the coroner what medical man (if any) had recently before or "*upon the occasion*" of his death visited the deceased and equally customary for the coroner, in the absence of any special reason to the contrary, to summon such medical man as a witness. No medical coroner can entertain any doubt as to the propriety of this; the position and surroundings of the body, the *state* of the body at the moment of inspection, the presence or absence question although it helps, and if I am correct then the original pygmy language would be impressed on all the forest-dwelling negroes, as a basis first, for further improvements in sounds, &c., and more than this, wherever the pygmy first emigrated and settled he would leave some trace of his language. Those who have studied and written on the "science and origins" of language have discussed it without the ideographic symbols and their gesture-signs being even taken into account. These must take their root from inner Africa and not, as the Aryanists have laboured to show, in Asia. The inner African languages prove that words had earlier forms than those which have become the "roots" of the Aryanists; and there is no way of getting back to the origin of words except by learning once more to think in things, images, ideographs, hieroglyphics, and gesture-signs, and the primary modes of expression must be sought in their birth-place—and that is Africa—for here only shall we find the earliest rudimentary articulation of human sound, which accompanied gesture-signs and preceded verbal speech, and in these gesture-signs and ideographic symbols we find the earliest language is visible figures. How important, therefore, it is to get back to the original of all that has been pictured as figures made primarily by the earliest man and then to decipher the same. These are the true radicals of language without which the philologist has no final and adequate determinative and yet these have been left outside the range of discussion by the Aryan school, but the doctrine is prevalent in current philology, whilst the earliest sign language has been ignored altogether.

Whenever the ideographic signs of the oldest civilised nations can be compared evidence of the original unity becomes apparent, and if we take the earliest inhabitants of any part of the world we find from the skeletons that these were all of the same class—negroid. This is proved by the shape of the bones, the flattened tibia, the shape of the skull, &c. All their totemic signs, ceremonies, implements, gesture, language, &c., were the same and the farther we go back the nearer we get to some central unity. If we take the totemic ceremonies of the Australian aborigines, New Zealanders, North American Indians, Ainus, and Nilotic negroes, we find that these are all the same. Such numerous and striking similarities between these ancient totemic rites and early religious and burial rites, &c., the relics of which are to be found all over the world, conclusively prove that they must have been derived from one original, and there is no logic, fact, reason, nor any argument to be advanced which could prove that the various aborigines—the Australians, North American Indians, West Coast tribes, &c.—had evolved their religion and religious ceremonies from their own surroundings and experience. The sign for Amsu and the Khui Land and Zodiacal West found all over the world, dating back to the remotest antiquity, proves that Egypt must have been the original centre and that the pygmy was the "first man" making use of the sign as I have before depicted for their chief—which was afterwards carried throughout the world—and is found in many countries, as I have stated before. And, moreover, the "sacred dance," when the chief dances around in a kind of zig-zag circle, followed closely by another, and suddenly turns round and tries to overthrow him with his right foot and leg, but does not at first, then tries again and overthrows him, when the dance ends, is probably the origin of the great battle of Horus and Sut—the great fight between light and darkness which ultimately evolved into the great fight between the serpent, &c., which we find in every country and every creed from all times. But there is much more to learn from these little people, but one must live amongst them for some considerable time, as Sir Harry Johnston rightly says.

I am, Sirs, yours faithfully,
ALBERT CHURCHWARD

South Norwood, S.E., Sept. 18th, 1905.

THE CAUSATION OF APPENDICITIS.

To the Editors of THE LANCET.

SIRS,—The causation of appendicitis is still, I take it, a subject open to discussion. The usually accepted etiological factors, based as they are upon local variations in the appendix and its neighbourhood, cannot be regarded as satisfactory. It seems to me that to attribute appendicitis to any local cause is to disregard our experience of other acute conditions, such as acute sinusitis for example, when this disease occurs, as it often does, suddenly in a healthy young subject; is it put down to some local cause or is it ascribed to one or other of several well-known general processes, such as influenza? Of course, the latter.

As a matter of practice, when confronted with any acute local process in otherwise healthy young people it is an excellent working principle to search for some general factor, for apart from general diseases the tendency of the young organism is undoubtedly towards health, not disease. A case of acute otitis media comes before us and we suspect scarlet fever or influenza; or sore-throat is the most prominent symptom, and diphtheria or scarlet fever looms up; or there are several swollen joints and acute rheumatism is to be thought of, and so on. In short, neither otitis media, sore-throat, nor swollen joints are regarded as entities. Are we right in regarding appendicitis as such? Does it not seem more probable that it is simply one of the local manifestations of a general disease? I think so, and the burden of this letter is that appendicitis is one of the manifestations or sequelæ of influenza, a conclusion arrived at from many considerations of which the following are a few.

1. *The existence of a grand common factor in that both diseases virtually cover the same historical period.*—The key to the causation of appendicitis must lie in some factor which has been practically constant during the last 20 years and practically absent the previous 20 years; for appendicitis is essentially a disease of the last 20 years. Mr. S. Kellett Smith, in a letter in THE LANCET of June 27th, 1903 (p. 1839), suggested that the ingestion of chilled or frozen food supplied this factor, and his suggestion is certainly (as you have commented) a very plausible one. Nevertheless, I would suggest that the theory that influenza stands in some causal relation to appendicitis is even more plausible and that the facts of appendicitis, viewed from this standpoint, receive an explanation which has not hitherto been accorded them. The statement that appendicitis is essentially a disease of the last 20 years applies equally to influenza. True, there were epidemics of influenza before 1889, and Fitz described appendicitis in 1886, but these diseases were not then matters of daily practice as they are at present. I warrant it that if a general practitioner of 40 years' standing were asked what distinguished the last half of his practice from the first he would say the frequency of influenza and appendicitis during the second 20 years, in comparison with their rarity, or almost complete absence, during the first period.

2. *The analogy that exists between appendicitis and certain acknowledged influenzal affections, e.g., acute sinusitis, otitis media, and cerebral abscess.*—Appendicitis in its symptoms and course resembles many diseases which are admittedly manifestations of influenza, e.g., acute sinusitis. The analogy is really very striking if we look upon acute sinusitis as an entity as appendicitis has been regarded hitherto. Both are practically diseases of the last 20 years. Both begin suddenly with great pain. Both end sometimes in resolution, sometimes in pus formation. In both the local often obscure the general symptoms.

3. *The apparent alternation of influenza and appendicitis in the same patient.*—There has been an attack of influenza with, say, an eye complication. A year or so later the patient is thought to have another attack of influenza which turns out to be appendicitis, or the converse has occurred, one or several attacks of appendicitis without any suggestion of influenza, and then a definite attack of influenza with aggravation of the appendical symptoms.

4. *The agreement in the age incidence of the two diseases.*—Influenzal and appendical subjects, though not strictly limited to any age period, agree in being chiefly drawn from active young adults. Appendicitis is relatively rare in childhood, which is true also of influenza, and the latter disease, though more serious when attacking the aged, cannot be said to show them any preference, which is generally true of appendicitis.

5. *Influenza in its epidemic form is acknowledged to be sometimes responsible for a gastro-enteritis*, thereby showing that though known to prefer the respiratory tract, there is no obstacle to its affecting the alimentary canal.

The broad facts of appendicitis are—its prevalence of recent years; its occurrence in grades of severity, catarrh in one case and pus formation in another; its tendency to recur; and its preference for young adults. These it will be seen are also the broad facts of influenza and indicate that there is possibly more than a passing connexion between the two affections and that probably appendicitis in the majority last time[1] and to endeavour to convince him and your readers that the theory I have put forward explains the phenomena under consideration better than any other.

Mr Mummery's first point is to explain the absence of suffusion of the skin with blood as a consequence of dilatation of the vessels in the state of shock. He says that this occurs only "*when the general blood pressure is still high*" But a combination of a high blood pressure in the central areas with dilatation of the peripheral vessels seems to me very unlikely to occur under any circumstances. It is the tone of the distal vessels that keeps the blood pressure up, and the large vessels are so elastic that if a gradual relaxation of the arterioles takes place from any cause and ultimately becomes complete there must, I think, be a stage during which an obvious suffusion of the surface would be expected. Mr. Mummery wrote[2] "that the exhaustion of the vaso-motor centre is not a sudden process but takes place slowly, the vessels in the splanchnic area first becoming dilated. And in the earlier stages of shock contraction of the peripheral vessels occurs to compensate if possible for the fall in blood pressure brought about by the dilatation of the splanchnic blood vessels" But he also wrote[3] that "the first effect produced upon the blood pressure by injury to any part of the body richly supplied with nerve endings is a rise If the injury is continued or is very severe this initial rise is either replaced by a fall in blood pressure or is followed by a fall" From this I conclude that, in the first instance, the contraction over-compensates the relaxation of the arteries and this initial rise of blood pressure makes it the more difficult to understand the absence of a stage of suffusion of the surface if the arteries gradually dilate.

As regards the second paragraph of Mr Mummery's letter I regret very much if I misrepresented his and Dr G W Crile's views in discussing the change from contraction to relaxation of the vessels when shock occurs Dr Crile wrote that the cause of the fall of blood pressure, which he invariably found during severe shock, "must be an exhaustion of the cardiac muscle, of the cardiac centres, of the blood vessels or of the vaso motor centres,"[4] and, *by a process of exclusion*, he selected the last as the true cause Mr Mummery wrote[5] that "the essential factor in the production of the condition which we know as shock is a steady fall in general blood pressure. This fall in blood pressure results from exhaustion or fatigue of the vaso motor centres." I argue that an *exhaustion* of the vaso motor centre cannot arise and induce a relaxation of the vessels until the tendency to contraction of the vessels has been very powerfully excited Therefore an intense contraction of the vessels should first occur. If at some stage of the process relaxation takes place suddenly there should, I think, be clinical signs of such a violent change. The change, if it is due to *exhaustion* of the vaso motor centre, ought to take place suddenly, but if, on the other hand, we assume that it occurs gradually, then the vessels should at first return to their normal size. So long, however, as the degree of shock is deepening there is no evidence of a sudden change from contraction to relaxation, or of a gradual return to the normal If the vessels gradually dilate without any previous contraction, the condition can hardly be attributed to *exhaustion* or fatigue of the vaso motor centres

As regards the obvious condition of the splanchnic vessels I have no experience of experimental work but I have seen parts of the splanchnic area very frequently when patients have been in a state of profound shock, and I have never noted a dilatation of the small vessels which seemed to me to be caused by shock, whilst I have often observed that there was very little hæmorrhage so long as large vessels were not interfered with. When I have seen these parts suffused with blood by dilatation of the small vessels the cause has generally been some anæsthetic difficulty connected with the respiration. I do not deny—indeed, I asserted in my lecture—that the blood collects in the warmer parts of the body during the condition of shock,[6] but my contention is that "in so far as an unusual amount of blood may be found in the splanchnic area, it is forced rather than drawn into the central parts"[7] This to some extent answers Mr Mummery's question as to where the blood goes. But if he will read my paper carefully[8] he will see that I cannot agree with him that the blood is incompressible for the purposes under consideration. He pointed out in his lectures that as shock develops the specific gravity of the blood is raised, and this raised specific gravity seems to me quite inconsistent with the view that the vessels are dilated It indicates rather that the blood is under unusual pressure The change must, I think, be due to a squeezing of the plasma from the vessels into the tissues The plasma has a lower specific gravity than the blood There is no doubt in my mind that if life continues and if this raised specific gravity of the blood is not quickly altered by a return of plasma to the blood-vessels it must very soon lead to a diminution in the number of blood corpuscles and thus a certain amount of blood will be destroyed

Mr. Mummery finally says that the chief argument against the theory I have put forward is found in the action of adrenalin and similar drugs but I have given an explanation of this action which he does not controvert Adrenalin is the strongest vaso constrictor known and if the superficial vessels are intensely contracted, as I believe they are in the state of shock, whilst the internal vessels are full, adrenalin can have little effect on the already intensely contracted superficial vessels but may powerfully affect the somewhat dilated internal vessels and thus may raise the blood pressure in the large systemic arteries exactly as pressure on the abdomen does The effect is very temporary and I think it may give rise to great danger from cardiac overwork. Mr Mummery does not mention the chief basis of my criticism of the views he advocates When Dr. Crile arrived at the conclusion that a fall of blood pressure must be due to relaxation of the arteries from exhaustion of the vaso-motor centres he did so by a *process of exclusion*, but he did not take into consideration all the possible causes of lowered blood pressure At least he did not mention the possibility that contraction of the vessels may also cause a fall of blood pressure. This contraction of the vessels is the explanation of the vascular phenomena of shock which I advocate and I hope that those who are interested in the subject will carefully consider the evidence I have brought forward.

I am, Sirs, yours faithfully,

Portman street, Sept. 16th, 1905 JOHN D MALCOLM.

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[1] THE LANCET, Sept. 16th, 1905, p 802

[2] Ibid, p 802.

[3] THE LANCET, March 25th, 1905, p 776.

[4] Blood Pressure in Surgery, p 401

[5] THE LANCET March 18th, 1905, p 699

[6] THE LANCET, August 26th pp. 576 and 579

[7] Ibid., p 573

[8] Ibid, p 577

VARICOCELE—WHAT OF IT?

To the Editors of THE LANCET.

SIRS,—I have for long past desired to initiate a discussion in your columns regarding varicocele with the object of eliciting the views of leading surgeons as to how far, if at all, it is a disability or disqualification for the public services I have the more reason for requesting expressions of opinion in view of the fact that for a period of five years or more I have been president of the army medical boards for the examination of candidates for admission to Woolwich and Sandhurst, and of university men, militia and yeomanry officers and candidates for commissions in the regular forces, and have seen in those five years no small number among these young men and lads rejected on account of varicocele. The subject of varicocele has also presented itself closely to my notice as senior medical officer of recruiting in the London area (headquarters at St. George's Barracks). As to my own views on the subject I cannot do better than give an extract of a short article I wrote in volume I, page 181, of the *Journal of the Royal Army Medical Corps* with the caption (as our American friends term it) 'Observations on Some Points in the Medical Regulations for Recruiting —

In respect of varicocele the following remarks were made in a report on recruiting by the late Sir Thomas Crawford[1] in the Army Medical Report for 1862 'With a view of determining the extent to which lesions in the genital organs are disqualifications in a soldier, it may be well to premise that it has been generally held by army surgeons that recruits having any disability which can by any possibility interfere with the free motion of the body or extremities or which may give colour to the alleged existence of pain should be rejected This well grounded opinion rests on the accumulated experience of the department and is supported by the fact that indifferent characters having such disabilities never fail to allege their existence either as an excuse for the non performance of duty or for the avoidance of punishment So long as a soldier can demonstrate the existence
it be impracticable to punish him
the one hand, or the penalty of
contingent circumstance and not
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[1] Director General A.M S, whose report was written when he held the rank of staff surgeon and was engaged in recruiting duties.

of ephemeral signs which may have vanished before the "expert pathologist" can be obtained, all point to the value of the *earliest* medical witness on the scene being the one most likely to supply the needful information. And, curiously enough, in another column of THE LANCET this very week is to be found an instance bearing strongly on the point,[1] in which you say: "And it would have been concluded that he met his death by drowning had not the fact been noted by the medical witness that the eyelids were closed when the body was discovered." If the "medical witness" had been Mr. Troutbeck's "skilled pathologist" (who would have had no opportunity of seeing the deceased till he received Mr. Troutbeck's order to make a post-mortem examination) this fact could scarcely have been "noted by the medical witness"—but it is needless to multiply examples. Mr. Troutbeck's view of the coroner's "excuse" is doing yeoman service for the medical profession, and the constantly increasing numbers of medical practitioners who are selected by the county councils (in preference to legal gentlemen) to fill the important office of coroner bear witness to the growing recognition among the educated classes that nine times out of ten "the medical cause of death," which it is the first duty of the coroner to investigate, is best performed by one who can interpret the technical terms, often *necessarily* made use of by the medical witness, to a jury of average British laymen.

I am, Sirs, yours faithfully,

Sept. 19th, 1905. MEDICAL CORONER.

PS.—I hope you will not think it presumptuous if I add (after reading your article on two cases of recent inquests, the one in South Staffordshire and the other in Lancaster, under the heading "Medicine and the Law") that in my opinion neither would the view that "it was idle to suggest insanity" have been expressed in the one, nor an order for exhumation been publicly called for in the other, had the respective coroners been members of our profession. For in the one the letter laid before the jury would have contained ample evidence to the medical mind of the insane condition of the writer at the time; and in the other I fancy that if the Home Secretary had been (privately) made acquainted with the facts it does not seem unreasonable to think he might not have insisted on exhumation, provided no criminal responsibility had been suggested at the preliminary investigation before the deceased coroner and his jury. Is it conceivable, for example, to take another instance, that the Home Secretary in these days of preventive medicine would censure a coroner who should excuse his jury (of 12 or 15 fathers of a family may be) from viewing the body of a child whose violent death (during tracheotomy, for instance) had revealed the fact that death was due to disease of an eminently infectious character, such as diphtheria? The consequence of an inquest having been held without "the view"—when ample evidence of "identity" is forthcoming—is that the inquest may be "quashed." What reasonable ground for "quashing" can be discovered if no criminal liability had been brought home to anyone by the verdict of the jury?

ANGINA PECTORIS AND ALLIED CONDITIONS.

To the Editors of THE LANCET.

SIRS,—On two points arising out of Dr. T. Oliver's lecture on this obscure subject, published in THE LANCET of Sept. 16th, I desire, with your permission, very briefly to remark. One of these concerns the now well-recognised work of another. I am aware that in a lecture it is not possible to deal with matters historical at any length, but the omission of some names is as inexcusable as the production of *Hamlet* with the melancholy prince left out. After reference to the fact that arterial thrombosis may be attended with pain, Dr. Oliver quotes Charcot's interpretation of these phenomena and his introduction of the term "intermittent claudication," as possibly explaining angina pectoris in some cases. That this is a feasible hypothesis, possibly correct in some cases of an affection which may be symptomatic of many conditions, I am not at present concerned either to deny or affirm. The point I would refer to is that this interpretation was advanced as a brilliant suggestion nearly a century ago by Allan Burns of Glasgow, who must in justice be allowed to have anticipated later writers in advancing the occlusional theory of angina pectoris and whose name one would have expected to transpire in this connexion. In his little book, still so valuable because filled with observations culled at first hand from nature, he deals sufficiently fully with the subject.[1] The explanation was then hypothetical and it is no more now, but to Burns belongs whatever credit there may be in having advanced it.

The other point I refer to less willingly, because it is distasteful to call attention to one's own work. Dr. Oliver, like most writers on this subject since Edward Jenner's day, discusses the question of coronary calcification in relation to angina pectoris. The occasional association of these states is, of course, incontestable. No less incontestable is their frequent dissociation. Quite as incontestable to my mind is the fact that the subject has not been investigated in such a manner as to lead to any definite conclusion on the point. The minute microscopical examination of such vessels in these cases has rarely been undertaken, judging from the reports of necropsies, and they occur quite sufficiently often, both in private and in hospital practice, to have afforded opportunity for such examination. In one of a series of lectures on Cardiac Pain, which I delivered from the same rostrum as that from which Dr. Oliver gave the lecture under discussion, I related some particulars of a case of this kind which occurred in my clinic at the Great Northern Central Hospital and in which I was able to determine what was, to my mind, a significant fact whatever its value. My lectures were fully published, with illustrations, in THE LANCET of Nov. 1st, 8th, 15th, and 29th, 1902. The patient had frequent attacks of angina and died in one of them. The necropsy revealed calcareous arteries, a portion of which I decalcified and numerous sections of which I examined microscopically. Some of these, fortunately, cut across a small intravascular aneurysm in the neighbourhood of which there was a nerve ganglion and neuritic fibres which appeared to me to be an explanation of the very frequent attacks of angina which the patient exhibited both when recumbent and when erect. I carefully refrained from being dogmatic in asserting a necessary connexion between these states but confess that no other condition seemed to me to explain the situation so well and I took it as a type of a condition which has admittedly more than one basis. Whether I was correct or in error in doing so can only be decided by a similar examination of calcified coronaries in cases both associated with, and free from, angina pectoris. So far as I know, my case at present stands alone.

I am, Sirs, yours faithfully,

ALEXANDER MORISON, M.D., F.R.C.P. Edin. & Lond.

Upper Berkeley-street, W., Sept. 17th, 1905.

To the Editors of THE LANCET.

SIRS,—In the course of his interesting and instructive remarks in THE LANCET of Sept. 16th on the treatment of angina vera Dr. T. Oliver states that of all drugs that give relief there is none that can compare for immediate action and efficacy with nitrite of amyl, while in some cases of angina vera nothing short of the administration of morphine or opium will give relief. There is one drug which compares favourably with nitrite of amyl in the treatment of angina pectoris and that is chloroform. The inhalation of chloroform removes the strain from the heart by vasomotor dilatation of the arterioles much more safely and effectually than does nitrite of amyl. Moreover, chloroform has none of the disadvantages of nitrite of amyl and as it abolishes pain almost immediately neither morphine nor opium is necessary. The inhalation of chloroform need not be pushed beyond the stage of unconsciousness and, unless the heart is actually failing, it always gives complete relief.

I am, Sirs, yours faithfully,

Harley-street, W., Sept. 19th, 1905. EDWARD LAWRIE.

THE CONDITION OF THE BLOOD VESSELS DURING SHOCK.

To the Editors of THE LANCET.

SIRS,—I agree with Mr. J. P. Lockhart Mummery that a full discussion of our divergent views on this subject would take up more of your space than we can hope for, but I should like to be permitted to reply to his letter in your

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[1] THE LANCET, Sept. 16th, 1905, p. 842, The Eyelids after Death.

[1] Observations on Diseases of the Heart, &c., Edinburgh, 1809, p. 138.

THE ORGANISATION OF THE MEDICAL PROFESSION.

(FROM OUR SPECIAL COMMISSIONER.)

Liége, August, 1905.

CONGRESS OF THE BELGIAN MEDICAL UNIONS.

A SMALL but interesting Congress has been held at Liége during the month of August under the name of the National Congress of Professional Medicine. Practically this meant medical ethics and economics. The editor of *Le Scalpel*, Dr. L. DEJACE, presided. The Government patronised the Congress and was represented by Dr. El. Voituron from the Ministry of Agriculture, which has among its duties superintendence of the sanitary service of Belgium. Though many influential medical men and medical societies supported this Congress it must be confessed that the number of the "adherents" and subscribers who actually attended was not large. The Congress met in the hall of the Academies at the University of Liége and the first question discussed was introduced by Dr. J. P. NUEL, professor of ophthalmology. It dealt with the new Belgian law of Dec. 24th, 1903, by which employers are compelled to provide medical treatment for their workers when accidents occur. Dr. Nuel urged that the injured workers ought to be allowed to select their medical attendant. In France this was permitted. In Germany, for some 12 years, the medical profession had struggled in vain to establish this principle. The last congress where the matter was discussed is said to have been attended by 4000 German medical practitioners and the great majority voted in this sense. But in the Belgian Parliament it was argued that the workman should not choose his medical attendant because his employer would know better whom to select and, because, if the workmen selected their medical attendant, the expense would be much greater. Also it was said that as the employer had to pay he ought to be able to choose which surgeon should be engaged, just as he chose his own engineers and others whom he employed. In reply, it is pointed out that the engineers watch over the employer's property but the medical man is called upon to attend to the health, to the very existence, of the workman. The employer might as well impose a tailor, a baker, a grocer on his workmen on the ground that indirectly he pays them all. Again, it is essential that all patients should be treated by medical attendants in whom they have confidence, and this is most likely to be the case if they themselves choose their medical attendant. It appears, however, that figures were quoted in the French Chamber of Deputies and reproduced before the Belgian Chamber of Representatives which caused much alarm. These related to five insurance companies that covered the employers' liabilities and showed that a fifth, sometimes a fourth, of the total sum allotted for accidents was spent in paying fees to the medical attendants. Instead of considering this a proof of the great services rendered by the profession it was interpreted as signifying that the medical fees paid were very high. As a matter of fact, they only amounted to from *5d.* to *6d.* per day per patient, medicine included. Then it must be borne in mind that in France during the first four days, and in Belgium during the first seven days, no payment whatever is made, either to the workman or his medical attendant. It is only when the accident is sufficiently severe to require treatment lasting longer than this period that compensation is given. As slight injuries are of frequent occurrence it has been reckoned in Germany that they represent nearly half the amount of medical attendance given. Other statistics, notably from a benefit society at Mons, all go to show that there is very little danger that the medical men who attend in cases of accidents will be over-paid. On the contrary, they are usually and scandalously under-paid.

At the Liége Congress it was stated that the colliery surgeons in the surrounding coalfields only earned from £80 to £120 a year all told and that on an average they did not receive more than *2d.* per consultation. In such circumstances the necessity of organisation is very evident. The working classes have so far organised that they have compelled the Government to enact laws in their favour, but while these laws were being discussed the medical profession had no organisation capable of protecting its interests though these were equally at stake. And the matter will not end here. The new law compels the employer to pay compensation and the cost of medical attendance in case of an accident. Such payments are to continue, if necessary, for six months. After that the patient becomes an ordinary or chronic patient and is no longer treated as a case of accident. Though theoretically every Belgian is entitled to gratuitous medical assistance if he has no means of his own this medical service is so badly paid and organised that it is ineffective. Therefore the new law which provides medical treatment and sick allowance in case of accidents will probably be supplemented by another similar law to meet cases of ordinary sickness. If the insurance companies or the employers are also to have the choice of the medical attendant for ordinary cases of illness then what will there be remaining for the independent practitioner? Nearly the whole of the working classes will be withdrawn from the domain of general medical practice. They will all be attended by the salaried servants of the employers or of the insurance companies. In view of such a contingency the Liége Congress insisted that whoever pays, still it shall be the patient himself who must be allowed to select his medical attendant.

In raising this question the Congress at Liége has rendered good service It is a problem that interests not only the Belgian practitioners: in all countries there is a strong tendency in favour of legislative interference in such matters. The great example set by Germany with its compulsory insurance laws is being followed by other nations. Each country will introduce modifications to suit local conditions, but something more or less complete or incomplete is likely to be attempted by nearly all the legislatures of civilised countries. In this the interests of the medical profession are sure to be sacrificed unless the profession is able to organise and to make its voice heard. After hearing Dr. Nuel's report a brief discussion ensued and the Congress eventually unanimously adopted a proposition demanding that the law should be so amended as to enable the victims in cases of accidents to select the practitioner by whom they desire to be attended.

The next question related to the choice of medical experts when a contest arose in the law courts as to the injury done by an accident in a mine, factory, or workshop. At first it was proposed that the Belgian law should be similar to the French law and declare that the medical man attending the patient, whether chosen by the employer or by the patient himself, could not be appointed as expert. Nor should the medical practitioner appointed by the employer to report on the condition and the treatment of the patient be admitted as expert in the matter under judgment. To this rule the Belgian Government had assented and then it altered its mind, leaving the judge free to act as he thought best. But then if the judge calls upon the medical attendant to act as witness the latter exposes himself to be prosecuted for revealing professional secrets. To be safe the medical attendant must obtain a written permission from his patient and if such medical testimony is not favourable to the patient's claims then the latter may refuse to give the authorisation. Evidently the intervention of an impartial outsider is needed; but this may entail extra expense and on all sides the greatest fear was manifested of spending more than can possibly be helped. No motion, however, was submitted on this subject.

Then a nice point was raised which applies to all countries. A workman is injured. His employer must pay the medical attendant; but the injured man may be taken to a hospital where no charge is made. The Congress adopted a proposition to the effect that the medical attendant should, in all cases, be paid, whether he be the house surgeon at a hospital or in private practice. The money is there, it has been provided for by law, and why should it not be paid because it so happened that it was more convenient to carry the injured man to a hospital instead of taking him to his home?

The question of organising medical unions or syndicates was then discussed and it was felt that medical men should avail themselves of all laws facilitating the organisation of crafts, trades, and professions. By the Belgian law such unions are given facilities for insurance, within certain limits, on very advantageous terms and with a State guarantee. There is no reason why medical men should not profit by this law; it would be a great boon to the poorer practitioners. The Congress, after hearing a report on the subject read by Dr. LOONTJENS, unanimously adopted the following motion:—

> This Congress of Professional Medicine recommends medical clubs or societies to study the law of March 31st, 1893, on professional or trades unions. The medical societies would be well advised if they followed the example of the professional or trades unions and inserted

On the above I wrote as follows: "Now, what does the closing sentence of this extract amount to? To my mind, and probably to the minds of other medical officers, it amounts to this, that, in fact, varicocele scarcely at all affects the ability of a soldier to perform all his duties. I may ask, Have army medical officers ever had officers or soldiers under treatment for varicocele or been obliged to excuse them from any duty on that account? In an experience of *30 years'* service I *never* treated an officer or soldier for varicocele and it would be futile to contend that during this period there did not exist many hundreds who must have had the disability."[2] After my article appeared other army surgeons recorded experience different from mine. Of course, the foregoing transcriptions refer to *recruits*. I am, however, now concerned only with candidates for commissions in the army. It will be interesting to your readers in the civil profession if I quote the phrasing of the army medical regulations for the guidance of medical officers serving on medical boards for the examination of candidates and also for recruits. The former reads thus: "That he [the candidate] does not suffer from ...... varicocele, varicose veins in a severe degree ......, a slight defect if successfully cured by operation *is not a disqualification*"; *in the latter* "varicocele beyond a limited extent." That is, the conditions above are considered disabilities within the limits laid down.

Now in support more or less of the views I have expressed I quote the opinion of a senior surgeon of one of the leading hospitals in London who writes to me as follows:—

> I have been lecturing at —— hospital for the last 20 years on the absurdity of calling or treating varicocele as in any sense a disease. I have as surgeon to —— never seen a single instance of dilated veins in the cord producing any real trouble. I have on this account always refused to operate or allow my house surgeons at —— to think of interfering with the cases. The condition is a physiological one and can be seen in all the sheep race of animals (ovis) at the season when they are not rutting. The dilatation retards the flow of blood through the testicle and prevents the testicles being active when not required.

A few days ago I was discussing the subject of varicocele with a distinguished officer of the Indian Medical Service who recently held not only a high position at the India Office but also previously one in a teaching university hospital in India and he has kindly permitted me to record his opinion. It is this: that in the course of 26 years of an extensive and varied practice he recollects advising an operation for varicocele but once, he now forgets why. He does not consider varicocele a disability, and if he were to recommend an operation it would merely be to get over an official regulation which debars admission to the public service on account of varicocele.

It is not necessary, Sirs, for me to point out that the results of operations for varicocele are far from being uniformly satisfactory and that occasionally disastrous consequences have ensued—to wit, atrophy of the testicle. In a very large number of the cases put back by army medical boards for operations, apart from the chronically enlarged testicle which follows, the parents or guardians of the lads can ill afford the expenses attending an operation and detention in a home, and I have heard bitter complaints on this subject. It is, indeed, possible that in a highly neurotic or neurasthenic lad or young man varicocele may give rise to trouble; but I contend that because such a state may exist in an exceptional case it is unnecessary, if not unfair, to subject candidates to the expense and risk of operations as we so frequently do. Not long ago a young officer in the militia who had a large varicocele asked me about competing for the regulars; I advised him not to do so as he would surely be rejected for the varicocele and be put back for operation which I certainly should not advise him to undergo. This young officer subsequently went to Nigeria and did some stiff marching and hard work in that trying climate and has returned after more than a year without a day's sickness or any inconvenience from a very large varicocele.

The proposition I offer is this: if we honestly believe varicocele to be a disqualification for the army let us reject the case at once and let us not commit ourselves to recommending any operation and provisional entry into the army after it *if only it be successful* (see extract of regulation quoted above), for the military authorities have numbers of candidates on the qualified list ready to replace rejections on medical grounds. Why cannot we in the army follow the rule laid down in the Admiralty medical regulations—viz., reject cases of varicocele offhand and have nothing whatever to do with recommending operations and provisional entry thereafter? I am informed that naval surgeons are emphatic and relentless in excluding candidates or recruits the subjects of varicocele in any form—I assume there must be some strong grounds for this. If so, I trust that naval medical officers will take part in any discussion which may follow publication of this letter. We in the army have of late copied the Admiralty in our highest institutions; let us, then, copy their medical system, for presumably the military *officer is required to be as efficient as the naval officer.* The former certainly serves abroad a great deal and undergoes the same risks of service in all climates.

In conclusion, as I have stated that during my experience I have seen deplorable results of operations recommended, I shall ask the forbearance of your readers while I quote two examples. A B was operated on for varicocele of the left testicle, which atrophied; subsequently varicocele developed in the right. C D, a successful competitor, was rejected for undescended testicles; he was subsequently operated on by an eminent London surgeon. The lad competed a second time[3] after this and was again successful. On being re-examined *by the Army Medical Board the scrotum was found* to contain two pea-sized bodies on each side supposed to be testicles. We army medical officers must apply the War Office regulations no matter what our private opinions may be.—I am, Sirs, yours faithfully,

FRANK HOWARD, M.D. St. And.,
Colonel, Army Medical Staff (R.P.); Senior Medical Officer, Recruiting London Area.

Sussex Mansions, S.W., Sept. 15th, 1905.

THE DEATH OF A CORONER LEAVING AN INQUEST UNFINISHED.

To the Editors of THE LANCET.

SIRS,—In a short article under the heading of "Medicine and the Law" contained in THE LANCET of Sept. 16th you refer to a case of exhumation of a dead person in South Staffordshire which arose through the adjournment of the inquiry and the sudden death of the coroner. As I am the deputy coroner referred to, perhaps you will excuse me if I point out that your writer laboured under some misapprehension of the reason of the exhumation and the requirements of the law. I did *not* consider it necessary that the jury should again view the body, nor did I even suggest the possibility of the law requiring it. I merely conformed to the law in viewing the body myself. The jury having once viewed, the law, so far as they were concerned, was satisfied, but a coroner cannot hold an inquiry without viewing and the coroner who had previously viewed was dead. I may add that my own opinion as to the viewing of bodies is that *it should* be left entirely with the coroner to decide whether the jury should view or not view.

I am, Sirs, yours faithfully,
ALBERT A. BETHAM,
Acting Coroner for Staffs.

Sept. 19th, 1905.

FAKIRS AND ANÆSTHESIA.—The Medical Council of the Russian Ministry of the Interior has forbidden, says the *Soro*, that Indian fakirs should hold *séances* for the purpose of inducing hypnotism or anæsthesia.

THE METROPOLITAN ASYLUMS BOARD AND THE TREATMENT OF ITS ASSISTANT MEDICAL OFFICERS.—At a meeting of the Metropolitan Asylums Board held on *Sept. 16th*, the asylums committee reported that it had received the resignations of three assistant medical officers employed at Darenth Asylum as a protest against the general conditions appertaining to their position and asking that an inquiry should be made into the grounds of their protest. The committee further stated that all the correspondence in connexion with the resignations, together with communications from the officers which had appeared in recent issues of THE LANCET, had been read and considered and it had appointed a special subcommittee of nine members to inquire into the whole of the circumstances which have led to the resignations. The action of the committee was approved and the report was adopted without discussion.

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[2] Many medical officers of long service have borne me out in this experience.

[3] Successful candidates if medically rejected are obliged to compete again.

there would be no necessity to pump the sewage; a saving would in that case be effected of £600 per annum. A good deal of the plant at present in use at the sewage farm, including filter materials and beds, will have to be sacrificed under the scheme, the whole cost of which is estimated at £19.000. The council will be recommended at its next meeting to adopt the scheme and the fact that for some months past an effluent has been obtained by the method suggested capable of sustaining fish will no doubt have its proper weight.—Difficulty has arisen at Worcester in connexion with the payment for the outfall sewers and the tunnel beneath the river, owing to the original estimate having been exceeded by more than £4000, despite the fact that the tunnel and the two sets of iron pipes had been reduced, the former from 8 feet 6 inches to 6 feet 6 inches and the iron pipes from 2 feet 6 inches to 1 foot 8 inches, a change which, it was thought, would effect a saving of at least £1200. The amount in dispute has been referred to arbitration.

The Small-pox Epidemic at Nuneaton.

The cases of small-pox at Nuneaton now number over 60. It was hoped that the epidemic would be confined to one part of the town but unfortunately cases of the disease have made their appearance in several directions. A large proportion of the patients are unvaccinated children.

Local Guardians and the Tramp Question.

At the last meeting of the Birmingham board of guardians a letter was read from the clerk to the King's Norton board of guardians suggesting that a conference should be held by the Birmingham, King's Norton, and Aston boards to consider the tramp question and discuss the advisability of the continuance of three separate tramp wards for the city and its immediate surroundings. It has been pointed out that it is not the feeding of the tramps which is the important expense, for the cost of bread and cheese is 2½*d.* per head, and if gruel is also given it only costs another 1*d.* each. The chief cost is in providing sleeping accommodation and in keeping the casual wards clean. It is expected that five representatives will be appointed by each of the three boards to confer as to the advantages (if any) which have resulted by combined action on the part of neighbouring unions in other large centres of population. From the financial statement of the Birmingham board of guardians for the year ended Lady-day last I learn that the daily average of workhouse inmates during the year was 1651, the highest number that has been maintained since the completion of the infirmary. The average number of inmates in the infirmary was 1040, as against 1088 in 1904. The expenditure on vaccination during the year was £1903, being £205 less than the previous year. The lunatics chargeable to the parish cost £25,160. In the discussion on the statement it was stated that the workhouse numbers had increased 36 per cent. and the expenditure less than 35 per cent. during the last seven years. The Aston board of guardians has practically decided to purchase Whitton Hall as a home for "ins and outs" children. The building will cost £2650 and it is expected to provide accommodation for 60 children. The Birmingham board of guardians have decided to seek an expert opinion as to the marketable value of the proposed site at Summer Hill for a home for "ins and outs."

A Milk Problem at Wolverhampton.

A case of considerable interest to farmers and dairymen was brought before the stipendiary magistrate of Wolverhampton a short time ago. A dairyfarmer was charged with selling milk from which 20 per cent of the original fat had been abstracted. It appeared, however, from the evidence that samples of milk taken directly from the cow and examined at once showed the same deficiency of fat, so that there was no question of improper treatment of the milk. It was further shown that the afternoon and evening milk was considerably richer in fat than was the morning milk, the cows being milked three times a day. The case was, of course, dismissed.

Handsworth Health Report.

The medical officer of health of Handsworth has just presented his annual report. The births registered during the year were 1436; of these, 755 were males and 681 were females. The birth-rate was 23·4 per 1000. The death-rate was 12·2 per 1000. The infantile death-rate was 133 per 1000. The epidemic death-rate was 1·3 per 1000. Interesting figures are included in the report showing the rapidity with which the district has grown. In 1871 the population was 14,947; in 1904 it was 61,500; and it is now numbered by the Registrar-General as one of the 76 great towns.

Scarlet Fever in Birmingham.

Mr. Alderman Cook, presiding at a lecture lately delivered on the subject of scarlet fever, gave some interesting information concerning the disease in Birmingham. During the last 15 years the number of cases and deaths has been as follows:—

—	Cases.	Deaths.	—	Cases.	Deaths.
1890	2995	209	1898	1320	47
1891	1466	91	1899	1255	29
1892	1413	63	1900	2063	93
1893	1614	68	1901	3314	156
1894	1788	75	1902	5044	293
1895	2964	133	1903	2335	144
1896	3399	154	1904	1659	65
1897	1929	95			

The total number of cases was 35,053 and the total number of deaths was 1720, the percentage of deaths to cases being 4·9. As shown by the figures quoted, there had been a great increase of cases every sixth year—viz., in 1890, 1896, and 1902. Although scarlet fever caused so large a number of cases the deaths were not nearly so numerous as from most of the other zymotic diseases. During the past ten years the average number of deaths from those diseases had been as follows: small-pox, 3; measles, 226; scarlet fever, 121; whooping-cough, 256; diphtheria, 149; typhoid fever, 100; and diarrhœa, 698. The poorest wards in the city were not the districts where scarlet fever was most prevalent. The children in the slum seemed to enjoy an immunity from the disease which the better-kept children in the other districts did not, but while the slum children appeared to be less susceptible they were at the same time liable to take it in a more virulent form than were the others. 87 per cent. of the cases occurring in Birmingham have been treated in the isolation hospital.

Sept. 19th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

"Beautiful Oldham."

IN what may be called prehistoric times, before Oldham existed (speaking Hibernically), it may have been, and probably was, beautiful, but since man built tall chimneys, used steam engines, and burnt smoky coal lavishly the phrase "beautiful Oldham" has been supposed to be ironical or contemptuously satirical. But even in Oldham there is a craving after beauty and a society has been in existence for the last three years and was mentioned in these columns a year or two ago the object of which is to make the ugliness of a manufacturing town less ugly. Those who have ever been at an Oldham railway station will remember the black unloveliness around them, but at one of them they may now see "the walls and pillars brightened by little wicker baskets filled with vivid green." This has been done by the voluntary efforts of the porters. One "court" in a slum of which the chief feature was an old midden, decorated with derelict pots and pans, is now a small green garden. Shrubs have blossomed in it and are tended by the boys and girls of the court who have by the influence of the society become so far civilised as to work with a will and to watch with delight the growth of the young plants from seeds of their own sowing and to fight for their protection. This invasion of beautiful things into the realms of ugliness roused the envy and the anger of neighbouring courts, and it was only after "fierce battles" that the lovers of beauty were left to enjoy their handiwork in peace. These are illustrations of the good that is gradually being done. Among the objects of the society are the preservation of existing features which add to the attractiveness of the town; the utilisation of waste places for tree-planting, &c.; the cultivation of shrubs and flowers in the spaces adjoining public buildings, schools, and mills; the cultivation of the love of nature and gardening in school

> in their statutes a clause establishing a system of conciliation and arbitration for the settlement of differences or litigation that may arise between members of the profession or with private individuals but that interest the medical profession. This Congress further urges the importance of keeping young medical practitioners well informed of their duties towards their fellow members of the profession:—1. By lessons and lectures on deontology given at the universities. 2. By the distribution of codes of deontology, drawn up by the examining juries and medical committees.

When this motion was carried, Mr. ADOLPHE SMITH was invited by the President to give an account of the organisation of medical unions in England. As Liége is a great mining centre, Mr. Smith insisted especially on the success of the Northumberland and Durham medical unions in raising the payment made to the colliery surgeons from 6*d*. to 9*d*. per fortnight. The PRESIDENT expressed the gratification with which the Congress heard of the good progress achieved by its medical brothers of Great Britain and a very cordial vote of thanks was given to Mr. Aldolphe Smith for his encouraging communication.

On the second day a report was read, and a discussion followed, on the purely local difficulty which exists on the Belgian frontier. It sometimes happens that the nearest practitioner lives on the other side of the frontier and thus French and Belgian medical men are constantly crossing the frontier and interfering with each other's practice. This has led to many diplomatic communications, conventions, and complications, and yet none of the parties concerned seem satisfied. Now a new factor is coming on the scene. The Congress resolved that the Belgian medical unions should appeal directly to the French medical unions and that they should jointly endeavour to find a solution of the difficulty and invite their respective Governments to act accordingly.

The question of the inspection of schools was next introduced but not without protest, for it was considered a special matter, not directly concerning professional medical interests. Nevertheless, on the proposal of the PRESIDENT the following motion was adopted:—

> That the medical inspection of schools and school children being a public service interesting the community at large, the Congress expresses the desire that this service shall be organised throughout all the schools of the country and confided exclusively to medical men paid from subsidies given by the State, the provincial, or the communal authorities.

This resolution is important, for its application would mean that in all matters relating to the health of the children the secular sanitary authorities would control the clerical schools.

The next important matter discussed was what in England would be described as the medical treatment of paupers. There are in Belgium no workhouses and no Poor-law system but each commune is supposed to appoint and pay a poor man's medical attendant, who must attend those who cannot afford to pay a private practitioner. How this is done was shown by figures given by Dr. Deneffe concerning 264 communes of Eastern Flanders. Of these, 21 only paid their medical officer for the poor £2 per annum, 22 communes paid £3, and 33 paid from £3 to £4. Then 66 communes paid from £4 to £8. More than half the communes paid from £2 to £8. There were 47 communes giving from £8 to £10, 35 from £12 to £16, 25 from £16 to £20, six from £20 to £24, and 10 from £24 to £28. One commune paid £30, one £34, and one £36. Where, however, the larger sums are given the work is sometimes divided between two practitioners. For such inadequate remuneration the poor man's medical attendant must attend lying-in cases, provide bandages, antiseptics, and, indeed, if he does his work fully it will cost him as much as, or more than, he receives. Insufficient as is this payment a public inquiry made in 1895 revealed the fact that in the surrounding districts of Brussels, Charleroi, Huy, and Liége out of 345 communes only 85 had appointed a medical officer for the poor. As for payment in proportion to the population, there is no rule. Thus at Angleur it was £4 per annum per 1000 inhabitants; at Awirs, £2 per 1000; at Flémelle-Grande, £4 per 5000 inhabitants; at Vevegins, £3 for 1700; and at Theux £4 are divided between two medical practitioners, and the population is set down at 5000 souls. After hearing these and many other details the Congress adopted a proposition stating that the organisation of the service for giving medical assistance free of charge to the indigent was a matter of urgent necessity. The poor should, the proposition went on to say, be free to select the medical attendant they preferred. The latter would be paid by the local authorities according to a tariff to be prepared and drawn up by the Academy of Medicine, the Superior Council of Hygiene, the medical commissions of the various provinces, and the Federation of the Medical Unions of Belgium.

A few other matters of minor importance were discussed and the labours of the Congress concluded.

MEETING OF THE BELGIAN MEDICAL PRESS ASSOCIATION.

Those members of the Congress who were medical journalists remained and a meeting of the Belgian Medical Press Association was held. The Executive Committee or Bureau was re-elected and consists of Dr. Dejace, president; Dr. de Bussher, vice-president; and Dr. Pêchère, secretary. The latter gentleman, it will be remembered, is treasurer of the International Medical Press Association. Then there was some discussion concerning the forthcoming International Congress of Medicine at Lisbon and the organisation of a service of information for the medical press. Finally a resolution was passed blaming the promoters of some of the scientific congresses recently held at Liége, who, while very pleased to have notices inserted in the press, had given themselves but little trouble on behalf of the representatives of the medical journals. The resolution goes on to state that the members of the Belgian Medical Press Association will no longer publish notices concerning congresses unless the organisers of those congresses send, with such announcement, a press card and undertake to give the representatives of the medical journals all the facilities necessary for the accomplishment of their work. Finally a banquet united together those who are enaged in the useful work of organising the medical profession and the medical press. It is anticipated that such meetings will take place every year and thus the medical unions of Belgium may continue to gather strength.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Warley Woods: a Lung for Birmingham.

IN previous letters I have referred to the strong agitation which is being carried on by a number of Birmingham gentlemen, notably by Mr. A. M. Chance, to procure Warley Woods as a public park for Birmingham and district. The agitation began some months ago when it was learned that the woods were to be sold for building sites and that the felling of the timber had already commenced. Mr. Chance at once interested himself in the question and on his initiative a subscription list was opened with the view of raising the necessary sum for the purchase of the woods and if possible for an extension of the adjoining Lightwoods Park, in all an area of 27 acres. For these two objects the sum required was £13,000; this has now been obtained. But having gone so far and having been encouraged by the ready response to the appeal, the committee which has had the business in hand is of opinion that it should go still farther and acquire the whole of the Warley Abbey estate which would give to Birmingham a beautiful woodland park of 100 acres. For this a further £33,000 are asked and already donations of £3000 and £500 have been promised. A subscription list has been opened by the *Birmingham Daily Mail* and more than £200 are already announced. So far the Birmingham, Smethwick, and Oldbury councils have made no contributions, although many, including the Right Hon. Mr. J. Chamberlain, M.P., advocate their doing so. The feeling which the councils seem to share is that the provision of such a park is a luxury rather than a necessity and that they in consequence cannot call upon the ratepayers to contribute collectively.

Local Sewerage Schemes.

For some time past the methods of dealing with the sewage at Oldbury have been considered very unsatisfactory and finally the Staffordshire county council has taken proceedings against the authorities. Prior to this. however, the local council sought the advice of Professor Frankland and Mr. H. Silvester, who have conducted a series of experiments extending over a period of two years and who recommend reconstruction of the works. They are of opinion that the best means of dealing with the sewage is the contact-bed system, requiring ten acres of contact beds, and the sewage to be treated three times. It is, however, pointed out that if they had not to deal with the refuse from certain neighbouring alkali works five acres of beds would suffice and a little suggestive that this sudden increase in the popularity of the out-patient department was coincident with increased contributions from workpeople who in 1900 contributed to the infirmary funds £1465 and in the four subsequent years £2319, £3540, £3641, and £3776 respectively. If the proportion of out-patients to population had been in 1904 only 8 per cent., as it was in the earlier years, instead of nearly 20,000 persons being treated there would have been a little more than 14,000. The question may be asked, therefore, whether this additional 5000 or 6000 may not be due to the fact that the workpeople consider they have a right to obtain some return for their contributions, and thus the resources of the institution are unduly taxed.

Conference of Milk Sellers.

Those public health officers who administer the Dairies, Cowsheds, and Milkshops Orders could not have spoken more strongly of the necessity for keeping cow-heds and dairies in a thoroughly cleanly condition than did some of the speakers at the annual conference of the Federation of Dairymen and Cowkeepers' Associations held at Cardiff on Sept. 12th. The members of the conference passed a resolution expressing the opinion that the responsibility for carrying out the Orders should devolve upon county councils rather than as at present is the case upon district councils and that no milk should be sold from a farm or cowshed until a certificate had been obtained that the premises were in a sanitary condition and the cows healthy. The prevailing opinion seemed to be that the cowsheds in this country were already kept in a satisfactory state, though this is contrary to the experience of many public health officers. In the last report in which he dealt with the subject at any length the medical officer of health of Glamorgan (Dr. W. Williams) said that the inspection of such premises was supervised in a very lax manner in most districts of the administrative county and he suggested that local authorities might with advantage give the question much more attention than they do.

Winsley Sanatorium and Friendly Societies.

It is to be regretted that Dr. H. J. Mackay has not succeeded in persuading the members of the friendly societies in Devizes to maintain a bed at the Winsley Sanatorium for Consumptives. He proposed to obtain the capital sum of £250 needed from the general public and that the 1300 members of the societies who were between the ages of 16 and 65 years should each contribute 1*s.* yearly, realising the £65 required for maintenance. The Worcestershire friendly societies have been generous supporters of the sanatorium on the Ankerdine Hills and several members have received treatment in this institution to their own advantage as well as to that of the societies.

Taunton Isolation Hospital.

At the meeting of the Taunton town council held on Sept. 12th the question of the management of the isolation hospital, which was jointly established by the Taunton town council and the Taunton rural district council, was again discussed. Allusion has been made to the subject in previous numbers of THE LANCET. It will be remembered that the members who represented the town council on the committee of management, together with the medical superintendent (Dr. H. J. Alford), resigned some time ago and the rural district council's portion of the committee appointed another medical man as temporary medical officer. This gentleman has now resigned and the rural council has advertised for a permanent medical superintendent. A joint application had been made to the Local Government Board that that department should hold an official inquiry into the management of the institution, but at this meeting it was reported that the Board declined to do so. After a long discussion it was eventually decided that a special meeting of the town council should be held to consider the whole matter.

Infectious Diseases in Cornwall.

The monthly report of the sanitary committee of the Cornwall county council states that during August there were 45 deaths from zymotic diseases, equal to a zymotic death-rate of 1·6 per 1000 per annum, against 21 and 0·8 respectively during the previous month and 21 and 0·7 respectively for August, 1904. Of the zymotic deaths, one was due to scarlet fever, three to measles, three to whooping-cough, and 33 to diarrhoea (against 13 during the previous month). Two cases of unusual diseases were reported from Helston urban district—one of anthrax in a gipsy woman and the other of typhus fever. The anthrax case recovered but the typhus case ended fatally. The latter case was not notified: the first intimation the medical officer of health had of it was when he received the death certificate signed by a female as an M.D. Boston. The non-notification of the case was a grave disregard of the law and the Helston town council have therefore wisely decided to prosecute. All possible precautions have been taken and there has been no spread.

Sept. 18th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Epidemic of Enteric Fever in Limerick.

AT a meeting of the public health committee of the corporation of Limerick on Sept. 14th a communication was received from Mr. Macgrath, the superintendent medical officer of health, stating that since his last report 13 fresh cases of enteric fever had occurred in the city. It was decided to have samples of milk submitted for analysis and the sanitary officers were given plenary powers to prosecute where offences under the Public Health Act were reported.

Typhus Fever in Innishowen.

The outbreak of typhus fever in the parish of Clonmarry, in the centre of Innishowen, co. Donegal, has resulted in the death of a fever hospital nurse, Miss M. A. McGinnis, a niece of Dr. G. Sigerson of Dublin, two wardswomen, and two patients. All the patients except two have survived, while practically the ordinary staff of the fever hospital, Carndonagh, contracted the disease and never recovered. The people of the entire rural district are so terrified that it was with extreme difficulty that assistance could be obtained to carry out the interments. A man who dug a grave for the burial of a patient who died from the disease was stoned when he reached home. £1 was charged for the use of a horse, £1 for a cart, and 10*s.* for the use of a horse and car to convey a coffin from the maker's. It is thought that infection came through some old clothes imported into the district.

Buncrana Water-supply.

At the monthly meeting of the Innishowen rural council held on Sept. 9th letters were received which had been sent to the Local Government Board from Mr. M. C. Hime, LL.D., and Dr. W. Bernard, complaining of the inadequate water-supply, and urging that the new sewers should not be used until there was an absolute certainty that the water by being largely increased would amply suffice to flush them. The matter was referred to a local committee which is taking steps to obtain better storage.

Death in Child-birth.

At an inquest held recently in Belfast some allegations having been made against a medical man and midwife for not attending a woman who died in childbirth the coroner wisely adjourned the case until Sept. 13th to allow of further evidence being produced. It appeared that a poor woman, advanced in pregnancy, consulted a medical man as she was suffering from a weak heart and kidney disease; he advised her to go to a hospital and finally, after further consideration, she agreed to do so. On the morning, however, that she was to have gone to the hospital, when this medical man went to the house the woman was dead, death, in his opinion, having been due to shock following premature labour, accelerated by inflammation of the kidneys and heart disease. It appeared from the evidence of the husband that when the woman was taken in labour he went for an unqualified nurse—a handy woman—who came and attended. Two children were born alive between 2 A.M. and 3 A.M. and when the handy woman came she sent the husband at once for the medical man originally consulted by the patient. He was out and three other medical men refused to attend, as a medical man was supposed to be in charge. Then a dispensary medical officer was asked to attend and he told the husband of the woman that he was not in the habit of taking cases of that nature unless in connexion with the dispensary, and added that there was a nurse for that purpose, but she said that she could not attend without a note from the relieving officer. Finally, the original medical man consulted, having come back to his home and having then received the message, went to see the poor woman but found that she had died a few hours previously. The jury returned children; and an important one is to urge that the new architecture of the town shall be varied and picturesque. The programme is large, but the society does not attempt too much at once and at the third annual meeting, held at Werneth Park on the 16th, the report of progress was encouraging. Inquiries as to the formation of similar societies come from many parts of the country. It is said that already there is a "beautiful Warrington," though the passer-by would scarcely be aware of it, for the town is blackened by the filthy outpouring of many chimneys; and a "beautiful Birmingham" is talked of. Glasgow, Newcastle-on-Tyne, Bolton, Carlisle, Bristol, and other towns have already made inquiries. Of course the chief enemy to the progress of beauty and cleanliness is black smoke against which a crusade is being carried on. At the meeting Mr. J. W. Graham of Dalton Hall, Manchester, spoke instructively on its prevention and insisted that the pollution of the air was unnecessary and remediable. He said that it was mainly due to the conservatism of the manufacturers that prevented the use of the various types of economical and satisfactory smoke-consuming apparatus. He suggested that the inspection of smoke should be placed under a central Government department. The tendency of these efforts in such places as Oldham must certainly be for good, both directly and indirectly. They are civilising and health-giving, and deserve all encouragement.

Medical Men and Drink.

The quarterly conference of the Manchester, Salford, and District Temperance Union was held on Sept. 16th at Hayfield. Dr. J. D'Ewart gave an address on the medical aspect of the drink question, in which he defended the medical profession against the charge "that it was not moving in the temperance line, or that it was not moving rapidly enough." He is reported to have made one remarkable statement: "Formerly in some instances a patient was dosed with a pint or even a pint and a half of whisky a day at the Manchester Infirmary; now, not a pint a week was used for all the patients." One would like to have some details of the evidence on which, it must be supposed, this statement is founded, and the history of specific cases in which one and a half pints of whisky were given to a patient in 24 hours. If Dr. D'Ewart has been misrepresented the error had better be corrected.

The Fight against Consumption.

There is happily increased and increasing attention given not only to the treatment but, perhaps in a lesser degree, to the prevention of consumption. The Bolton corporation has decided to make inquiries from Mr. W. J. Crossley with a view to acquire a site at Delamere for Bolton consumptives. Mr. Crossley, it will be remembered, founded the Crossley Sanatorium at Delamere, which is connected with the Manchester and Bowdon Consumption Hospital. Delamere has already two sanatoriums on a large scale, Liverpool having found a site there for this purpose before Manchester. A question suggests itself as to the advisability of so many consumptive hospitals being brought into the same neighbourhood, while there is no question as to the objections from the point of view of the inhabitants. But apart from sentiment, it would seem better to avoid multiplying concentration camps in a limited area. Derbyshire is moving in the matter and there was a meeting held at Derby yesterday of public health authorities in connexion with the proposed provision of a county sanatorium for consumptives. The scheme is to have an institution with 40 beds which, with 20 acres of land, would cost about £10,000. The Duke of Devonshire is to preside over a meeting in December to initiate the undertaking. The county council proposes to contribute £2500 to the building fund and £400 annually for the maintenance of ten beds. Durham is not new to the fight and on the occasion of the annual visit of the governors of the Society for the Prevention and Cure of Consumption in the county of Durham to the sanatorium at Stanhope Dr. W. Robinson of Sunderland made an encouraging statement and an anticipation which we must hope is not too sanguine. He said that if the disease continued to diminish at the same rate in the future as in the past he trusted that at the end of 80 years there would be no consumptives to treat. In the county of Durham alone the death-rate from consumption had decreased during the last 11 years more than 30 per cent. owing to the spread of the principles which the society taught. "The main agents in preventing the disease were ventilation, abundance of sunlight, both in the house and in the workshop." Two of the great difficulties are to get people to come in the early stages of the disease and that of finding suitable occupation for patients on leaving the institution, as they should work in the open air. One point about this sanatorium is that it is practically self-supporting. The subscription of 3*d*. per quarter by each man of various bodies of workmen assists in the maintenance. Lord Barnard, the president of the society, said that the working men of the county of Durham deserved admiration for the way in which they supported institutions of that kind. He added also that he believed in the open window and in sunlight, which some people seemed to be afraid of.

Salford Health Report.

Mr. C. H. Tattersall, medical officer of health of Salford, has just presented his report on the health of the town in 1904. Several interesting facts come out. In the four districts of Salford the birth-rate averages 31·7 per 1000, varying from 34·6 in the Regent-road district, 33·3 in Greengate, 32·9 in Pendleton to 25·3 in Broughton, falling gradually, according to the increase in the residential amenities of the neighbourhood. The Salford birth-rate is therefore higher than that of the 76 large towns, which is 29·1 per 1000, and also that for England and Wales—27·9. But as the birth-rate is highest in certain districts so in the same districts are the highest death-rates to be found, though they are slightly lower than in the preceding year. Greengate and Regent-road show a death-rate above the average for the borough, which is 21 per 1000, while Pendleton and Broughton are below it. Greengate has the high death-rate of 28·3 per 1000, while in Broughton it is 14·7. Still there is some improvement all round. The infantile mortality, however, is an exception, having risen from 168 per 1000 births the previous year to 193 last, zymotic disease being the chief cause of death.

Sept. 19th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Cardiff Infirmary.

DURING the past 24 years the expenditure of the Cardiff Infirmary has exceeded the income in 15 years. In 1903 there was a balance of £371 on the right side but this favourable result had not occurred previously since 1893. In 1904 the adverse balance was £1654, though it is only right to say that the average number of patients in the infirmary day by day during the year was 156, a number very considerably above the average of the preceding ten years, when it was 122. The number of out-patients treated was 19,525, compared with a yearly average in the previous ten years of 13,567. This very serious increase in the number of out-patients was discussed at the meeting of the board of management held on Sept. 13th, when Mr. T. Garrett Horder proposed that a special committee should be appointed to investigate the circumstances of persons attending the out patient department. He said that many of the patients had trivial complaints and that the great increase in the number was not only a burden on the infirmary funds but prevented the staff from giving the necessary attention to serious cases. Mr. Cornelius A. Griffiths expressed the opinion that a large number of out-patients took advantage of the department who ought not to do so; and Mr. H. C. Ensor said that people would subscribe more freely if they knew that only deserving persons were treated as patients. When an informal investigation was made a few years ago it was found that about 12 per cent. of the patients interviewed were not fit and proper persons for charitable aid. Although there was a general agreement with Mr. Garrett Horder's motion it was finally decided by the board to appoint a committee to investigate the work of the out-patient department, with special reference to its abuse by undeserving patients, and to report upon the best means of economising the administration of the department without impairing its efficiency. In connexion with this question it is of interest to inquire whether the number of out-patients has increased in the same ratio as the population of the town. In 1884 the percentage of out-patients to the Cardiff population was 7·9; in 1894 it was 7·5. From this year until 1901 it remained at about 8 per cent. In 1902 it was 9 5, in 1903 it was 10·6, and in 1904 it was as high as 11 per cent. It is not begin at the same time. The programme for Vienna is follows. Three clinical teachers, professors of medicine or Neusser, Professor Schrötter, and the temporary of the clinic of the late Dr. Nothnagel) will lecture internal diseases; two professors (Professor Hochenegg Professor von Eiselsberg) will lecture on surgery; two essors (Professor Schauta and Professor Chrobak) will on gynæcology and obstetrics; and two ophthalists (Dr. Fuchs and Dr. Schnabel) will lecture on ology. Lectures on dermatology will be delivered Dr. Finger and Dr. Riehl. Besides these there will be res by Professor Pollitzer on otology, by Professor Chiari laryngology, and by Professor Weichselbaum on morbid my. These lectures are open to students on payt of very small fees, the maximum amount being each for the full term. Foreign holders of diplomas a maximum fee of £2 2s. for each course of lectures. from these annually recurring lectures a number of , post-graduate lectures, and special preparatory , lasting from four to eight weeks, will be conducted its well-known "privat-docenten" and assistants. The s will include special branches of surgery, diagnostic logy, bacteriology, serum therapeutics, errors of c refraction, forensic medicine, practical obstetrics, logical operations, &c. The fees vary from £2 2s. to 5l. and entitle the students to continue working at the tive institutes even after the course is finished. Most these lectures are in German but a few, such as certain tological, otological, and urological demonstrations, be delivered in English, if required, without extra ge. A considerable number of American practitioners re already notified their intention of joining these classes account of the last-mentioned advantage.

A New Treatment of Appendicitis.

Dr. Moosbrugger, a country practitioner, has had the oppor- ty of trying the effects of argentum colloidale (Credé) a large number of cases of acute inflammation of the pendix vermiformis and has described his results in a paper d before the Clinical Society of Vienna. He said that preparation had been tried in appendicitis. He gave by the mouth in small doses of from five to eight grains veral times daily, the ointment which is well known under e name of Credé's ointment being at the same time applied ternally. The results were so good that Dr. Moosbrugger peke of the treatment as a specific against appendicitis. In country places where the surgeons were not always able to operate under favourable conditions or when there was a difference of opinion as to whether medical or surgical treatment ought to be adopted, the use of colloidal silver was, he thought, the best means of arresting the disease. In the discussion the view that colloidal silver was a specific against appendicitis was severely criticised, but the method will be given a fair trial in many hospitals. The remedy was said to act by oxidising the toxins and thus rendering them innocuous. It was absolutely harmless to animal life in the small doses given. Dr. Moosbrugger himself took four times the quantity prescribed without any bad effect.

Female Medical Officers in Hospitals.

The medical senate of the University of Cracow has decided to admit females holding the diploma of M.D. to the post of assistant medical officers in the hospital. Public medical appointments have hitherto been open to females only in Vienna. The action of the Polish university will no doubt be followed by other sister faculties.

Etiology of Volvulus.

In a paper on Volvulus read by Dr. Luksch at a recent meeting in Bukowina, he said that the most usual causes of this condition were: (1) cicatrisation of the mesentery of the lower ileum from an as yet unknown cause; and (2) abnormal length of the intestinal canal. The cicatrices might result from small ruptures of the mesentery or from perivascular inflammations of the lymphoid vessels. The abnormal length of the bowel was due, he said, to the diet the country people who lived mostly on vegetable food. had often at necropsies encountered intestines having a length of 12 metres (40 feet) and upwards in persons not e than 5 feet 3 inches in height and 32 inches in girth. such circumstances it was easy to understand why vulus appeared so often in the population of that district. also showed a number of specimens with cicatrisation and the intestinal canal of a woman, aged 48 years, measuring 12½ metres (41 feet) when extended. He said that in rating for volvulus a choice between several methods was possible. The affected part of the ileum might either be fixed to the abdominal wall or might be resected entirely, or an entero-anastomosis might be made between the ileum and cæcum or ascending colon, thus preventing a relapse of volvulus. Most cases of this kind appeared in the lowest part of the ileum.

Rhinoscleroma and its Treatment.

At a recent meeting of the Society for Internal Medicine in Vienna Dr. H. von Schrötter exhibited several maps showing the countries of Central Europe where rhinoscleroma prevailed. One focus of infection was situated in the Polish provinces, with branches going off to Prussia and Moravia, and another was in the Russian frontier districts. Up to the present time about 700 cases had been recorded. The disease was infectious and consisted in a growth of granulating tissues in the larger respiratory canals (nose, pharynx, larynx, and trachea, down to the bronchi of the second order). It had no tendency to ulcerate, but it generally cicatrised and might obliterate the lumen of canals. The disease was due to a micro-organism similar to the bacillus of Friedländer. As several persons were known to have acquired the disease without leaving Vienna it must be presumed that it also existed in the city. In former times such cases were often mistaken for carcinoma or acne rosacea, especially if the localisation was in the alæ nasi. Several patients lived for 15 or 20 years and died of other diseases. Dr. Freund then showed a man with these changes in the nose. Breathing through the nose was only possible with very great difficulty. The patient was treated with 23 gentle applications of the x rays, each lasting six minutes. The result was very satisfactory. The granulating tissue disappeared from the mucosa nasi, the infiltrations of the nose and pharynx softened and the nares became pervious for breathing. Dr. Kahler showed another patient whom he had treated with radium bromide. In this case there were nodules of granulating rhinoscleroma tissue on the upper lip and nose. After seven applications of 60 milligrammes of the salt, each lasting 20 minutes, several nodules disappeared without any marked change in the surrounding healthy skin. As the treatment was very expensive and troublesome, the patient not being able to stay in Vienna, she was referred to the x ray department, where recovery was complete after four sittings.

Sept. 16th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Fire at the University of Pennsylvania.

As the result of a serious conflagration the University of Pennsylvania has sustained a loss estimated at $40,000. The chief damage resulted through the destruction of microscopes and other accessories for laboratory work, but fortunately the anatomical and surgical preparations lost can be replaced without much difficulty and the necessary repairs to the buildings will not be very extensive.

Increase of Beer-drinking in the United States.

The increasing consumption of malt liquors in the United States is going hand in hand with a commensurate decrease in the amount of the more highly alcoholic liquors used. According to the report of the Commissioner of Internal Revenue in the fiscal year ending with the month of June 49,459,000 barrels of beer were consumed, representing a gain of almost exactly 1,250,000 barrels over the figures for the previous twelvemonth. The quantity of distilled liquors was 116,143,000 gallons, a decrease of 704,000 as compared with the statistics for the year ending in June, 1904. This very desirable trend of the popular preference toward the less intoxicating drinks is to a large extent dependent on the firm stand taken by employers of labour generally in favour of practical abstinence among their men, so that the demand for the powerful stimulants is decreasing and public drunkenness among the working classes is becoming less and less common.

145 Days of Coma.

A case is reported from Yonkers, N.Y., of a boy eight years of age who finally died after having been completely unconscious for 145 consecutive days as the result of cerebro-spinal meningitis.

For the Greater Comfort of Immigrants.

The immigration officials of the port of New York have a verdict according to the medical evidence, adding a rider that the explanations given by the dispensary medical officer and nurse were considered satisfactory. They recommended that notices should be posted, and kept posted, in the poor districts showing where relieving orders could be had and also recommended that medical men should be empowered to issue such orders in urgent midwifery cases to the district nurse.

Water Famine in Donegal Asylum.

At a meeting of the management committee of this asylum, held on Sept. 13th, attention was drawn to the great scarcity of water in that institution. On August 21st for the first time for eight weeks patients were able to be bathed. It was decided to confer with a deputation of the urban council with the view of appointing an engineer to go into the question of obtaining a supply for the town and institution from Lough Salt.

Apothecaries' Hall of Ireland.

Sir Charles A. Cameron has been elected examiner in hygiene, Professor Walter N. Hartley, F.R S., examiner in chemistry, and Dr. J. O. M'Walter examiner in pharmacy.

Irish Medical Association.

At a meeting of the County Armagh branch of the Irish Medical Association, held on Sept. 13th, in the café, Portadown, Dr. C. C. Deane, president of the branch, in the chair, the following resolutions were passed unanimously in regard to the question of reorganisation of the Irish Medical Association. Moved by Dr. J. S. Darling and seconded by Dr. George Dougan:—

> That no scheme of reorganisation can be considered satisfactory which does not provide for the abolition of the committee of council as at present constituted.
>
> That the council should be the executive of the Association and be empowered to administer its affairs, subject to the resolutions of the general meetings and the articles of association.
>
> That in order to make the council an effective instrument in the administration of the affairs of the Association it should be composed of men elected by the general body of the members, who would thus reflect and carry out the policy laid down by, and the instructions of, the general meetings.
>
> That, with a view to efficiency and economy, the council should not consist of more than 21 members; and, in order to induce those who reside at a distance and would be willing to act, the travelling expenses of all members of council who reside outside the county of Dublin should be defrayed out of the funds of the Association.
>
> That, in order to secure continuity in the conduct of affairs of the Association, the members of council should hold office for two or three years, a certain definite proportion retiring each year.

Moved by Mr. J. G. Allen and seconded by Mr. T. H. Brownrigg:—

> That the Association should have a permanent office in Dublin and a paid secretary who would daily attend in the same and, in addition to his secretarial duties, be competent to discharge those of editor and compiler of the "Journal."

Moved by Mr. J. L. Rowlett and seconded by Dr. W. Frier:—

> That each branch should appoint two or more delegates in proportion to the number of its members who would attend the general meetings and represent the views of their branch thereat, and that the council should have power to summon a meeting of all the delegates or of the delegates of one or more provinces to deliberate on any matter of importance that may arise in the administration of the affairs of the Association. The delegates from each province could thus be formed into a provincial council who could be relied on to advise the council on any particular matter affecting any particular province.
>
> That special efforts should be made to organise the branches and to put them on a satisfactory footing, so that they can be relied on to assist the council in promoting the aims and objects of the Association.

Some other important matters having been discussed the meeting separated.

Dunlop Memorial Home.

On Sept. 14th a home erected in connexion with the Holywood Nursing Society to perpetuate the memory of the late Dr. Alex. Dunlop, J.P., was opened in the presence of a large gathering of friends. Dr. Dunlop spent between 40 and 50 years in active practice in Holywood, near Belfast, and on his death three years ago the scheme was started and in a comparatively short time the promoters were in a position to build and not only has the structure been paid for but a sum of £350 has been contributed to the endowment fund.

Magee College, Londonderry.

Mr. B. McCrea has given, it is announced, £7000 to Magee College, Londonderry, for the foundation of a chair of Physics and for scholarships provided a sum is raised to build a new physical laboratory, and to this fund three gentlemen have contributed £800.

Sept. 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Senile Tuberculosis.

M. Boinet in an interesting paper combats the idea whi is so very widely spread that patients over 45 or 50 years age are very rarely tuberculous. He argues that aged perso who are generally considered to be suffering from simp catarrh and in whose case no care is taken as regards t expectoration are very often in reality tuberculous. T sputum of such persons is full of bacilli and can propaga tuberculosis all the more readily inasmuch as the dang of contamination from such sputum is not suspected eith by their immediate relatives nor very often by medical man in charge. In many cases senile tuberc losis is latent (*torpide*) and is masked by emphysem pulmonary sclerosis or bronchial catarrh. It is furth marked by periods of quietude (*trêves*) of varying d tion. The stethoscopic signs are very slight and so the general symptoms. Senile tuberculosis consists ma in a fibrous phthisis characterised by broncho-pulmo sclerosis, by caseous or calcified concretions, and by cavti which are nearly dry or even cicatrised in part. Very oft these cases of pulmonary senile tuberculosis are noth more than a fresh awakening of tuberculosis which originally occurred in adolescence. They can, howeve undergo a certain increase even at an advanced age a sometimes end in becoming an acute phthisis. A gr number of such patients leave hospital very much impro in health and on returning to their families continue propagate the germs of their disease. The danger of t bacilli-bearing sputa of patients suffering from senile tube culosis is increased by the difficulties of different diagnosis of this affection, which is liable to be co founded with chronic broncho-catarrh, bronchiectas emphysema, and pulmonary sclerosis, either simple or acco panied by cardiac dilatation. The differential diagnosis m also lie between cancer of the lung and bronchial manifes tions due to renal insufficiency. The medical man sho also not forget that certain acute forms of senile tuberculo and in certain cases acute phthisis of old people can mi very closely the clinical picture of typhoid fever, of ac pleurisy, or of acute pneumonia. In doubtful cases finding of Koch's bacilli will clear up the diagnosis and w insure that prophylaxis being taken which too often omitted.

The Responsibility of Children for Medical Fees for the Treatment of their Parents.

The court of Nantes has just given judgment upon instructive case. It was that of a lady who while stayi in Paris met with an accident. She was taken home a one of her daughters sent for a medical man, who diagnos a fracture of the forearm and a dislocation of the shoulde joint. Not being able to treat the case alone he called in surgical colleague. Both medical men applied a pr visional apparatus and on the next day put the arm in plaster. On the third day they examined the patie with the x rays. The two medical men sent a bill for 400 francs, and as this was not paid the brought before the courts the patient, the daughter, a the daughter's husband. The court took the view th when the person who calls in a medical man does so for care of his or her father or mother and the patient unable to pay, the obligation of paying the medical man is be ranked among those expenses which are considered alimony (*ayant le caractère alimentaire*). The daught was thus adjudged to be responsible for the payment of t fees. The patient and her daughter as well as her son-in-la were adjudged liable to pay the medical men their fee, b the fee was reduced from 400 to 200 francs.

Sept. 19th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Opening of the Medical Session.

THE new term of the medical schools in Austria will begi on Monday, Oct. 2nd. As a rule it lasts until the East holidays—namely, for six months—with short interruptio at Christmas and New Year. The lectures and clinical wor asia was said to be 1389, made up of 1015 general, idwifery, and 125 medical (all branches).—The report of the Royal Victorian Trained Nurses' ition is a lengthy document. The most important lone by the council appears to have been the ıce on all nurses training for special branches, as ics, gynæcology, eye and ear diseases, mental s, children's, and infectious diseases, and possessing ficate of general nursing. The council, however, admit a dearth of applicants under these conditions as had to permit the employment of probationers special hospitals on the understanding that they ot be certificated until registered as general nurses. ıbjects of invalid cookery, elements of hygiene, and nts of dispensing have been added to the cur- a. The council has formulated a somewhat elabo- cheme for the preliminary training and education bationers. It has also formulated the requirements tra qualifications for the certificates for hospital s.—A public meeting of the Australian Massage Asso- was recently held in Sydney. The chairman, Dr. lm Ross, gave a short *résumé* of all that has been done ing the association and pointed out that the move- as the support of the leading medical men in Sydney. eeting was unanimously of opinion that the associa- as a good one.

st 12th.

Obituary.

IAS SYMONDS HOWELL, M.R.C.S. ENG., L.S.A.

Thomas Symonds Howell died at his residence, The Old ge, Wandsworth, London, S.W., on Sept. 5th, at the ed age of 82 years. Mr. Howell's family has had a long tion with Wandsworth, where three successive genera- ave been medical practitioners continuously for more 0 years. His father was Mr. James Howell, whose s lived in Herefordshire, and who commenced practice dsworth in 1814. Mr. Thomas Howell, the subject of esent notice, received his school education at Black- and when it was decided that he should pursue ical career he entered as a student at St. Thomas's al. Having taken the diplomas of M.R.C.S. Eng. in and L.S.A. in 1845, he shared his father's work ntinued in the active practice of his profession until three years ago. For some 35 years he was medical to the Royal Masonic Institution for Girls. He was t president of the South-West London Medical Society ok an active part in its inauguration. He was also an of the Wandsworth and Putney Gas Light and ompany. He married a daughter of the late Mr. Daniel y of Distillery House, Wandsworth, and had a large . Mrs. Howell survives her husband and 11 of their n are still living, two of them being medical practi- in the neighbourhood of Wandsworth. Mr. Howell wonderful power of obtaining the full confidence of ients. He was a cheery optimist and a hard worker, ing possessed of a sound judgment and a plentiful of the milk of human kindness there is no wonder e met with success in a calling for which he was tly suited. He was a fine type of general practi-

MAS HERBERT LITTLEJOHN, M.B., C.M. EDIN., F.R.C.S., D.P.H. EDIN.

Thomas Herbert Littlejohn, medical officer of health mpstead, died on Sept. 4th at his residence, 37, nd-crescent, Belsize Park. He had for a considerable ffered from insomnia for which he occasionally made sulphonal and it was to an overdose of this substance on August 30th that the fatal result was attri- At an inquest held on Sept. 6th by Mr. Walter er the jury returned a verdict of "Death by enture." The deceased was one of the sons of enry Duncan Littlejohn of Edinburgh. He was ed first at the Edinburgh Academy and subsequently University of Edinburgh, where he graduated as nd C.M. in 1889. He then acted as house surgeon Royal Infirmary to the late Mr. John Duncan and afterwards held similar posts at Carlisle and Preston. On returning to Edinburgh he took his Fellowship of the Royal College of Surgeons of Edinburgh and also the diploma of D.P.H. From 1891 to 1895 he assisted his father in his duties as medical officer of health and surgeon of police. In November, 1895, he was appointed medical officer of health and public analyst of Scarborough. During his first year of office he advocated strongly the erection of a modern isolation hospital and had the satisfaction of seeing his recommendations and plans carried out. He was also instrumental in procuring the erection of a destructor and in obtaining the Scarborough order giving powers to the corporation on the report of the medical officer of health to provide water-closet accommodation to dwelling-houses where other forms of excrement disposal were in use. In 1901 he was appointed medical officer of health of Hampstead out of a large number of applicants. In 1899 he married Miss Ripley of Ashley Manor, Cheltenham, who survives him. He had no family.

The funeral took place on Sept. 7th. After cremation of the remains at the Golders-green Crematorium, Hampstead, the ashes were interred in a grave in Hampstead Cemetery.

Medical News.

THE YELLOW FEVER OUTBREAK AT NEW ORLEANS.—The secretary of the Liverpool School of Tropical Medicine has received the following information with regard to the epidemic of yellow fever at New Orleans from Messrs. Lamport and Holt, who received it from their agents at New Orleans: "The mosquito fever in New Orleans is under control and the 'yellow panic' in the country will soon subside. That the campaign against mosquitoes is successful is shown in the accompanying comparative table of deaths this month from fever, as compared with that of 1878; and it must be borne in mind that in August, 1878, the population of the city was much smaller and the exodus during that year much greater than this year. In August, 1878, there were 125,000 people in the city; now there are 300,000, after allowing fully for absentees, which makes the figures more striking. That the fever had secured a stronger footing in July, 1905, than it had in July, 1878, is shown from the fact that in July, 1878, the deaths from fever were 39, which in July, 1905, were 62; it is therefore clear that with double the population and a better start the deaths in August, 1905, should greatly exceed those of August, 1878. Just the reverse, however, is the case, and it is notable that in August, 1878, the daily deaths increased progressively, but this year it is not so:—

	1905.	1878.
July	62	39
August 1st	6	7
„ 2nd	11	7
„ 3rd	5	7
„ 4th	5	11
„ 5th	8	12
„ 6th	8	5
„ 7th	8	7
„ 8th	4	11
„ 9th	7	12
August 10th	5	8
„ 11th	9	14
„ 12th	9	12
„ 13th	12	21
„ 14th	12	20
„ 15th	6	17
„ 16th	4	29
„ 17th	4	27
„ 18th	8	47
„ 19th	4	41

The above, we submit, affords good grounds for believing that the disease is in hand and that the worst is over. There are still a great many mosquitoes left but the war against them is being relentlessly pressed. Another significant fact is that during July, 1905, the deaths were 25 per cent. of the cases. Now the rate is reduced to 7 per cent. of the total deaths, as July and August only show 14 per cent. of the total cases. The local stock market is advancing and that is a very reliable barometer of public opinion."

REACTION AGAINST THE PIROGOFF SOCIETY'S POLITICAL RESOLUTION.—Following on the protest of the Yaroslaff medical men against the resolution of the Pirogoff Society to abstain from taking part in the Government committees in connexion with the cholera a number of Simferopol medical men also protest, saying that they join their Yaroslaff brethren against the action of the Pirogoff Society in branding with shame the medical men who may decide to join the Government committees, adding that such despotic orders are in direct contradiction to the claims of the society for free speech lately been making very active efforts to reform certain abuses in the care of the third-class passengers on the large transatlantic liners. Half a dozen captains of large passenger steamers have been arrested for violations of the regulations against overcrowding, for having berths too narrow, or for neglecting to provide proper seating and table accommodation for the passengers at meal times. One captain frankly admitted that he never attempted or pretended to supply chairs to the immigrants at the dining tables and on another vessel it was found that only 50 seats were provided for 702 passengers.

Medical Education in the United States.

Statistics recently published present an encouraging picture of the present status of medical education in the United States. There is abundant evidence to show that the movement having for its object the elevation of the requirements for entrance and graduation has met with general approval and there has been a distinct gain in this direction during the past few years. The State examining boards have brought much pressure to bear in the right direction by raising their requirements and by taking an active part in the regulation of preliminary education. The increase in the length of the teaching year is also gratifying, for while in 1904 56·8 per cent. of the colleges had terms of less than eight months now only 39 per cent. belong to this category and the majority of the students prefer the long term colleges. During the year ending June 30th, 1905, 26,147 persons studied medicine at 157 colleges. Of this number 1073 were women and 5606 were graduated. The students were about 2000 less in number than for the previous year and there were 141 fewer graduates. Only 1104 students attended homœopathic schools, the figures showing a steady decrease since 1900 when there were almost 2000. The attendance at eclectic schools was 578, a falling off of nearly one-half when compared with the number for the previous year but the graduates (153) were more than in any year since 1900. Three of the 157 colleges are for women, 63 for men, and 91 are co-educational.

Yellow Fever at New Orleans.

The situation has improved steadily and now there seems no reason to doubt that the epidemic of yellow fever will speedily terminate in New Orleans although new foci are still being reported in the country districts. The vigorous campaign against mosquitoes has accomplished wonders in the extermination of the pests, culex and anopheles sharing the fate of the stegomyia against which the attack is primarily directed. Up to Sept. 3rd about 2000 cases with not quite 300 deaths have been reported and the figures have been getting lower every day, a remarkable showing in view of the fact that the last two weeks of August usually represent the acme of an epidemic of the disease. Thus in 1855 there were 3000 deaths during the last two weeks of August and in 1878 the mortality increased twelvefold between the first and last weeks of the month. Stories of remarkable instances of quarantine panic are coming to light. In one community admission was refused to a consignment of carbolic acid sent to it for disinfecting purposes and another turned back a cartload of steel rails, while many districts have suffered severely through their exclusion of food-supplies and freight of all kinds even when coming from non-infected localities. Considerable excitement was caused among the uneducated classes in New Orleans by the propaganda of a homœopathic physician from St. Paul, who went to the city preaching the doctrine that immunity to infection could be secured by small daily doses of arsenic. For a time he secured a large following, until it was pointed out that even habitual arsenic eaters succumbed as easily as other people. This recalls the incident of a physician who years ago went to New Orleans during an epidemic to demonstrate his ability to cure yellow fever by the use of a special cot of his invention in which cold affusions could be made without disturbing the patient. He promptly contracted the disease and died in his own cot.

Sept. 8th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Medical Men in the Law Courts.

ON July 3rd Dr. F. G. Connor of Lismore, New South Wales, was sued for £5000 for alleged neglect and unskilfulness in the treatment of a fractured leg. Evidence was given by Dr. A. MacCormick, Dr. T. H. Fiaschi, Bowker, and Mr. C. P. B. Clubbe to the effect the treatment was absolutely correct and the result cellent. After a short retirement the jury ret verdict for Dr. Connor.—At the Sydney district court H. W. Devlin sued a patient for his fees attendance for the results of a tram accident. The way authorities had given the defendant a certain sum pay for medical attendance, but he refused to pay when account was rendered. His defence was that he did engage Mr. Devlin. The judge made an order for the amount claimed.—At the same court Dr. H. L. A. Shorter Petersham sued a lodge patient for a fee for operation on son for post-nasal growths. It was claimed that the rendered was not included in the lodge agreement. hearing evidence from the lodge trustees, the judge ga verdict for Dr. Shorter on the facts but desired to make clear that the decision did not govern other lodge cases, did he give any interpretation of the document drawn between this particular lodge and Dr. Shorter.

Attack by an Asylum Patient.

A patient at Gladesville Lunatic Asylum (Sydney), was regarded by the medical officers as harmless allowed, as are many of the patients, to leave the as and to mix with the public, suddenly attacked a lady, wife of Dr. L. A. Carter of Sydney, in the street and suffocated her. Dr. E. Sinclair, Inspector-General of th Insane, has made a report on the occurrence. He says is the first time during the 50 years it has been the cust to allow harmless patients outside the grounds that such thing has happened. For the future no patients will allowed beyond the grounds except under the charge of attendant.

Sir Philip Sydney Jones.

The announcement that the honour of knighthood been conferred on Dr. Philip Sydney Jones of Sydney h been very gratifying to the profession in Australia. He universally respected and has held, and still holds, ma important positions. The high estimation in which he regarded was shown by his appointment as President of the Australasian Medical Congress when it met in Sydney in 1892. He is now Vice-Chancellor of the University Sydney.

Death of Mr. K. I. O'Doherty.

A notable member of the medical profession in Australia has passed away in Brisbane, Mr. Kevin Izod O'Doherty, at the advanced age of 80 years. While still a medical student he entered into the "Young Ireland" movement and joined in founding the *Irish Tribune* in 1848. The journal was suppressed after five issues and Mr. O'Doherty was lodged in gaol on a charge of treason and felony. After three trials he was sentenced to ten years' transportation to Van Diemen's Land. On arrival he was released on parole and his medical services were utilised in St. Mary's Hospital, Hobart. He was pardoned five years later conditional on his residing out of the United Kingdom. He settled in Paris and resumed his medical studies. In 1856 he received an unconditional pardon and returned to Dublin where he was admitted F.R.C.S. Irel. After practising in Dublin for a time he went to Brisbane where he took a leading position in the profession. He was for six years a member of the Legislative Assembly and in 1877 was nominated a member of the Legislative Council. He was a member of the Central Board of Health and at various times surgeon in the volunteer force, medical superintendent of quarantine, and official visitor to the Goodna lunatic asylum. He was President of the Irish National League of Australia and chairman of the Irish Australian Convention held in Melbourne in 1883. In 1886 he went back to Ireland and was returned to the House of Commons for Meath in the Parnellite interest. After a few months he resigned and returned to Queensland. His genial nature endeared him to a very wide circle. Throughout the whole of his long and honourable career in Queensland Mr. O'Doherty evinced the warmest attachment to his native country and her people.

Trained Nurses' Associations.

The annual report of the Australian Trained Nurses' Association (New South Wales) stated that during the year there had been a steady increase in membership in all the States, 120 applications being accepted for admission to the central register, making the total number 759, as against 689 last year; the medical membership has also increased from 75 to 91. The total membership of the association in

M R C S, L.R C P Lond ha
ROLD WILLIAM LITTON, has been appointed Public Vaccinator for the Districts of Upper Hutt,
t, and Petone, New Zealand
has been appointed Certify-
R C S Eng, L.R.C P Lond
on under the Factory and Workshop Act for the Long
strict of the county of Lincoln.
, M.D Glasg, has been re-appointed Medical Officer of
ve
has been appointed Consulting Sur
sumption, Kensington square W
has been appointed Certifying Surgeon
I B, M S Edin, has been appointed Certifying Surgeon for the Chirnside District of
Factory and Workshop Act for the Chirnside District of
y of Berwick.
, M D Brux, has been
J C, D P H, F F P S Glasg, M D Brux, has been
Examiner in Pharmacy to the Apothecaries' Hall of

has been appointed Medical Officer to
M B, C M Glasg, has been appointed Medical Officer to
Office in Davidsons Mains District, Midlothian
P, L.D S R S C I, has been appointed Honorary Consult-
al Surgeon, St. John's Hospital, Limerick
, M D Brux. M R C S Eng, L.R C P Lond, has been
d Government Medical Officer and Vaccinator at Cobar,
uth Wales.
, M R C S, L.R C P Lond, has been re-appointed Medical
of Health for the Droxford Urban District Council, Hants
ARD, M D Durh, has been re-appointed Medical Officer
Second District by the Devizes Board of Guardians
J, M B, B S R.U I, has been appointed Certifying Surgeon
the Factory and Workshop Act for the Newbridge District of
nty of Kildare
E W, M R.C S, L.R C P Lond, has been appointed Certify
rgeon under the Factory and Workshop Act for the Aldershot
t of the County of Hants
ALPH, M D Durh, has been re appointed Medical Officer of
to the Royton District Council, Durham

Vacancies.

er information regarding each vacancy reference should be made to the advertisement (see Index)

EX ROYAL INFIRMARY —Assistant Surgeon
D COUNTY HOSPITAL—House Physician Salary £60 per annum,
apartments board, and washing
ON THROAT AND EAR HOSPITAL, Church street, Queen's road.—
resident House Surgeon for six months, renewable Salary at
of £75 per annum
L EYE HOSPITAL—House Surgeon Salary £80, board and
dence
F LONDON HOSPITAL FOR DISEASES OF THE CHEST Victoria park,
—Two House Physicians (male) for six months, with board, wash
and residence Salary at rate of £30 per annum. Also
thologist. Salary 100 guineas per annum
ON GENERAL HOSPITAL—Senior and Junior House Surgeons
lary, senior position £105, junior position £50, with board,
undry and residence
ET THE GUEST HOSPITAL—Assistant House Surgeon for six
onths. Salary £40 per annum, with residence board, and washing
NA HOSPITAL FOR SICK CHILDREN, Southwark, S E—Eight
alified Clinical Assistants
NGDON GENERAL DISPENSARY 17 Bartlett's buildings Holborn
rcus, E C—Resident Medical Officer Salary £120 per annum,
ith apartments, coals gas and attendance
E HALL ASYLUM, Bow, London, E —Assistant Medical Officer
alary at rate of £150, with board, apartments, attendance, and
ashing
SHILL, STOKE UPON TRENT, NORTH STAFFORDSHIRE INFIRMARY
ND EYE HOSPITAL—Senior House Surgeon. Salary £100 per
nnum, with apartments board and washing
ITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—
Resident House Physicians for six months. Honorarium £25
PITAL FOR WOMEN Soho-square, W —House Physician for six
months Salary £30
DERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL—House
Surgeon Salary £120 (increasing to £150), with rooms and
attendance
CASHIRE COUNTY ASYLUM, Winwick Warrington —Assistant
Medical Officer, unmarried Salary £150 per annum, increasing to
£200, with apartments board attendance and washing
DS GENERAL INFIRMARY, Leeds.—Laboratory Curator Salary £150
per annum
CESTER, CORPORATION OF, ISOLATION HOSPITAL—Resident Medical
Officer for the Borough Isolation Hospital Salary £120 a year,
with board and residence
TON, WALTHAMSTOW AND WANSTEAD CHILDREN'S AND GENERAL
HOSPITAL, Orford road, Walthamstow —House Surgeon Salary
£100 per annum, with rooms board, &c.
ERPOOL, CITY OF, FAZAKERLEY HOSPITAL FOR INFECTIOUS DISEASES.
—Medical Superintendent. Salary £400 per annum, increasing to
£500 with house, coal, and lighting
DON HOSPITAL, Whitechapel E —Physician
DON THROAT HOSPITAL, 204, Great Portland street, W —House
Surgeon for six months Salary at rate of £50 per annum.
NCHESTER ROYAL INFIRMARY —Resident Surgical Officer, unmarried.
Salary £150 per annum, with board and residence.
NCHESTER SOUTHERN AND MATERNITY HOSPITAL—Resident House
Surgeon Honorarium at rate of £60 per annum, and board.
FOLK AND NORWICH HOSPITAL—Honorary Assistant Physician
DINGTON INFIRMARY —Clinical Assistant and Second Assistant to
the Medical Superintendent (unmarried) for six months. Honorarium
£25, with board lodging and washing
NHILL, NEAR LIVERPOOL, COUNTY ASYLUM,—Assistant Medical
Officer, unmarried Salary £150 per annum, increasing to £200,
with apartments, board, and washing

REETH UNION —Medical Officer of Health and District Medical Officer
Salary £50 per annum for Medical Officer of Health and £45 for
District Medical Officer, in addition to vaccination fees for Muker
Vaccination District, average about £12 per annum
ROYAL DENTAL HOSPITAL AND LONDON SCHOOL OF DENTAL SURGERY,
Leicester square.—Lecturer on Dental Surgery and Pathology.
ROYAL DENTAL HOSPITAL, Leicester-square —Morning House Anæs
thetist. Honorarium £50 per annum
ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS EYE HOSPITAL),
City road, E C —Senior House Surgeon Salary at rate of £100
a year, with board and residence
ST JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester square,
W C —Pathologist.
ST THOMAS'S HOSPITAL—Physician for Mental Diseases Also Two
Dental Surgeons Also Assistant Pathologist and Demonstrator of
Morbid Anatomy
SALISBURY GENERAL INFIRMARY —House Surgeon. Salary £100 per
annum, with apartments board, and lodging Also Assistant
House Surgeon. Salary £50 per annum, with apartments, board,
and lodging
SEAMEN'S HOSPITAL SOCIETY, Greenwich, S E —DREADNOUGHT HOSPITAL,
Greenwich —House Physician Salary £65 per annum
House Surgeon Salary £65 per annum Junior Resident Medical
Officer Salary £40 per annum At the BRANCH HOSPITAL, Royal
Victoria and Albert Docks —Senior House Surgeon Salary £100
per annum House Surgeon Salary £50 per annum With board,
residence, and washing in each case.
SOUTHPORT INFIRMARY —Resident Junior House and Visiting Surgeon,
unmarried, for six months Salary at rate of £70 per annum,
with residence, board, and washing
THROAT HOSPITAL, Golden square, W —House Surgeon. Stipend £50
per annum, with board, residence, and laundry
VICTORIA HOSPITAL FOR CHILDREN Tite-street, Chelsea, S W —
House Surgeon for six months Honorarium of £25, with board
and lodging
WAKEFIELD, WEST RIDING ASYLUM —Assistant Medical Officer Salary
£140, rising to £160, with board, lodging, washing, &c
WEST HAM UNION —Assistant Medical Officer Salary £125 per annum
WESTERN GENERAL DISPENSARY, Marylebone-road, N W —Honorary
Anæsthetist.
WISBECH, NORTH CAMBRIDGESHIRE HOSPITAL—Male Resident Medical
Officer (unmarried) for six months Salary £100 per annum, with
rooms, attendance, &c.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL—House
Surgeon Salary £100 per annum, with board, lodging, and
washing
YORK DISPENSARY —Resident Medical Officer, unmarried. Salary £120
a year, with board, lodging, and attendance

THE Chief Inspector of Factories, Home Office, S W, gives notice of a vacancy as Certifying Surgeon, under the Factory and Workshop Act, at Crowborough, in the county of Sussex.

Births, Marriages, and Deaths.

BIRTHS.

BAWTREE.—On Sept 15th at The Lodge, Maldon, Essex, the wife of Frank Bawtree M R C S, L R C P, of a son

EDWARDS —On Sept 14th, at Chilchester London lane Bromley, Kent, the wife of John M Edwards, M R C S, L R.C P, of a son

HIGHET—At Bangkok, Siam, on the 11th August, the wife of Dr H Campbell Highet, Principal Medical Officer, Local Government, Siam, of a son

LININGTON —On Sept. 13th, at Radnor Park avenue, Folkestone, the wife of William West Linington F R C S —a daughter

WILLIAMSON —On Sept. 12th at Blaby, Leicester, the wife of Lieutenant Colonel J G Williamson, R A.M C (Ret), of a daughter

MARRIAGES.

GILL—ANDERSON —At St Thomas Cathedral, Bombay, on Sept. 1st, Clifford Allchin Gill, Lieutenant Indian Medical Service, eldest son of the late Henry Clifford Gill, to Jean, second daughter of James Anderson Esq, of Stockbridge Ecclefechan, N B

KEELING—WOOD —On Sept. 16th, at West Dulwich, Hugh Nevill Keeling M R.C S L.R C P, of 25, Bagdale, Whitby, third son of the Rev W H Keeling to Caroline Mary, fourth daughter of Daniel Wood, of West Norwood

PRICE—CLARKE.—On Sept 13th at St Andrew's Church, Clayhidon, Harold Vaughan Pryce, F R.C S, to Marian Frances Violet, elder daughter of Rev Walrond Clarke Clayhidon, Devon

SEVIER—SADGROVE.—On Sept 12th, at the parish church, Winston, Alfred Hyam Sevier, M.B, to Edith Eleonie Frances second surviving daughter of the Rev F E and Mrs Sadgrove, Winston Rectory, Darlington

TAYLOR—STANSFELD —On Sept 12th, at Wrangthorne Church, Leeds, by the Rev R N Taylor, B A., Rector of Melbecks Richmond, Yorks (uncle of the bridegroom), Frank Edward Taylor, M Sc., M A., M B, F R.C S, M R.C P, 11, Bentinck street, Cavendish square, W, to Phœbe eldest daughter of the late William Edward Stansfeld and of Mrs Stansfeld of Ash Grove, Leeds.

DEATHS.

BATTYE.—At 84 Belgrave-road, S W, on Sept. 20th, John Howard Battye, M D younger son of the late Dr R Fawcett Battye, of 125, St George's road S W aged 52. Funeral service at St. James the Less, Westminster, 10.30 A.M. Saturday No other intimation.

KIRTON —On August 23rd, Marjorie, dearly loved twin baby of Rex and Nellie Kirton.

N B —A fee of 5s is charged for the insertion of Notices of Births, Marriages, and Deaths.

action, &c. They continue: "Let members join and do what they like, but to force others to desist under pain of 'judgment' constitutes at least arrogance." "We protest," they conclude, "against all arrogance, but, above all, against corporate tyranny."

UNWHOLESOME SHELL-FISH.—Dr. T. Dunlop, medical officer of health of Torquay, has issued public notices urging the inhabitants of the district to refrain from eating cockles and mussels for the reason that for the most part these shell-fish are collected from the beds of rivers in the neighbourhood into which large quantities of town sewage are poured. A death from enteric fever, caused by eating cockles, has recently occurred in Torquay.

MEDICAL MAGISTRATES.—Mr. John Blair, M.D. R.U.I., honorary assistant surgeon to the Royal Albert Edward Infirmary, Wigan, and Mr. George Wolstenholme, M.B., C.M. Glasg., have been appointed magistrates for the county borough of Wigan.—Dr. F. J. Waldo, Barrister of the Middle Temple, His Majesty's coroner for the City of London and Southwark, has been placed by the Lord Chancellor on the commission of the peace for the county of London.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Sept. 14th, Dr. A. Newsholme, the President, being in the chair.—Dr. L. A. Parry showed an elderly woman with a large Crescentic Patch of Atrophy round the Left Optic Disc.—Dr. Walter Broadbent showed a man, aged 28 years, with Paresis and Wasting of Both Hands and Forearms of recent onset and some Spastic Paraplegia of the Legs. There were no anæsthesia, no loss of sensation of heat and cold, and no pain. The diagnosis was a gumma pressing on the front of the cord in the lower part of the cervical enlargement.—The President read his inaugural address entitled "The Economic and other Causes which have brought about the Past Reduction in the Death-rate from Tuberculosis, with special reference to the Influence of Workhouse Infirmaries." He passed in review the various possible causes of the decrease of pulmonary tuberculosis, the decreased price of food, the less cost of living, the increased wages, and the better drainage of towns, and showed by statistics that none of these could claim to be the real cause but found that the steady increase in the proportion of all cases of pulmonary tuberculosis who died in infirmaries or hospitals (and so were prevented from conveying infection during the last months of their lives) corresponded most closely with the curve of the decrease of pulmonary tuberculosis. The paper was listened to with great interest by an unusually large meeting and was followed by a discussion.

BOOKS, ETC., RECEIVED.

ARROWSMITH, J. W., Quay-street, Bristol. (WHITTAKER AND CO., 2, White Hart-street Paternoster-square, London.)

University College, Bristol. Calendar for the Session 1905–1906. Price 1s.

BAILLIÈRE, J. B., ET FILS, 19, Rue Hautefeuille, Paris.

Les Actualités Médicales. Les Traitements des Entérites. Par le Dr. Maurice Jouaust. Price fr. 1.50.

CHURCHILL, J. AND A., 7, Great Marlborough-street, W.

The Apsley Cookery Book, containing 448 Recipes for the Uric-acid-free Diet. By Mrs. John J. Webster and Mrs. F. W. Jessop. Price 3s. 6d. net.

CHURCH OF ENGLAND TEMPERANCE SOCIETY, 4, Sanctuary, Westminster, S.W.

A First Reader in Health and Temperance. By W. Taylor, Master of Method, Battersea Training College, and Head Master of Sir Walter St. John's School. Price not stated.

GLAISHER, HENRY J., 57, Wigmore-street, Cavendish-square, W.

Indigestion. The Diagnosis and Treatment of the Functional Derangements of the Stomach. By George Herschell, M.D. Lond., Fellow of the Royal Medico-Chirurgical Society, Senior Physician to the Queen's Jubilee Hospital. Third edition, entirely rewritten. Price 5s. net.

GRANVILLE PRESS, LIMITED, 27, Fetter-lane, E.C.

Pannell's Reference Book. For Home and Office. A Commercial, Medical, Legal, Social, Educational, and General Guide. Price 6s. 6d. net.

GREEN, WILLIAM, AND SONS, Edinburgh and London.

Essentials of Human Physiology. By D. Noël Paton, M.D., B.Sc., F.R.C.P. Ed., Superintendent of the Research Laboratory of the Royal College of Physicians of Edinburgh. Second edition, revised and enlarged. Price not stated.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.

Allgemeine Fieberlehre. Von Dr. Eduard Aronsohn, Ems-Price M.5.

KARGER, S., Karlstrasse, 15, Berlin, N.W.

Grundriss eines Systems der Medizinischen Kulturgeschi Nach Vorlesungen an der Berliner Universität (Winte 1904/5). Von Dr. Julius Pagel, a.o. Prof. der Geschichte Medizin. Price M.2.50.

KIMPTON, HENRY, 13, Furnival-street, Holborn, E.C.

Kimpton's Essential Series. Essentials of Medical Electricity. Edward Reginald Morton, M.D., C.M., Trinity Univ Toronto; D.P.H., F.R.C.S. Ed.; Medical Officer in Charge of Electrical Department, London Hospital; Honorary Secre the British Electro-therapeutic Society, &c. Price 4s. 6d. net.

The Medical Diseases of Egypt. By F. M. Sandwith, F.R.C.P., Consulting Physician to H.M. the Khedive Kasr-el-Ainy Hospital, Cairo; Lecturer at the London S Tropical Medicine; *formerly Vice-Director of the Sanitary* partment of Egypt and Professor of Medicine and Exami the Egyptian Government School of Medicine. Part I. 7s. 6d. net.

Acute Contagious *Diseases*. By William M. Welch, M.D., D nostician to the Bureau of Health and Consulting Physicia the Philadelphia Municipal Hospital for Contagious and Infec Diseases, and Jay F. Schamberg, A.B., M.D., Professor of tology and of [illegible] ve *Diseases, Philadelphia* in Medicine, Assistant D .nd Consulting Physician [illegible] s and Infectious Diseases. [illegible]s. net.

LAURIE, T. WERNER, Clifford's Inn, Fleet-street, E.C.

The Cathedrals of England and Wales. By T. Francis Bum *author of "Holidays among the Glories of France,"* " Cathedrals of North Germany," &c. First series. With 25 page plates. Price 6s. net.

P. BLAKISTON'S SON AND CO., 1012, Walnut-street, Philadelphia, U.

A Text-book of Physiological Chemistry for Students of Medi By John H. Long, M.S., Sc.D., Professor of Chemistry in N Western University Medical School, *Chicago*. Price not stat

REBMAN, LIMITED, 129, Shaftesbury-avenue, W.C.

Select Methods in Food Analysis. By Henry Leffmann, A M.D., *Ph.D.*, and William Beam, A.M., M.D., F.I.C. S edition, revised and enlarged. Price 11s. net.

Enlargement of the Prostate. By John B. Deaver, M.D., Surg in-Chief to the German Hospital, Philadelphia; assisted Astley Paston Cooper Ashhurst, M.D., Surgeon *to the* patient *Department of the* Episcopal Hospital. Price 30s. n

Radiotherapy in Skin Disease. By Dr. J. Belot. With a Pre by Dr. L Brocq, Physician to the Broca Hospital, Paris. lated by W. Deane Butcher, M.R.C.S., Surgeon *to the* Lon Skin Hospital. Only authorised translation from the sec French edition. Price 17s. net.

Appendicitis. By John B. Deaver, M.D., Surgeon-in-Chief to t German Hospital, Philadelphia. Third edition, thoroug *revised and enlarged. Price 30s. net.*

SWAN SONNENSCHEIN AND CO., LIMITED, London.

The Needs of Man: a Book of Suggestions. *By W. Winslow* H M.D. *Price* 3s. 6d. net.

UNIVERSITY PRESS, Cambridge. (*Cambridge University* Press W house, C. F. CLAY, Manager, Fetter-lane, London, E.C.)

Immunity in Infective Diseases. By Élie Metchnikoff, Fore Member of the Royal Society of London, Professor at the Past Institute, Paris. Translated from the French by Francis Binnie, of the Pathological Department, University of Cambri Price 18s. net.

WOOD, MITCHELL, AND CO., LIMITED, Oriel Works, Park-s' Hanley.

Guide to Finger-Print Identification. By Henry Faulds, L.F.P. late Surgeon-Superintendent of Tsukiji Hospital, Tokyo, Ja Price 5s. net. (*Postage 3d.*)

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institut and others possessing information suitable for this column, invited to forward to THE LANCET *Office, directed to the S Editor, not later than 9 o'clock on the Thursday morning of e week, such information for gratuitous publication.*

BREBNER, C. S., M.D., Ch.B. Edin., D.P.H., has been appoin Medical Officer of Health to the Widnes Town Council.

BRODRICK, C. C., L.R.C.P. L.R.C.S. Edin., has been re-appoin Medical Officer of Health for the Tavistock Rural and Urban tricts, Devon.

BROWNE, JOHN WALTER, M.B., B.S., R.U.Irel., has been appoin Public Vaccinator at Rawene and Kohukohu, New Zealand.

COCKELL, EDWARD SEATON, M.R.C.S., L.S.A., has been appoin Medical Officer and Public Vaccinator for the *Greatham District* Hartlepool.

CROOKE, ROBERT WARREN, L.R.C.P. Edin., L.R.C.S. Edin., L.F.P Glasg., has been appointed Government *Medical Officer* Vaccinator at Gunnedah, New South Wales.

D'ARCY, CONSTANCE E., M.B., Ch.M. Syd., has been appointed Resid Medical Officer, Royal Hospital for Women, Sydney, New Sou Wales

DERRY, B. G., M.R.C.S., L.R.C.P. Lond., has been re-appointed Medi Officer of Health for the Borough of Bodmin (Cornwall).

LLIAM LITTON, M.R.C.S., L.R.C.P. Lond., has
e Vaccinator for the Districts of Upper Hutt,
, New Zealand.

, L.R.C.P. Lond., has been appointed Certify-
e Factory and Workshop Act for the Long
county of Lincoln.

, has been re-appointed Medical Officer of
and Crewe.

.S.Eng., has been appointed Consulting Sur
the Assumption, Kensington square, W.

Eng., has been appointed Certifying Surgeon
d Workshop Act for the Chirnside District of
k.

P.H., F.F.P.S. Glasg., M.D. Brux., has been
in Pharmacy to the Apothecaries' Hall of

Glasg., has been appointed Medical Officer to
's Mains District, Midlothian.

R.C.I., has been appointed Honorary Consult-
St. John's Hospital, Limerick.

M.R.C.S. Eng., L.R.C.P. Lond., has been
Medical Officer and Vaccinator at Cobar,

L.R.C.P. Lond., has been re-appointed Medical
the Droxford Urban District Council, Hants.

Durh., has been re-appointed Medical Officer
by the Devizes Board of Guardians.

.R.C.P. L., has been appointed Certifying Surgeon
and Workshop Act for the Newbridge District of

, L.R.C.P. Lond., has been appointed Certify-
the Factory and Workshop Act for the Aldershot
of Hants.

Durh., has been re-appointed Medical Officer of
District Council, Durham.

Vacancies.

[illegible] each vacancy, reference should be
[illegible] advertisement (see Index).

INFIRMARY.—Assistant Surgeon
[illegible]—House Physician. Salary £50 per annum,
[illegible] and washing.
[illegible] H OSPITAL, Church-street, Queen's road.—
[illegible] Surgeon for six months, renewable. Salary at
[illegible]

[illegible]—House Surgeon. Salary £[illegible], board and

[illegible] DISEASES OF THE CHEST, Victoria park,
[illegible] (unmarried) for six months, with board, wash-
[illegible] Salary at rate of £30 per annum. Also
[illegible] per annum.

[illegible] HOSPITAL.—Senior and Junior House Surgeons
[illegible], junior position £80, with board,
[illegible]

[illegible] HOSPITAL.—Assistant House Surgeon for six
[illegible] per annum, with residence, board, and washing
[illegible] CHILDREN, Southwark, S.E.—Eight
[illegible]

[illegible] DISPENSARY, 17, Bartlett's buildings, Holborn
[illegible] Medical Officer. Salary £120 per annum,
[illegible] and attendance.
[illegible], London, E.—Assistant Medical Officer
[illegible], with board, apartments, attendance, and

[illegible] TRENT, NORTH STAFFORDSHIRE INFIRMARY
[illegible]—Senior House Surgeon. Salary £100 per
[illegible] board and washing.
[illegible] AND DISEASES OF THE CHEST, Brompton.—
[illegible] six months. Honorarium £25.
[illegible], Soho-square, W.—House Physician for six
[illegible]

[illegible] INFIRMARY AND CHILDREN'S HOSPITAL.—House
[illegible] £100 (increasing to £120), with rooms and

[illegible] ASYLUM, Winwick, Warrington.—Assistant
[illegible] unmarried. Salary £150 per annum, increasing to
[illegible] board, attendance, and washing.
[illegible] INFIRMARY, Leeds.—Laboratory Curator. Salary £150

[illegible] ISOLATION HOSPITAL.—Resident Medical
[illegible] Isolation Hospital. Salary £120 a year,
[illegible]
[illegible] AND WANSTEAD CHILDREN'S AND GENERAL
[illegible] Walthamstow.—House Surgeon. Salary
[illegible] board, &c.
[illegible] FAZAKERLEY HOSPITAL FOR INFECTIOUS DISEASES
[illegible] Salary £200 per annum, increasing to
[illegible]
[illegible] E.—Physician.
[illegible] HOSPITAL, 44, Great Portland street, W.—House
[illegible] Salary at rate of £50 per annum.
[illegible] INFIRMARY.—Resident Surgical Officer, unmarried.
[illegible] per annum, with board and residence.
[illegible] AND MATERNITY HOSPITAL.—Resident House
[illegible] at rate of £50 per annum, and board
[illegible] HOSPITAL.—Honorary Assistant Physician
[illegible] INFIRMARY.—Clinical Assistant and Second Assistant to
[illegible] Superintendent, unmarried, for six months. Honorarium
[illegible]

REETH UNION.—Medical Officer of Health and District Medical Officer
Salary £50 per annum for Medical Officer of Health and £45 for
District Medical Officer, in addition to vaccination fees for Muker
Vaccination District, average about £12 per annum.
ROYAL DENTAL HOSPITAL AND LONDON SCHOOL OF DENTAL SURGERY,
Leicester-square.—Lecturer on Dental Surgery and Pathology.
ROYAL DENTAL HOSPITAL, Leicester-square.—Morning House Anæs-
thetist. Honorarium £50 per annum.
ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS EYE HOSPITAL),
City road, E.C.—Senior House Surgeon. Salary at rate of £100
a year, with board and residence.
ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square,
W.C.—Pathologist.
ST THOMAS'S HOSPITAL.—Physician for Mental Diseases. Also Two
Dental Surgeons. Also Assistant Pathologist and Demonstrator of
Morbid Anatomy.
SALISBURY GENERAL INFIRMARY.—House Surgeon. Salary £100 per
annum, with apartments, board, and lodging. Also Assistant
House Surgeon. Salary £50 per annum, with apartments, board,
and lodging.
SEAMEN'S HOSPITAL SOCIETY, Greenwich, S.E.—DREADNOUGHT HOS-
PITAL, Greenwich.—House Physician. Salary £55 per annum.
House Surgeon. Salary £55 per annum. Junior Resident Medical
Officer. Salary £50 per annum. At the BRANCH HOSPITAL, Royal
Victoria and Albert Docks.—Senior House Surgeon. Salary £100
per annum. House Surgeon. Salary £50 per annum. With board,
residence, and washing in each case.
SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon,
unmarried, for six months. Salary at rate of £70 per annum,
with residence, board, and washing.
THROAT HOSPITAL, Golden square, W.—House Surgeon. Stipend £50
per annum, with board, residence, and laundry.
VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—
House Surgeon for six months. Honorarium of £25, with board
and lodging.
WAKEFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer. Salary
£140, rising to £150, with board, lodging, washing, &c.
WEST HAM UNION.—Assistant Medical Officer. Salary £125 per annum.
WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Honorary
Anæsthetist.
WISBECH, NORTH CAMBRIDGESHIRE HOSPITAL.—Male Resident Medical
Officer (unmarried) for six months. Salary £100 per annum, with
rooms, attendance, &c.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House
Surgeon. Salary £100 per annum, with board, lodging, and
washing.
YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £120
a year, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a
vacancy as Certifying Surgeon, under the Factory and Workshop
Act, at Crowborough, in the county of Sussex.

Births, Marriages, and Deaths.

BIRTHS.

BAWTREE.—On Sept. 13th, at The Lodge, Maldon, Essex, the wife of
Frank Bawtree, M.R.C.S., L.R.C.P., of a son.
EDWARDS.—On Sept. 14th, at Chichester, London lane, Bromley, Kent,
the wife of John M. Edwards, M.R.C.S., L.R.C.P., of a son.
HIGHET.—At Bangkok, Siam, on the 11th August, the wife of Dr.
H. Campbell Highet, Principal Medical Officer, Local Government,
Siam, of a son.
LIVINGTON.—On Sept. 15th, at Radnor Park avenue, Folkestone, the
wife of William West Livington, F.R.C.S., a daughter.
WILLIAMSON.—On Sept. 12th, at Blaby, Leicester, the wife of Lieu-
tenant Colonel J. G. Williamson, R.A.M.C. (Ret.), of a daughter.

MARRIAGES.

GILL—ANDERSON.—At St. Thomas's Cathedral, Bombay, on Sept. 1st,
Clifford Allchin Gill, Lieutenant, Indian Medical Service, eldest
son of the late Henry Clifford Gill, to Jean, second daughter of
James Anderson, Esq., of Stockbridge, Ecclefechan, N.B.
KEELING—WOOD.—On Sept. 15th, at West Dulwich, Hugh Nevill
Keeling, M.R.C.S., L.R.C.P., of 23, Bagdale, Whitby, third son of
the Rev. W. H. Keeling, to Caroline Mary, fourth daughter of
Daniel Wood, of West Norwood.
PRICE—CLARKE.—On Sept. 13th, at St. Andrew's Church, Clayhidon,
Harold Vaughan Price, F.R.C.S., to Marian Frances Violet, elder
daughter of Rev. Walrond Clarke, Clayhidon, Devon.
SEVIER—SADGROVE.—On Sept. 12th, at the parish church, Winston,
Alfred Hyslam Sevier, M.B., to Edith Evonie Frances, second
surviving daughter of the Rev. F. E. and Mrs. Sadgrove, Winston
Rectory, Darlington.
TAYLOR—STANSFELD.—On Sept. 13th, at Wragthorne Church, Leeds,
by the Rev. R. V. Taylor, B.A., Rector of Melbecks, Richmond,
Yorks, uncle of the bridegroom, Frank Edward Taylor, M.Sc.,
M.A., M.B., F.R.C.S., M.R.C.P., 11, Bentinck-street, Cavendish-
square, W., to Phœbe, eldest daughter of the late William Edward
Stansfeld and of Mrs. Stansfeld, of Ash Grove, Leeds.

DEATHS.

BATTYE.—At 51, Belgrave-road, S.W., on Sept. 20th, John Howard
Battye, M.D., younger son of the late Dr. R. Fawcett Battye, of
123, St. George's-road, S.W., aged 52. Funeral service at St. James-
the-Less, Westminster, 10.30 A.M. Saturday. No other intimation.
KIRTON.—On August 22nd, Marjorie, dearly loved twin baby of Rex
and Nellie Kirton.

[illegible] the insertion of Notices of Births,

Notes, Short Comments, and Answers to Correspondents.

SANITATION AT ST. MORITZ.

N our issue of August 19th we published a letter from Dr. T. W. Parkinson, mentionin that *some patients under his care who had* gone to St. Moritz complained of "the faulty drainage and consequent bad *smells" encountered there.* In reply to this THE LANCET of Sept. 16th contained a letter signed jointly by Dr. J. Frank Holland, the British Consul at St. Moritz, and Dr. Paul Gredig, President of the Society of Practising Physicians of the Upper Engadine. These gentlemen, while admitting "that in certain portions there were bad smells and that the visitors complained of them," maintained positively that the main drainage was sound, that the public health was in no way endangered, and that St. Moritz had been free from all those zymotic maladies that are associated with inefficient drainage. In *corroboration of this opinion* Dr. Holland has now forwarded to us a communication signed by *Dr. L Juvalta, medical officer* of health of the *district (Bezirksarzt),* showing all the cases of infectious disease reported to him from St. Moritz during the period from October, 1904, to Sept. 11th, 1905. The results are as follows: in October, November, and December, 1904, no *cases*; in January, 1905, *one* imported case of enteric fever; in February one case of diphtheria and some imported cases of scarlet fever; in March, no cases; in April, one case of rubeola; in May, *one case of croup*; in June, two imported *cases of* scarlet fever; in July, two imported cases, one of scarlet fever and one of *enteric fever*; and in August and September up to date, no cases.

THE BRITISH ALMANAC.

To the Editors of THE LANCET.

SIRS,—Would it be possible for you to make such representations as would prevent the appearance of the names and addresses of a few consulting physicians and consulting surgeons practising in London, under the heading, "Celebrities of the Day," in the next issue of "The British *Almanac*"? This periodical is published by Letts. In the edition of the almanac for 1905 the names and addresses of several of our brethren are given, with various comments, of which *the following* are examples—*namely*: "An authority on disorders of the digestion;" "an authority on antisepsis and the treatment of wounds;" "eminent physician, an authority on nervous disorders and diseases of the brain;" "eminent surgeon and authority on diseases of the brain;" "one of the leading operators in London, an authority on hernia and peritonitis;" "an authority on the surgery of the intestines."

I am, Sirs, yours faithfully,
JAMES SAWYER.

Birmingham, Sept. 19th, 1905.

THE BARKER MASSAGE MACHINE.

THERE are many and various apparatuses for giving mechanical *massage and although*, of course, no mechanical apparatus can altogether replace the human hand, yet a machine-driven instrument can produce sundry effects which the *human hand cannot.* The Barker massage machine is decidedly the best which we have seen for producing rapid vibratory movement. It is driven by a small electric motor which can easily be attached to the ordinary lamp supply and the motors are manufactured in various types corresponding to the nature of the current employed. The motion of the motor is transmitted to the vibratory apparatus by means of the ordinary flexible cable used for driving a dental engine. The vibratory apparatus itself is made of *various materials* and in various shapes and sizes for application to various parts of the body. We made personal trial of one or two of these and find that the effects are perfectly comfortable. There is no unpleasant knocking or jarring, as is the case with so many mechanically driven *vibrators.* The *machine is* almost noiseless and the vibrations are particularly even, the effect reminding the observer of that produced *by* a rapidly alternating electrical current. The London depôt whence the apparatus can be obtained is at 99, Regent-street, W. It does not appear to have been exploited as a means of cure for all and sundry diseases to be applied by any person who considers that he can treat himself.

STARTING HANDLE FOR MOTOR CARS.

To the Editors of THE LANCET.

SIRS,—I wish to bring before the notice of medical men who own six-horse power Wolseley cars the fact that I have recently had a *fixed* starting handle fitted *to my* small car. To my mind the frequent handling of the long handle as supplied by the Wolseley Company was a great nuisance, especially for doctors who require to stop and start often in the course of their rounds. I may add that the fixed handle is of a telescopic nature and is very *easily* manipulated and gives no trouble whatever.—I am, Sirs, yours faithfully,

CHARLES ORMEROD, M.D. Brux., M.R.C.S., L.R.C.P.

Burgess Hill, Sussex, Sept. 13th, 1905.

HOMING PIGEONS ATTACHED TO A FLOATING HO

THE homing pigeon is to be utilised in connexion with th
steamer *Columbia*, Victoria, B.C., belonging to the Anglica
The *Columbia* is specially designed to render ready aid to
may be injured in the coast logging camps. Accidents are
daily occurrence and many deaths have resulted from inabi
the injured men to a hospital in due time. The difficulty o
all the camps into constant touch with *the steamer in orde*
may respond to calls for aid with necessary promptitud
been solved by the establishment *of a pigeon* corps. Severa
birds are to be provided with quarters in a home loft at
The young birds, after a few trial flights, will be distribut
the camps and when medical aid is required a message will
the homers to the hospital ship, which will make Rock Bay
quarters.

PAPER BAGS AND OTHER SOURCES OF DISEA

To the Editors of THE LANCET.

SIRS,—There are many sources of disease apparently so sel
that they receive but slight, if any, attention by *the author*
books And this is my apology for directing the subject to t
notice of the profession. The following are a few of the inn
ways by which infectious *diseases* are quite unintentionally
nated, for "thoughtlessness is precisely the chief public calami
day."

Paper bags.—To open them *the* practice of blowing again
edges and into them is very common, and nearly all confe
fruiterers, grocers, and purveyors of food adopt this plan. T
bilities which might ensue if the breath were infected by the
a specific disease can be easily imagined.

Waste paper.—The use of old *newspapers*, &c. (often bough
shops), in poorer districts to wrap food in also deserves attentio

Drinking glasses.—Even at many high-class *schools thirsty*
girls are inadequately provided with clean *glasses* and *drink* a
other The *remedy is simple*—every child might be provide
glass to take to school in a wicker case.

Eating.—The danger to adults, and particularly *children*,
sweetmeats after each other is obvious and should be expl
them.

Kissing.—This danger has been often referred to and the pr
children kissing each other at school should be prohibited.
heads of schools at the commencement of the *session* an
subsequent sessions would give an interesting little health le
their charges I am satisfied *it* would do *a great amount* of good

I might conclude by saying that my experience extends to
not far short of a quarter of a century and I am confident in
mind that many cases I have attended could have *been* tra
some were) to such causes as indicated above.

I am, Sirs, yours faithfully,
MYER DUTCH, M.D. Durh., D.P.H. Canta

Cricklewood, Sept. 12th, 1905.

THE CARDIO-VASCULAR EFFECTS OF DORMIOL HEDONAL.

M. Mayor, in a contribution to the *Société de Thérapeutique*
(Répertoire de Pharmacie, 1905, No. 5, p. 237), *compares* th
of dormiol and hedonal with that of chloral. He *conside*
hedonal is too slightly soluble for convenient administrati
that the disagreeable taste of dormiol *is* a *disadvantage*
objections would not count for much were the remedies fre
deleterious action on the vessels and the heart. But M. Ma
seen aged dogs with old cardiac lesions succumb to hedon
Mayor would administer hedonal only after other drugs had
As for dormiol, he considers it *to be far inferior* to hedonal.

DEATH IN JUDICIAL HANGING.

To the Editors of THE LANCET.

SIRS,—Although the following extract from the *Gentleman's Ma*
for November, 1740 (p. 570), contains *nothing that* will help
correspondent "Enquirer," there is so much that is *of medical* i
in the circumstances which it narrates that a place *may be* as
it in THE LANCET.

> MONDAY, 24.
>
> Five malefactors were executed at *Tyburn, viz., Thomas*
> *William Meers, Margery Stanton, Eleanor Mumpman,* for
> Burglaries and Felonies; and *William Duell* for ravishing, r
> and murdering *Sarah Griffin* at *Acton.* The Body of *this l*
> brought to *Surgeon's Hall* to be anotomis'd [*sic*]; but after
> stripp'd and laid on the Board, and one of the Servants was w
> him *in order to be cut,* he perceived Life in him, and fou
> breath to come quicker and quicker; on which a Surgeon *too*
> *Ounces of Blood from him; in two* Hours he was able to sit
> his Chair, and in the Evening was again committed *to Newg*

It would be worth knowing whether, in *the days* when exec
were not infrequent in this country, and when batches sometimes
30, and 40 persons suffered together, coroners' inquests were held
the bodies. Was a medical certificate of death in each case dem
by the legislature? Your medico-legal readers will *perhaps* f
information upon these points.

I am, Sirs, yours faithfully,
W

Sept. 18th, 1905.

Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

St. Bartholomew's (1.30 P.M.), St.
h).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Mary's (2 30 P.M.),
3.30 P.M.), St. George's (2 P.M.), Chelsea (2 P.M.),
(1.30 P.M.), Westminster (2 P.M.), Soho-square
(Gynæcological, by Physicians, 2 P.M.), Gt. Northern Central (2.30 P.M.),
ity Orthopædic (4 P.M.), London Throat (9.30 A.M.), Royal Free
don (2.30 P.M.), Royal Ear (2 P.M.).
uy's (1.30 P.M.). St. Bartholomew's (1.30 P.M.), St.
6th).—London (2 P.M.), Middlesex (1.30 P.M.), West-
(3.30 P.M.), Guy's (1.30 P.M.), University College
2 P.M.), West London (2.30 P.M.), St. Mary's (1 P.M.), St. Mark's
St. George's (1 P.M.), Metropolitan (2.30 P.M.), London Throat
), Cancer (2 P.M.), Throat, Golden-
.), Samaritan (9.30 A.M. and 2.30 P.M.), Chelsea (2 P.M.), Central
30 A.M.), Soho-square (2 P.M.),
Throat and Ear (2 P.M.).
Y (27th).—St. Bartholomew's (1.30 P.M.), University College
Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross
, St. Thomas's (2 P.M.), London (2 P.M.), King's College
, St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.),
l Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan
. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern
(2.30 P.M.), Westminster (2 P.M.), Metropolitan (2 30 P.M.),
Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square
.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic

Y (28th).—St. Bartholomew's (1.30 P.M.), St. Thomas's
.), University College (2 P.M.), Charing Cross (3 P.M.), St.
's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex
.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West
(2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.),
olitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's
), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square
.M.), Guy's (1.30 P.M.). Royal Orthopædic (9 A.M.), Royal Ear
).
30th) [illegible] (2 P.M.) St. Bartholomew's (1.30 P.M.), St.

ern Central (2.30 P.M.), West London [illegible] Throat,
t (9 30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Soho-square
en square (9.30 A.M.). City Orthopædic (2.30 P.M.).
.). Central London Throat and Ear (2 P.M.).
AY (30th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex
P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.),
ing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.),
at, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

e Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic
), the Royal Westminster Ophthalmic (1.30 P.M.), and the
London Ophthalmic Hospitals operations are performed daily.

TURES, ADDRESSES, DEMONSTRATIONS, &c.

AY (25th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC
Chenies street, W.C.).—4 P.M. Mr. T. J. Hitchins: Clinique.
.)
GRADUATE COLLEGE (West London Hospital, Hammersmith-
W.). 2 P.M. Dr Arthur: Skiagraphy.
AY (26th). MEDICAL GRADUATES' COLLEGE AND POLYCLINIC
Chenies street, W C.).—4 P.M. Dr. W. Ewart: Clinique
edical.)
GRADUATE COLLEGE (West London Hospital, Hammersmith-
d, W.). 10 A.M. Dr. Shuter: Anæsthetics. 5 P.M. Dr. Abraham:
in Diseases
ESDAY (27th).—MEDICAL GRADUATES' COLLEGE AND POLY-
INIC (22, Chenies street, W.C.).—4 P.M. Mr. P. L. Daniel:
inique. (Surgical.)
GRADUATE COLLEGE (West London Hospital, Hammersmith-
d W.).—3 P.M. Mr Bidwell: Intestinal Anastomoses
SDAY (28th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC
2, Chenies street, W.C.).—4 P.M. Mr. Hutchinson: Clinique
urgical.)
T GRADUATE COLLEGE (West London Hospital, Hammersmith-
d W.)—2 P.M. Dr. Arthur: Skiagraphy.
AY (29th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC,
2, Chenies-street, W.C.).—4 P.M. Clinique (Eye)
T GRADUATE COLLEGE (West London Hospital, Hammersmith-
ad, W.).—10 A.M. Dr Shuter: Anæsthetics. 3 P.M. Dr Abraham:
kin Diseases. 4 30 P.M. Mr. Bidwell: Intestinal Surgery.

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t is most important that communications relating to the
torial business of THE LANCET should be addressed
sively "TO THE EDITORS," and not in any case to any
leman who may be supposed to be connected with the
torial staff. It is urgently necessary that attention be
n to this notice.

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having a medical interest, or which it is desirable to bring
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We cannot undertake to return MSS. not used.

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METEOROLOGICAL READINGS.

(Taken daily at noon by Steward's Instruments.)

THE LANCET Office, Sept. 21st, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radia in Vacuo.	Maximum Temp Shade	Min Temp	Wet Bulb	Dry Bulb	Remarks.
Sept. 15	30 29	N.E.	...	107	62	46	49	51	Fine
" 16	30·19	N.W.	...	106	65	50	52	56	Overcast
" 17	30·36	N.E.	...	103	65	52	51	53	Fine
" 18	30·14	N.E.	...	114	65	52	53	57	Dull
" 19	29 89	N.E.	...	99	65	52	52	54	Dull
" 20	30 04	N.W.	...	93	62	51	53	56	Fine
" 21	30·13	N.E.	...	97	59	47	48	51	Fine

During the week marked copies of the following newspapers have been received: *Catholic Times, Yorkshire Post, Wigan Observer, Western Mail, Westminster Gazette, Birmingham Post, East End News, Daily Telegraph, West London Gazette, Hampshire Advertiser, South Tottenham Union Guardian, Southampton Echo, Acton Gazette, Halifax Courier, Morning Advertiser, Financial News, Daily News, Edinburgh Evening News, Scottish Review, Longton Times, Wolverhampton Midland Express, Darlington Times, Citizen, Newcastle Chronicle, Kentish Mercury, Herts Mercury, Literary Digest (New York) Scientific American, Glasgow Herald, Norwich Daily Press, Hospital, Army and Navy Gazette, &c.*

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